

TAX MORALE:
THEORY AND EMPIRICAL ANALYSIS OF
TAX COMPLIANCE

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vorgelegt von
Benno Torgler
aus
Au im Kanton St. Gallen

Auf Antrag der Herren
Prof. Dr. René L. Frey
Universität Basel, WWZ
und
Prof. Dr. Dr. h.c. mult. Bruno S. Frey
Universität Zürich, IEW

Genehmigt von der Wirtschaftswissenschaftlichen Fakultät der Universität Basel
auf Antrag von Prof. Dr. René L. Frey und Prof. Dr. Dr. h.c. mult. Bruno S.
Frey.

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Der Dekan
Prof. Dr. Werner R. Müller

Preface and Acknowledgements

Searching for an adequate dissertation topic is always a difficult issue for a young researcher. I chose tax morale for several reasons. First of all I searched for a topic that is not so dependent on the current political process being less attractive in a couple of years. Taxation is an issue that has been relevant in the last 6000 years of human history and will continue to be relevant in the future. Taxation was insofar strategically interesting as my doctoral father, René L. Frey, has been an expert in this topic for many years. In a second step, I asked myself what kind of topic might be interesting for research attempts, as taxation is a huge area. This question was less difficult to answer, as I have been inspired and influenced by the work of Bruno S. Frey, my second dissertation advisor, during my time as a student at the University of Zurich, as he was among the first researchers who systematically analysed the role of tax morale, stressing the relevance of deepening the research efforts to understand why people pay taxes. Tax morale is an interesting topic, as it allows to check to which extent it makes sense to extend economics with aspects from other social sciences as, e.g., social psychology or sociology. The tax compliance literature is a good example for the fruitful interdisciplinary dialogue between different social sciences. Furthermore, an attractive fact for a young scientist is that this topic allows to learn to deal with different instruments such as surveys, experiments, or even field experiments.

Many people have contributed a great deal to this dissertation. I would like to start the acknowledgements with two short stories that are connected with both dissertation advisors. Undecided about what to study at the University of Zurich, my brother Andreas, who at that time was just finishing his studies in business administration, said to me: “I see you as a typical economics student. Take this book about economics to see whether you know what to do with it”. Interestingly, it was the book *Wirtschaft, Staat und Wohlfahrt* written by René L. Frey, which I started to read immediately and which attracted my attention and helped in my decision to study economics. Thus, René L. Frey influenced me many years before I became an assistant at his department. At that time I never thought about the possibility to work with him in the future. I will never be able to properly express the thanks I owe him. He always enthusiastically supported and encouraged my work, reading and commenting all first draft papers and reducing all possible research restrictions (e.g., buying data sets and statistic programs, paying submission fees, stressing the relevance of participating at international conferences etc.). I am deeply impressed by his ability to always see the major limitations and strengths of a paper. His comments significantly improved the quality of the papers.

Furthermore, I was strongly influenced by his philosophy to make papers “understandable”, avoiding complex structures that affect the readability, to see the relevance of an applied research focus, and to expose the research thoughts not only in academia but also to a broader audience. His friendly character helped to create an excellent working atmosphere at our department. Furthermore, he offered me the possibility to independently manage parts of *KYKLOS*, which I appreciated very much. His dedication as an academic teacher is impressive and I hope that in the future I will get the possibility to follow his example.

One of the first lectures attended at the University of Zurich was given by Bruno S. Frey, showing how the economic way of thinking and analysing can be fruitfully used to analyse social problems which go beyond the traditional topics of economics. As a consequence, from that day on there was often a divergence between those books and papers which I had to read in some classes, based on the traditional economic approach, and the ones that I preferred to read focusing on the expansion of economics to other spheres and on the reorientation of economics including aspects of other social sciences. Bruno S. Frey has been a source of inspiration throughout the whole dissertation work. His work attitude as a researcher, over the years publishing continuously in top journals and having always new fascinating ideas, is exemplary and his dedication to help young economists to become good researchers is remarkable. He always stimulated me and thus it is not surprising that many parts in this dissertation have strongly been influenced by his research activities. He is supporting my work since the beginning and his comments helped to increase the quality of the papers presented in this dissertation.

A key figure in this dissertation has been Doris Aebi. She went patiently through all the papers and her skillful editorial work and profound suggestions were invaluable. She has advanced to an expert in tax compliance. I remember, for example, that three times she found a mistake in the interpretation of multiple regression results. Furthermore, it was a pleasure to work with her for *KYKLOS* where we formed a good team.

In addition I would like to acknowledge the contribution of my working colleagues. The department was an extremely congenial and intellectually stimulating environment. It was an interesting experience to work together with Christoph A. Schaltegger in two papers. I especially admire his professionalism as an economist and look forward to cooperate with him in the future. Christoph Kilchenmann and Markus Gmünder always offered sound advice, also in situations when they had a lot of work to do. Their remarkable general knowledge was a great help and their kindness the basis for enjoyable days in the office. People from other

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It is a pleasure to pay tribute to the indispensable and careful cooperation of the tax administration in Trimbach. I would like to mention Adolf Müller and Gary Bitterli, who offered the author the opportunity to collect the data and assisted the field experiment.

Several papers have been presented at Frey-Frey seminars. Thanks to the participants, in particular Matthias Benz, Simon Lüchinger, Stephan Meier, Reto Jegen, and Alois Stutzer for comments and suggestions. Papers in this dissertation have also been presented at the Summer School on Advanced Methods in the Social Sciences in Lugano (August/September 2001), the Public Choice Society and Economic Science Association Meetings in San Diego (March 2002), the European Public Choice Society Meeting in Belgirate (March 2002), the National Tax Association Conference in Orlando (November, 2002), the Public Choice Society and Economic Science Association Meeting in Nashville (March, 2003, by Christoph A. Schaltegger) and the Annual Meeting of the Swiss Society of Economics and Statistics 2003 in Berne. Thanks to those participants who gave their comments and suggestions.

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Also, I would like to thank the WWZ Forum. The funds I received from them made it possible for me to dedicate more time to completing my dissertation during 18 months.

Several papers have been accepted for publication or have already been published in refereed journals. Thanks are due to several anonymous referees and journal editors who with their critical comments helped improve the papers. It should be noticed that I have revised all the papers in this dissertation in order to reduce intersections (especially regarding the introduction of the data and empirical modelling) as far as possible.

In addition, I would like to express my gratitude and indebtedness to my wife, Manuela, for her support and understanding. She had the patience to prevent me from overemphasising work in my life. Furthermore, as a sign for my gratitude for the constant support they gave me, I wish to dedicate this thesis to my family. And last, but not least I want to acknowledge the contribution of my newly born daughter Jessica who was sitting or sleeping next to me for many hours while I finishing this dissertation.

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Benno Torgler

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PART ONE:

BACKGROUNDS AND RESEARCH OVERVIEWS

Though tax records are generally looked upon as a nuisance, the day may come when historians will realize that tax records tell the real story behind civilized life. How people were taxed, who was taxed, and what was taxed tell more about a society than anything else (p. 21).

Charles Adams (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.

CHAPTER I

INTRODUCTION: TAX MORALE, A CONTRIBUTION TO THE PUZZLE OF TAX COMPLIANCE

I. TAX MORALE

Taxation is an important issue, today as well as in the past and the future. First detailed information about taxation can be found in Ancient Egypt¹. Countries were confronted with similar problems as we are today. For example, the pharaohs searched for ways to reduce corruption of their tax collectors (called *scribes*). The scribes obtained, e.g., high salaries to reduce the incentives to enrich themselves by cheating taxpayers. Furthermore, scribes working in the field were controlled by a group of special scribes from the head office. Today, corruption of the tax agency is still a problem, especially in developing countries. The famous Rosetta Stone, inscribed around 200 B.C. during the reign of Ptolemy, did not only help to maintain the hieroglyphic knowledge, but it is also the first “tax-oriented” documentation which reports a tax amnesty, where tax rebels were released from prison, remitting them also the tax debts. The success of the tax amnesty increased the incentive to use this instrument as a regular medicine to check civil disorder (see Adams 1993). Even today, there is still a huge political interest in tax amnesty programs all around the world. Pharaohs were also confronted with the question how taxpayers should be treated. The tomb of Khiti describes a scene in which taxpayers were roughly treated by tax scribes, being for example clubbed with apparent ferocity (Adams 1993, p. 8). However Adams (1993) has collected inscriptions where tax collectors were taught to be kindly: “If a poor farmer is in arrears with his taxes, remit two-thirds of them”, “cheer up everyone and put them in good humour”, or “if anyone is suffering under pressure of taxation or is at the end of his means, you must let the case go unchecked”. As we are going to see, questions about the effects of tax administration’s behaviour towards taxpayers have obtained increased attention in the present tax compliance literature.

However, despite their crucial importance in citizens’ life, many issues had rarely been studied. This dissertation is designed to bring new light into the tax compliance literature, focusing on tax morale. Why is it important to analyse tax morale? Why do people pay taxes? This question has obtained increased attention in the tax compliance literature in the last few years. It can be supposed that nobody likes paying taxes. One possibility is to “enforce” people to pay their taxes following a deterrence policy. In line with the economic-of-crime approach based on the expected utility maximisation calculus, Allingham and Sandmo (1972) presented a formal model with the insight that the extent of tax evasion is negatively correlated with the probability of detection and the degree of punishment. However, this

¹ Adams (1993) and Webber and Wildavsky (1986) give a good overview on the history of taxation.

pathbreaking model has been criticised by many authors (see, e.g., Graetz and Wilde 1985, Alm, McClelland and Schulze 1992, Frey and Feld 2002). A main point which is connected to the empirical and experimental findings is that these deterrence models predict too little tax evasion. In many countries the level of deterrence is too low to explain the high degree of tax compliance. Furthermore, there is a big gap between the amount of risk aversion that would grant such a compliance and the effectively reported degree of risk aversion. For the United States, the estimated Arrow-Pratt measure of risk aversion is between one and two, but only a value of 30 would explain the observed compliance rate (see Graetz and Wilde 1985, Alm, McClelland and Schulze 1992). Similarly, in Switzerland the relative risk aversion varies between 1 and 2, but a value of 30.75 would be necessary to reach the observed level of tax compliance of 76.52 percent (see Frey and Feld 2002). Furthermore, tax compliance experiments mostly report a higher level of income declaration than the expected utility model would predict (for a survey see Torgler 2002).

Elffers (2000) points out that

“the gloomy picture of massive tax evasion is a phantom” (p. 185).

Pyle (1991) criticises the assumption that individuals are amoral utility maximisers:

“Causal observation suggests that not all individuals think quite like that. Indeed, it seems that whilst the odds are heavily in favour of evaders getting away with it, the vast majority of taxpayers behave honestly” (p. 173).

To resolve this puzzle of tax compliance, many researchers have argued that tax morale, seen as the intrinsic motivation to pay taxes, can help to explain the high degree of tax compliance (see, e.g., Schwartz and Orleans 1967, Lewis 1982, Roth, Scholz and Witte 1989, Alm, McClelland and Schulze 1992, 1999, Pommerehne, Hart and Frey 1994, Frey 1997, 2003, Frey and Feld 2002, Feld and Tyran 2002, for a survey see also Frey and Torgler 2002).

First important findings in the tax morale literature date from the 60s and 70s by German scholars around Günter Schmolders (1951/1952, 1960, 1962, 1970) known as the “Cologne school of tax psychology”. They have emphasised that economic phenomena should not only be analysed from the traditional point of view. They saw tax morale as an attitude regarding tax (non-) compliance (see, e.g., Schmolders 1960). In their surveys they used the subjective tax burden as an indicator for the level of tax morale and found that self-employed people had a lower tax morale than employees. Strümpel (1969), for example,

analysed tax morale and the tax systems on the basis of an international comparative survey in Europe. He points out that treating taxpayers with great caution helps cultivate tax morale and to reduce tax compliance costs.

In the 90s, aspects around tax morale have increasingly attracted attention. Why so many people pay their taxes although fines and audit probability are low has become a central question in the tax compliance literature. Erard and Feinstein (1994) stress the relevance of integrating moral sentiments into the models to provide a reasonable explanation of actual compliance behaviour. And Andreoni, Erard and Feinstein (1998) point out that

“adding moral and social dynamics to models of tax compliance is as yet a largely undeveloped area of research” (p. 852).

Many researchers stress that a considerable portion of taxpayers are always honest. Some taxpayers are “simply predisposed NOT to evade” (Long and Swinger 1991, p. 130) and thus do not even search for ways to cheat at taxes (see Frey 1999). Furthermore, Elffers (2000) points out that not everyone with

“an inclination to dodge his taxes is able to translate his intention into action” (p. 187).

Many individuals do not have the opportunity or the knowledge and resources to evade.

Weck (1983) found in an empirical analysis that there is a negative correlation between tax morale and the size of shadow economy. Compared to other variables tax morale had the most significant impact on the size of shadow economy. However, in such an analysis, tax morale is treated as an exogenous residual. One of the main purposes of this dissertation is to identify which factors have an impact on tax morale.

The analysis of tax morale as dependent variable is rather novel in the tax compliance literature. Recently, Orviska and Hudson (2002) found with the British Social Attitudes Survey that law abidance had a positive effect on tax morale.

II. METHODOLOGY

Similar to Leijonhufvud's (1973) classic paper "Life among the Econ" we observe the tendency that economists from a methodological point of view behave like two isolated tribes. The intention of this dissertation is to use a broad variety of different methodological instruments to analyse tax morale and tax compliance, as each instrument has advantages and shortcomings. Dependent on the research question, the adequate instrument of analysis has been taken into account. Thus, this dissertation tries to bridge the gap between the two methodologies or research communities, working either with surveys or experiments, and each criticising the other "tribe". Starmer (1999), e.g., focusing on the enthusiasm and the scepticism regarding experiments points out:

"One might be forgiven for wondering whether these writers are talking about the same discipline!" (p. 2).

Robustness can also be analysed using different methodologies for the same question. If both instruments show the same tendencies we can suppose that the results are quite robust.

1. Surveys

The most frequently used instrument in this dissertation are surveys. One reason is that there is a lack of empirical evidence in the analysis of tax morale. New survey data sources allow to measure tax morale as dependent variable and to search for factors that shape tax morale. Thus, this part of investigation offers a novel perspective in the tax compliance literature. First of all, in the next two subsections the advantages and disadvantages of surveys are treated before introducing the way tax morale has been measured and giving information about the econometric estimation methods.

1. Advantages

Surveys provide a good source of information about tax morale. A main advantage is that they include many socio-economic, demographic and attitudinal variables. This helps to

investigate and test a rich set of (new) theories on tax morale. In a multivariate analysis it can be analysed what shapes tax morale. Furthermore, surveys help to compare different countries and to get insights into tax morale development over time. In the last years, economists have increasingly focused on surveys (see, for example, the happiness research done by Frey and Stutzer 2002). One reason might be that survey research uses more sophisticated statistical techniques and designs compared to early years. Jackson and Milliron (1986) point out that compliance variables appear to be highly correlated which makes multivariate rather than univariate testing appropriate.

2. Disadvantages and Problems

A critical aspect of surveys is the fact that studies can be biased if they do not cover a representative share of the population. A high response rate is there essential. We are going to work with well-known data sets as *World Values Survey*, *International Social Survey Programme* (ISSP) or the *Latinobarómetro* covering many countries and being conducted on a regular basis. These surveys pay especial attention to the representativeness of the data set. The sensitive nature of compliance information might create the incentive not to participate in such a survey. To reduce this problem, this dissertation focuses on data sets that cover a broad variety of questions on different topics. The only exception is the *Taxpayer Opinion Survey*. Furthermore, as we are going to see, the way we define tax morale is less sensitive compared to a question asking whether a person has evaded taxes or not. Thus, it can be supposed that we observe a higher degree of honesty in the answers to these questions.

3. Measurement of Tax Morale and Data Sources

Many empirical studies have used the data from the Taxpayer Compliance Measurement Program (TCMP) (see, e.g., Clotfelter 1983, Witte and Woodbury 1985, Dubin and Wilde 1988). The TCMP is a program of audits conducted on stratified random sample or returns (the last one in 1988). 40% of U.S. households underpaid their taxes in 1988, 53% paid correctly, and 7% overpaid. The main advantage of this data is the possibility to estimate the impact of policy parameters as, e.g., audit rates, penalty rates, marginal tax rates upon measures of tax evasion. However, although the TCMP seems to be among the best data

sources, the data has some deficiencies; for instance, tax administrations cannot detect all the underreported income, as tax evaders are often not caught. Furthermore there is the difficulty of separating “honest” errors and intentional errors (see Alm 1991). Finally, the TCMP is based on data from the United States and has a lack of socio-economic variables. It might be important to analyse European data empirically to get a broader picture. Compared to TCMP data, surveys of taxpayers’ attitudes have the advantage that they include many socio-economic, demographic, and attitudinal variables that are not available in tax return and audit data. In general, the empirical evidence in the tax compliance literature is rare. Pyle (1993) points out in a survey:

“The solution should lie in the results of empirical studies. Alas, the current harvest of such studies is remarkably thin” (p. 73).

Similarly, Andreoni, Erard and Feinstein (1998) stress:

“Although many empirical studies of noncompliance have been conducted during the past decade, we believe that the empirical literature is still in its youth, with many of the most important behavioural hypotheses and policy questions yet to be adequately investigated” (pp. 835-836).

In general, evidence on tax compliance and tax morale in countries outside the United States is rare. Little is therefore known about general tendencies of tax compliance in Europe, Asia or Latin America. One of the aims of this dissertation is to fill this gap, working with different kinds of data sets.

We are going to work intensively with the World Values Survey (WVS). It is a worldwide investigation of socio-cultural and political change collecting comparative data on values and belief systems among people around the world. WVS builds on the European Values Surveys, first carried out in 1981-1984. A second wave of surveys was completed in 1990-1993, a third one in 1995-1997 and a fourth has been done jointly by the EVS and WVS groups, in 1999-2001 and is going to be available in 2003. We are going to analyse the first three waves. This huge data set permits cross-country comparison of people’s tax morale in more than 40 societies around the world, representing about 70 percent of the world population, and is based on representative national samples. Thus, the WVS has the advantage to cover a wide variety of religious and cultural traditions and helps to analyse value changes over time. The WVS has been broadly used by political scientists (see, e.g., Inglehart 1997,

2000), and also economists as, e.g., Knack and Keefer (1997), Slemrod (2002), Torgler (2003a) have started to analyse the WVS data².

To assess the level of tax morale in the WVS we use the following question throughout the whole dissertation:

“Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: ... Cheating on tax if you have the chance”. The question leads to a ten scale index of tax morale with the two extreme points “never justified” and “always justified”.

The ten-point scale has been recoded into a four-point scale (0, 1, 2, 3), with the value 3 standing for “never justifiable”. 4-10 have been integrated in the value 0 due to a lack of variance.

A second important data set in this work is the Latinobarómetro. It is an annual public opinion survey carried out in 17 Latin American countries (since 1996). It reports the opinions, attitudes, and behaviours of the around 400 million inhabitants of the region. The survey started with 8 countries in 1995 and was extended to 17 countries in 1996. It covers most of Latin America with the exception of Cuba, the Dominican Republic, and Puerto Rico. This data set is not as well known as the WVS. However, economists have also recently discovered this data source (see, e.g., Graham and Pettinato 2002, who contributed to the happiness research). We are going to analyse the 1998 Latinobarómetro which considered tax morale and tax evasion questions. This data set has integrated a similar question which allows to measure tax morale:

“On a scale of 1 to 10, where 1 means not at all justifiable and 10 means totally justifiable, how justifiable do you believe it is to: Manage to avoid paying all his tax”.

To compare both data sets (WVS and Latinobarómetro) tax morale has been coded as previously (3=highest tax morale, 0=lowest tax morale). Furthermore, the Latinobarómetro has the advantage to cover additional tax compliance questions. Tax avoidance and tax

² Torgler (2003a), for example, analysed the willingness to go to war in different OECD countries. The descriptive results indicate that the Northern part of Europe, especially Scandinavian countries, have a high willingness to fight, contrary to countries as Italy, Belgium, Japan and Germany. In general, a small increase in the willingness over time is observed. In a second step, the paper evaluates United States, Switzerland, Spain, Norway and West Germany separately to get a general picture about the robustness of the main variables. The study found evidence that factors as national pride, trust in the army, the government, and the legal system have a positive effect on individuals' willingness to go to war.

evasion are often not distinguished in economic studies. We have the possibility to analyse both components. Whereas the World Values Survey focuses on evasion, the Latinobarómetro puts into account tax avoidance. Tax evasion might produce higher moral costs than tax avoidance, as the latter is more broadly accepted being a rather legal strategy to escape from tax payments.

In one chapter we are going to work with the International Social Survey Programme (ISSP). Similar to the previous data sets, it is a continuing annual programme of cross-national collaboration. It started in 1983 and has grown to more than 30 nations (mostly European countries). We will analyse the data set RELIGION II (ISSP 1998). The following question was asked:

Do you feel it is wrong or not wrong if a taxpayer does not report all of his or her income in order to pay less income taxes? (1= not wrong, 2= a bit wrong, 3= wrong, 4=seriously wrong).

These three data sets have the advantage that they are designed as a wide-ranging survey, which reduces the probability of being suspicious and of creating framing effects by other tax context questions.

Finally, we are going to analyse the Taxpayer Opinion Survey (TOS), data collected in the United States in 1987 and providing a broad set of taxpayers' opinions and evaluations of aspects as the tax system, the Internal Revenue Service, tax evasion, cheating on taxes etc. The TOS will offer the possibility to separately analyse two determinants of tax evasion, overstating of deduction or expenses and underreporting income, as dependent variables. Furthermore, it covers the possibility to develop different tax morale variables to check the robustness of the results. Unfortunately, the TOS has not been used by many researchers (see, e.g., Smith 1992, Sheffrin and Triest 1992). Even if the data set is quite old, the huge amount of questions and the fact that not many papers have used the data set, makes it also attractive for newer research projects (see, e.g., Forest and Sheffrin 2002, using the 1990 TOS). Furthermore, after 1990, the TOS has not been conducted any more.

The way tax morale is measured in this dissertation is not free of biases. It can be argued that a taxpayer who has incurred in some illegal behaviour in the past will tend to excuse such a kind of behaviour declaring a high tax morale. However, our results indicate that in general there is a negative correlation between the degree of tax morale and the size of shadow economy. Furthermore, with US data we show that eleven different measurements of tax morale indicate a significant negative correlation with the dependent variable tax evasion measured as over-deduction and under-declaration, controlling for additional variables as age,

gender, education, marital status, income etc. And our results in Switzerland are in line with other studies using the degree of tax evasion as dependent variable. Certainly, it is possible to develop a tax morale variable using not only a single question to capture taxpayers' willingness to pay taxes and thus to increase the reliability and validity of a variable. On the other hand, it might be important to focus on a specific tax compliance question to constitute a reliable measure of tax morale. Using a single question has also the advantage that problems associated with the construction of an index can be reduced, such as complexity, especially regarding the measurement procedure or a low correlation between the items. However, in cross cultural comparisons single item measures should be treated with some caution. In countries where tax revenues are collected to finance a Dictator's war machine, for example, tax evasion might be justifiable. There could even be a moral duty not to pay taxes. Similarly, in authoritarian political systems people will search for "voice" or "exit" mechanisms as, e.g., tax resistance to express their preferences (see Torgler 2001).

This work has the advantage that it uses different data sets, covering different countries and years which allows a more refined of about tax morale. Thus, in some chapters we have the possibility to conduct panel evaluations in the sense of cross-section time series analyses. In general, the dissertation goes beyond the comparison of tax morale levels seeking to identify the determinants of tax morale.

4. Econometric Estimation Methods

In the analysis of partial correlations we are going to use weighted ordered probit models. We have used *weighted* ordered probit estimations to correct the samples and thus to get a reflection of the national distribution. In the estimations where we pooled several countries we have integrated an additional weighting variable. To get an equal number of weighted observations (around 1500) for each survey the original weight variable was multiplied by a constant for each country.

The ordered probit models are relevant in such an analysis insofar as they help analyse the ranking information of the scaled dependent variable tax morale. However, as in the ordered probit estimation, the equation has a nonlinear form, only the sign of the coefficient can be directly interpreted and not its size. Calculating the marginal effects is therefore a method to find the quantitative effect a variable has on tax morale (see, e.g., Frey and Stutzer 2002). The marginal effect indicates the change in the share of taxpayers (or the probability

of) belonging to a specific tax morale level, when the independent variable increases by one unit. In all survey evaluations (except TOS) the marginal effects are presented only for the highest tax morale value. To check the robustness of the results, in some estimations weighted least squares models are presented using tax morale as a cardinal variable. Furthermore, it should be noticed that answers as “don’t know” and missing values have been eliminated in all estimations.

In general, to avoid bias and inconsistency we are not going to drop out variables that are not statistically significant (see McCloskey and Ziliak 1996). Furthermore, much weight has been given to doing sensitivity tests, for example, trying to evaluate if the main variables are fragile, doing minor changes in the amount of variables, in order to see whether the main variables change and thus the conclusions would alter fundamentally.

2. Experiments

During the last 20 years economists have increasingly used experiments to analyse various topics (for a survey see, e.g., Roth 1995). Before this period, it could be argued that economics was a non-experimental science. Now, experimental papers have been published in the leading international economic journals. The recent Nobel Prize award to Vernon Smith indicates that experiments are an important instrument in economics and have acquired a significant degree of recognition and legitimation. The experiments which are going to be presented in this dissertation are interactive, considering the problem of public goods. The general design of all experiments was that the taxes paid were multiplied by a factor and then redistributed in equal shares to the members, independently from how much taxes someone had paid.

1. Advantages

Measuring tax evasion and tax compliance involves some problems. It is difficult to obtain information about tax compliance behaviour. Even if data about tax evaders could be obtained, tax evaders’ behaviour could be affected by specific circumstances, which are difficult to control. An experimental approach circumvents the problem of getting honest answers on illegal behaviour. Researchers can use own data obtained from experiments. The

strength of this approach is the possibility to control for and manipulate the variables of interest. This allows to reduce causality problems and thus gives good information not only about the relationship between two variables but also about the direction of the effect.

Fehr et al. (2003) point out that

“The exogenous variation of variables in controlled environments is the only truly reliable way to make causal inferences” (p. 1).

In general, the experiments done in this dissertation intend to replicate the structure of a voluntary income reporting. Subjects receive income and pay taxes on the reported income. The tax administration is simulated by defining, e.g., the probability of audit and the tax penalty on tax evasion. As we hold tax administration parameters constant, we checked the relevance of other parameters, as, e.g., fiscal redistribution, tax amnesties, or voting on tax compliance.

2. Disadvantages

Laboratory experiments have been criticised as a method that lacks realism. Choices in the laboratory may not accurately reflect the choices in “the outside world”, as the setting is too artificial. In our experiments we tried to increase their external validity by making them more realistic. Important factors in the tax compliance experiments as audit probability, fine rate, tax rate etc. have been adapted to real values. Furthermore, implementing *incentives* as money might further realism, increasing subjects’ motivation to act in a realistic manner. However, it is still difficult to find how big incentives have to be. We worked with payoff levels that were common in the newest tax compliance experiments published in leading journals as, e.g., *American Economic Review* or *Journal of Public Economics*.

An experiment should not replicate a real world decision setting in every detail, but create an appropriate abstract setting isolating the key elements. Certainly, it is still questionable whether the design of the experiment provides appropriate abstraction, but if a simplified experiment driven by theory fails to predict the theory, than it is also questionable whether a more complex environment can predict more (see Wilde 1980).

One problem cannot be solved completely with experiments. Heavy punishments, such as jail, are not possible to implement in tax compliance games. The absence of social pressures could inhibit the same psychological processes, which are important in the real

world. However, recent experiments aim to capture social stigma as a factor (see, e.g., Bosco and Mittone 1997).

Furthermore, an experimenter effect might be observable which reduces the validity of the experiment, influencing participants' view of what to do or creating the incentive to outwit the experimenter, seeing the whole situation as a "gamelike" atmosphere (see, e.g., Starmer 1999, Cross 1980). To reduce such a problem we have designed experiments where subjects have been randomly allocated to either an experimental group or a control group. This allows to single out the treatment effect. Thus, we analyse whether a behaviour varies, doing *one* systematic change in the design of the experiment. It can then be assumed that changes in the behaviour are due to changes in the experimental conditions (Starmer 1999). Furthermore, we have avoided to instruct the participants to maximise their net income as done by earlier studies (see, e.g., Friedland et al. 1978).

Many tax compliance games are done with students as participants. Do students have enough experience of filling in tax forms? Are students a satisfactory sample for studies of tax behaviour? It can be argued that students are not useless but the results should be interpreted carefully (see Webley et al. 1991). They correspond to a subject pool with a higher education and a higher IQ than an average citizen. They often come from families with a higher income than the average and their age ranges are limited (Fehr et al. 2003). However, there is evidence that students' responses are not different from those of other subjects in tax compliance experiments (see, e.g., Baldry 1987)³. Alm (1998) states:

"There is also no reason to believe that the cognitive processes of students are different from those of "real" people" (p. 43).

On the other hand, Gërçhani and Schram (2001) in their cross-country experiments in the Netherlands and Albania show the importance of subject pools. Thus, there isn't much that speaks against conducting the experiments with a broader population set. Certainly, the big advantage of working with students is their ability to easily understand abstract problems and experimental conditions. Working with the broader subject pool it is important that the experiments are not too long or complicated. The instruction should be understandable, otherwise strong biases could make the experiments useless. In this dissertation, we are also going to present an experiment done with real taxpayers. Choosing representative subjects,

³ See Cooper et al. (1999) for another kind of experiment. They observed a convergence behaviour over time between students and managers.

external validity can be improved. We conducted an experiment in Costa Rica, as payoff levels can be fixed at a lower level compared to experiments in Europe and giving therefore individuals an appropriate motivation. In all experiments we paid attention that subjects had understood the design well enough. In our laboratory experiments, 3 rounds were conducted before starting with the main evaluations.

Most of our conducted experiments covered more than 20 periods. This should take into account that real world behaviour may be, contrary to experiments, a product of learning and adapting (see Starmer 1999). Allowing subjects sufficient time in the experiments gives them the possibility to develop analogous mechanism. Furthermore, we gave them the opportunity to adjust their behaviour in each round. Feedbacks were generated and shown before each decision. Subjects were informed in each round on the audit probability, the penalty, the accumulated income (fortune) and the individual tax redistribution.

Certainly, the experiments in social sciences will never have the robustness of experiments done with physical objects. Human subjects are less predictable and the system they interact with, is much more open and variable. They might react more sensitively to the rules defined or to the context of an experiment in general. Thus, it is important to replicate the experiments to check the robustness of the results. Fehr et al. (2003) argue:

“If somebody believes that an important factor has been left unspecified or uncontrolled, or that this factor could not play a role in the experiment although in the external world it is likely to play a role, it is often possible to change the experimental conditions such that the factor that had initially been left out can now play a role” (p. 1).

Similarly Starmer (1999) points out:

“For example if the hypothesis is that ‘the free-rider theory failed because the incentives were too small’, then run a new experiment with bigger incentives. If it is suspected that communication between subjects enabled them to ‘beat’ the free-rider problem, design a new experiment which makes communication more difficult” (p. 12).

Thus, tax compliance literature can profit from experiments if researchers try to check the robustness of the design. In this dissertation we are going to present findings which are robust regarding a specific variation of the experimental design. In general, such a research procedure can be seen as a learning process: the more experiments are conducted, the clearer the obtained picture to be explained. You will never see the picture absolutely clear or in other

words, you will never have the possibility to finish the jigsaw, but the more pieces you have, the better you can identify some tendencies.

3. Econometric Estimation Methods and Experimental Designs

Contrary to many experiment evaluations in the literature, in most cases we are going to use models that allow to evaluate temporal dynamic processes. This is important as longitudinal data are available from experiments of 12 and 25 rounds. In the first experiment, the discrete logit models and the Cox regression models are used, which work with the event history analysis, a rapidly developing methodology in social science focusing on the occurrence of events. The probability that the event of full tax evasion occurs over time has been taken as dependent variable. In a next step other experiments use Tobit maximum likelihood estimations as the compliance rate varies between 0 and 1 and there were many observations with the values 0 and 1. To consider the panel structure of the data, we include the random-effects function in order to control time specific effects. In the whole dissertation, only one “one-shot” experiment has been designed. The data evaluation has been done with the robust rank-order test to check whether there is a significant difference between the treatment groups and the control group, based on the tax compliance rate. All experiments were accompanied with a post experiment questionnaire. For many years experimentalists have ignored to combine surveys with experiments. Certainly, the questionnaires should be designed so that questions with a strong relation to the previous experiment should be avoided, because of possible biases. But nothing speaks against the use of surveys which allow to develop control variables as gender, marital status, age, education etc. if not all participants were students. Interestingly, researchers as Fehr et al. (2003) who did not combine surveys with experiments for many years, have now started to work with both instruments.

All laboratory experiments had some similar structures. The experiments were conducted on computers programmed with z-Tree (Zurich Toolbox for Readymade Economic Experiments, Fischbacher 1998). The experimental software was quite interactive. Subjects were informed in each round about the audit probability, penalty, the accumulated income (fortune) and the individual tax redistribution. The use of a computer allowed for minimal experimenter-subject interaction during experimental sessions, which reduced possible framing effects. Furthermore, a computer system facilitates the accounting process (income distribution, tax redistribution and the accumulation of the income). Before playing between

12 and 25 rounds, 3 rounds were played to be certain that everybody did understand the program. Subjects were informed that the performance in the practice periods did not affect their payments. They were told that all the accumulated earnings during the experiment would be redeemed for cash at the end of the experiment at a fixed conversion rate. The only “veil of uncertainty” was on the number of rounds. This helps to prevent strategic behaviour in the final round. All the fiscal parameters, as tax rate, fine rate and probability of detection were known.

As people were well informed about the different tax parameters, they were confronted with a tax context language. We used neutral tax terms such as income to declare, tax rate, audit probability, fine rate, to integrate contextual factors which are important in determining tax reporting behaviour. This helps perceive the experiment as more than a mere gamble.

Many tax compliance experiments assume that tax agencies randomly select tax returns for audit and do not use information from the returns to determine audit. Contrary to such experiments we introduced an endogenous audit selection rule in our experiment. Thus, the probability of audit is endogenous, depending on the behaviour of taxpayers. Subjects were told that they face a 5 percent random probability of audit in each period. If a subject was audited and found to evade taxes, then the previous four periods were controlled. All the unpaid taxes plus a penalty on unpaid taxes of the same amount (fine rate = 2) had to be paid. If the audited subject had reported all income, the previous periods are not examined. Furthermore, in all experiments, except the one in CHAPTER XVI the audit probability increases from 5% to 10% depending on the amount of non-declared income between this year and last year's declaration. In such an experimental design the probability of audit is endogenous, depending on the behaviour of taxpayers throughout the experiment.

For this dissertation several cross-culture experiments have been conducted. We conducted experiments with different designs in Switzerland and Costa Rica. We paid attention to reduce the problems which arise in conducting a cross-culture experiment (see Roth 1995, pp. 282- 284). Experiments were done with the same major experimenters, to eliminate possible variations arising from uncontrolled procedural differences or uncontrolled personal differences between the experimenters. All instructions were presented in the same language (English) in both countries, because otherwise systematic differences between countries might arise due to the way the instructions are translated. Furthermore, payments given to the subjects are adapted to the situation in the country. The sum paid in the experiment was calculated in relation to the price of cross-culture homogenous goods (Coca

Cola, a hamburger (Big Mac), and a cinema ticket price). Thus, differences in the degree of compliance are not caused by differences related to the experimental payments.

3. Field Experiments

1. Advantages

Using controlled field experiments has many advantages. Compared to laboratory experiments, one of the main advantages is the implementation of tax authorities and not experimenters, which evokes real processes in the usual environment outside a laboratory setting. It helps to better test the effects of different instruments on taxpayers in the real situation of “filling out the tax form” and “paying the taxes”. This helps formulate practical advices on tax policy, based on a scientific test. Certainly, compared to lab experiments, this kind of experiments allows social and economic interactions and is thus less controlled, but causality can be better determined than in non-experimental studies (see Burtless 1995 about the advantages and problems of randomised field trials).

There is no observable experimental effect, as subjects were completely unaware of having taken part in the field experiment. The experiments are thus conducted in the usual environment where social and economic interactions occur (see Burtless 1995). This has the advantage that the subject pool is more representative than in laboratory experiments.

In this dissertation we had the possibility to work together with a local tax administration in Switzerland and thus to generate data which are rarely available for researchers. Individuals have been randomly assigned to avoid a systematic correlation between treatment status and (un)observed characteristics of participants (Burtless 1995).

Field experiments in tax compliance allow to test specific policy alternatives as, e.g., the effects of a higher perceived audit probability or the effects of moral suasion on tax compliance. Thus, the results have a strong policy implication and might be relevant for policymakers. However, it is surprising that we hardly find any field experiments in tax compliance literature. Higher transaction costs in organising a cooperation between the tax administration and the researchers, compared to laboratory experiments, and the sensitivity of the tax filling data might be reasons why field experiments are less frequently used.

2. Disadvantages

Field experiments consume a great deal of real resources. First a cooperation between the tax authorities must be established. It is difficult to develop and implement a treatment as it has to be approved by the tax administration and other government authorities. Thus, it can be supposed that sensitive or unorthodox treatments cannot be developed. Secondly, compared to laboratory experiments such experiments are costly in terms of time. The experiment has to be prepared before individuals receive their tax forms. It takes almost a year until all tax forms are returned to the tax administration and thus ready to evaluate. Thus, field experiments are limited in duration. While experiments can analyse intertemporal aspects, field experiments are mostly conducted once. For some questions it might be interesting to analyse to which extent a policy instrument works over time. A short-duration intervention might have an immediate effect, but long-term effects are unknown. Furthermore, questions as what would happen if a policy instrument as, e.g., moral suasion were used regularly remain unanswered.

3. Econometric Estimation Methods

First we are going to check if there is a significant difference between the control group and the treatment group. However, to get a real picture to which extent such a behaviour is the consequence of a treatment effect, control and treatment group are compared with values from the previous years. To get an information about the changes over time for the treatment group, the paired-sample t test (Wilcoxon) has been done. It allows to compare the mean values of a group in different time periods. The results in the descriptive analysis indicate that moral suasion seems not to have a strong effect on compliance. However, it is questionable whether possible differences remain stable using a multivariate analysis. Thus, to check this point we estimated ordered probit and least squares controlling for socio-demographic and socio-economic variables.

III. OVERVIEW ON THE DISSERTATION

1. Part One: Backgrounds and Research Overviews

Part One, covering five chapters, has the aim to set the stage, not only giving an overview about the actual research status in the tax compliance literature, but also looking at possible shortcomings and open questions.

CHAPTER II, titled “What Do we Know About Tax Morale and Tax Compliance?”, discusses three key factors that seem to be important for understanding tax morale: moral rules and sentiments, fairness, and the relationship between taxpayer and government. These three key elements in this survey are going to be important determinants in the empirical part of this dissertation. The first part focuses on social norms and discusses the four sentiments guilt, shame, duty, and fear. A false declaration will generate anxiety, guilt or, if caught, shame and thus a prejudice to taxpayer’s self-image. It is assumed that a taxpayer feels these moral costs which act as a restriction of the possibility set. On the other hand, if someone believes that the tax system is unfair, for example, having a high tax burden, moral costs to behave honestly decrease and tax evasion can be seen as a sort of self-defence. The analysis of social norms in general will be one of the most demanding challenges in the future research agenda. One of the main shortcomings is the limited amount of empirical evidence.

The shared conviction of how people ought to behave is part of a society’s social norms (see, e.g., Elster 1989). Adapting to the tax compliance literature, it means that individuals will comply and pay taxes as long as they believe that compliance is a social norm (see Alm, McClelland and Schulze 1999).

The second part of CHAPTER II presents two interesting economic theories which intend to explain tax morale and tax compliance by showing the limits of traditional economics. The approach of both theories is characterised by including partially a specific psychological effect to catch the relative importance of an effect without losing the spirit of the economic foundations (see Frey 1997, 1999).

In general, this dissertation can be seen as an attempt to extend the traditional neoclassic assumption, enriching theory with conceptions from other sciences as psychology without losing the economic foundation and testing them empirically. A neutral concept of taxpayers’ utility or preferences is considered, which includes different sorts of human motivation. Such a basis allows for a multi-faceted approach which goes beyond traditional emphasising of enforcement strategies to understand why individuals pay taxes. Investigations

in recent years have uncovered systematic deviations from the traditional homo economicus (for a survey see Torgler 2003b). In many experiments subjects appear to care about aspects as fairness, reciprocity, and distribution. In a recent paper Heinrich et al. (2001) undertook a large cross-cultural study of behaviour using ultimatum, public good, and dictator games. They found a large variation across the different cultural groups and argue that preferences and/or expectations are affected by group-specific conditions such as institutions or cultural fairness norms. Thus, it makes sense to work with the concept of a Homo Oeconomicus Maturus (HOM) proposed by Frey (1997), endowed with a more refined motivation structure. The model implicates a stronger psychological orientation, not only taking into account the price effect but also a crowding effect. As Frey (1997) points out, the crowding effect is compatible with economic reasoning, overcoming the limits of traditional economics towards a homogeneous social science, but ensuring the comparability with the traditional economic model, maintaining its simpleness and robustness.

The third part of CHAPTER II analyses two important factors in the tax compliance literature: fairness and the interaction between taxpayers and the government. For a long time fairness has been considered irrelevant for economic analysis. However, the tax compliance literature has successfully demonstrated that taxpayer's perception of fairness has an impact on the willingness to pay taxes. An unfair tax system could enhance the incentives to rationalise cheating. Based on the equity theory, it can be argued that taxpayers perceive their relationship with the state not only as a relationship of coercion, but also as one of exchange. Taxpayers are more inclined to comply to the law if the exchange between the paid tax and the performed government services are found to be equitable. The second aspect, the interaction between taxpayers and the government, is going to be a key determinant of this dissertation, especially in the empirical part. The hypothesis is that positive actions by the state are intended to increase taxpayers' positive attitudes and commitment to tax system and tax-payment, and thus to enhance compliant behaviour. More trust in the government, the tax administration and the legal system tend to increase tax morale and thus taxpayers' willingness to contribute with their taxes. This idea is strongly linked to the effects of institutions on tax morale. As tax compliance literature has often disregarded whether *institutions matter*, we are going to present empirical evidence that they have a strong impact on tax morale.

After this general survey paper, the second contribution in Part One titled "Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments" surveys experimental findings in the tax compliance literature. As we have seen in the methodological

part in this introduction, each instrument has its advantages and its shortcomings. A special survey on the evidence from experiments is presented because this instrument has convincingly shown that tax compliance is higher than traditional theories, based on the expected utility concept, would predict. Such findings increased the incentives to search for new factors that affect tax compliance. Furthermore, experimental findings show that the direction of the change in the degree of tax compliance, as a response to different deterrence policies, is not always consistent. The results tend to suggest that a higher audit rate leads to more compliance and that tax compliance is an increasing function of income and a decreasing function of the tax rate. However, mixed results indicate that it is important to let deterrence parameters constant and to analyse the relevance of social and institutional factors. CHAPTER III surveys such alternative factors. Experiments tried to evaluate the effects of social norms on tax compliance, including aspects as collective blame, moral constraints, or communication. Recently, cross-culture experiments have obtained increased attention. The idea is to isolate cultural effects conducting the same experiments in different countries. In general, the findings indicate that social norms affect individual reporting decision. Furthermore, while most studies focus on *punishment*, experiments have started to analyse the effects of *rewards* on tax compliance. The results indicate that rewards help to increase tax compliance. However, as the analysis of positive rewards in tax compliance research is still at its beginning, it is difficult to get a clear picture. For example, the long-term effects of rewards are still not known.

Equity considerations on the other hand merit a lot of attention in the tax compliance literature. It is interesting to notice that experimental findings go in line with survey findings, indicating that a higher equity leads to a higher compliance and a lower perceived equity to a lower tax compliance. However, most experiments have focused on the effect of horizontal equity, without analysing the perceived fairness of a taxpayer's exchange with the government. As some experiments have made efforts to design treatments to evaluate such an exchange mechanism, the paper surveys these findings. These experiments implemented treatments in which public good is provided. Taxes paid in a round were multiplied by a specific factor, and the resulting amount was then redistributed in equal shares to the members of the group, independently of the paid amount (see, e.g., Alm, Jackson and McKee 1993, Alm, McClelland and Schulze 1992). The results show that taxpayers are more inclined to comply to the law if the exchange between the paid tax and the performed government services are found to be equitable. Furthermore, if taxpayers can vote for the way taxes will be spent, they may feel more inclined to pay their taxes. A few experiments have shown that

voting has a positive effect on tax compliance (Alm, Jackson and McKee 1993, Alm, McClelland and Schulze 1999).

In general, the survey in CHAPTER III presents evidence to which extent alternative variables have enriched tax compliance research. A key “evolution” has been to expand the experiments based on a game between taxpayers and the tax authority to situations in which taxpayers’ interactions are considered, for example, including a public good structure. CHAPTER III finishes with an analysis of the limits and possibilities of tax compliance experiments and mentions some topic for future research endeavours.

Treating tax compliance it is important to stress the relevance of different possibilities to express attitudes towards a tax system. While tax compliance literature has mostly focused on the illegal strategy of tax evasion, another strategy could be to avoid taxes. Thus, the third survey in this dissertation entitled “The Economic Analysis of ‘Creative’ Compliance” intends to show the relevance of tax avoidance and thus to analyse related topics as complexity and tax knowledge. Furthermore, analysing tax avoidance induces the relevance to evaluate an additional player in the tax compliance process: the tax practitioner. Although it is possible to write a survey on these topics, such research attempts, especially concerning the effects of tax practitioners, are still in their infancy. Researchers in the 90s have just started to examine theoretically and empirically the influence of tax preparers, tax knowledge, and information on tax compliance.

Evasion is a direct violation of the rules, while avoidance summarizes activities that do not violate the rules, but that “run counter to the spirit of the laws” (Leitzel 2003, p. 3). CHAPTER IV points out that a key difference between tax evasion and tax avoidance is that tax avoidance reduces the moral costs of not behaving adequately. Surveys indicate that tax avoidance seems to be more broadly accepted than tax evasion (see, e.g., Kirchler, Maciejovsky and Schneider 2001). In general, tax laws define the opportunities for tax avoidance and therefore the relative price of tax avoidance. Law can be used by the taxpayers and tax preparers in a “creative” way, seeing it as a material to work on and liable to be transformed in the taxpayers’ own interest. However, this use depends on individuals’ knowledge and information and on the degree of complexity of the tax laws.

A taxpayer will compare the possible marginal benefits from the help of a tax preparer with the marginal cost. Benefits include among others time saving and a reduction of tax liability based on a tax preparer’s better understanding of the tax law. The tax compliance literature analysing the role of tax practitioners has strongly focused on, e.g., the compliance level of taxpayers who engaged tax agents, on the demand for tax preparation, and on factors

that affect tax preparers' behaviour. An interesting question is whether the average level of compliance varies between assisted and non assisted taxpayers. Many studies show that the average level of noncompliance is higher for returns prepared with paid assistance (see, e.g., Erard 1993). However, tax practitioners (taxpayers) are quite successful in finding their suitable client (practitioner). There is a certain market segmentation. Taxpayers who intend to minimise their taxes and who are high risk takers find tax agents who are good at finding loopholes (see Sakurai and Braithwaite 2001).

Discussions about tax evasion are often based on the assumption that tax evasion is not desirable. However, CHAPTER V titled "Is Tax Morale Never Justifiable?" argues that this assumption falls too short. It is important to analyse how tax rules have been implemented. There is a difference between those tax rules which have been implemented by a democratically legitimated political process and those forced by a dictator or by a not legitimated process or government. Focusing on authoritarian and developing countries, the chapter develops arguments that justify tax evasion. In a dictatorship it may be stressed that there is nothing immoral about tax evasion, if tax revenues are collected to finance a Dictator's regime or war machine. Looking at the situation in some developing countries, law-breaking helps to survive as transaction costs of behaving honestly are too high. The key problem is that the government is not able to sufficiently secure the property rights. On the other hand a combination of interventionism and bureaucracy is observed. Thus, a situation of "over-government" and "under-government" as Frey and Eichenberger (1999, p. 89) point out is observed. The government and the administration have a strong discretionary power over the allocation of resources which enhances corruption. Individuals' tax evasion is an "exit" option, a signal through which taxpayers can express their disagreement. Furthermore, it restricts government's ability to act as a Leviathan, reducing the tax revenues. Tax evasion is therefore not necessarily uncivil in its effects.

The chapter also shows that discussions about tax evasion are not novel. Tax evasion was, for example, intensely discussed among monks. The argument was about the evaluation of just taxes placed by a legitimated authority, serving a just cause and comprising a just distribution of the tax burden (see Crowe 1944).

CHAPTER V also builds the bridge between the theoretical part and the empirical evaluations conducted in the next chapters. It analyses the degree of tax morale over time the World Values Survey 1981-1984, 1990-1993 and 1995-1997, differentiating between OECD, developing and transition countries. In general the data evaluation does not indicate a decrease of tax morale in the 80s and the 90s as often argued. These findings correspond to

Buchanan's (1999) statement that the "temperature of taxpayers" was quite low in the 1980s and the 1990s after the years of taxpayer revolts in the late 1970s. However, a general decline in tax morale has been observed for the former Soviet Union and the Central and Eastern European countries, which are going to be analysed more in detail in CHAPTER X. Interestingly, CHAPTER V presents a significant negative correlation between the degree of tax morale and the size of shadow economy in % of GDP. As the size of shadow economy can be seen as an output measurement, we thus find evidence that there is a correlation between *attitudes* and the observed *behaviour*, a relationship which has been stressed by authors as, e.g., Ajzen and Fishbein (1980) or Lewis (1982).

2. Part Two: What Shapes Tax Morale?

In the first part, only simple correlations have been analysed. However, such correlations do not per se tell us anything about causes and effects. Thus, for a deeper analysis, multivariate regression estimations should be done. Based on the theoretical part we divided this part into two main aspects: trust and institutions and social norms.

1. Trust and Institutions

CHAPTER VI "Tax Morale, Rule-Governed Behaviour and Trust" presents the first deeper empirical evaluation using two data sets: the World Values Survey and the Taxpayer Opinion Survey. The empirical part is preceded by four theoretical sections. A main aim of this chapter is to show the relevance of rules to understand tax morale and tax compliance. Thus, the chapter stresses the importance of analysing the process of tax honesty and not just the outcome, and develops a typology of taxpayers. Filling out a tax form is connected to a kind of routine, a collection of rules and procedures that guide the behaviour in a regular tax filling procedure. This process has a personal component which makes it relevant to consider taxpayers' typology. If there are different typologies of taxpayers, rules and factors may affect behaviour differently. Contrary to the neoclassic theory of a fully rational actor, it can be argued that each type of taxpayer has already made a decision before filling out the tax forms. Thus, the typology of a person plays an important role in determining which routines are followed and which are not. Each type of taxpayer systematically disregards or considers

specific information. However, CHAPTER VI also shows that not only personal factors play a role in determining individuals' setting but also institutional structures. The aim is to continue the work of Vogel (1974) who has already developed a typology of taxpayers. In this chapter we are going to define four types of taxpayers: 1) the "Social Taxpayer", strongly influenced by social norms and feelings of guilt and shame, reacting sensitively to other people's believes, 2) the "Intrinsic Taxpayer", having the feeling of obligation to comply without being forced from outside and being sensitive to institutional facts, 3) the "Honest Taxpayer" who does not even search for ways to cheat on taxes and 4) the "Tax Evader" who reacts to the relative price changes due to higher punishment or higher audit probability and thus acts in line with the standard economic rational choice theory, comparing the expected value of evading taxes with the value of being honest. To visualise how these different taxpayers behave, simply graphics and models have been developed.

Based on this theoretical part the question has been asked whether it is possible to find tax policy strategies which have a positive effect on virtually all types of taxpayers. Stable and easily knowable institutions help create reliability and thus create public trust. If the government tries to generate trust with well functioning institutions, the cooperation of the "Intrinsic" and the "Social Taxpayer" are enhanced. A contrary reaction might be observed regarding the "Tax Evaders". If the government tries to generate trust, for example, reducing the audit probability and the fine rate, the incentive to evade taxes might increase. On the other hand, however, a higher tax enforcement can crowd out the motivation to pay taxes of honest taxpayers. But taking into account that a *universal enforcement* is quite high, total tax compliance of "Tax Evaders" cannot be achieved unless there is a tax administrator under every bed. Thus, working with a taxpayer typology shows that the same strategy might have different compliance effects.

This chapter empirically analyses to which extent a higher trust in the legal system, the government and the public officials has a positive influence on tax morale. With the first variable, more weight has been put on the constitutional level, while the second and the third variable analyse the current politico-economic level. With the World Values Survey 1990-1993 17 European countries have been integrated into the empirical evaluation. The results indicate that trust in the government and the legal system have a positive impact on tax morale. To check the robustness of the obtained results, the Taxpayer Opinion Survey 1987 has been analysed using four different proxies to define tax morale. The results also indicate that a higher trust in the public officials leads to higher tax morale. Thus, trust at the constitutional and the current politico-economic process level seem to be essential to a well-

functioning taxpayer society. The strategy of creating confidence is honoured with a higher tax morale.

CHAPTER VII, “Tax Morale and Institutions”, goes a step further in the analysis, evaluating the impact of direct democracy, trust in government, the court and the legal system as well as federalism on tax morale in Switzerland, working with two different data sets: the World Values Survey 1995-1997 and the International Social Survey Programme “Religion II” for the year 1999. This contribution might be interesting for the tax compliance literature as it systematically analyses the influence of institutions as direct democracy and federalism on tax morale which has been strongly neglected in the literature. Furthermore, contrary to many survey studies, the empirical model presented in this chapter has integrated traditional variables as audit probability, legal fines or individual tax rates.

The chapter starts with theoretical considerations regarding the effects of direct democracy, local autonomy and trust in institutions on tax morale. Direct democracy can be seen as a government precommitment, imposing restraints on its power and thus sending a signal that taxpayers are seen as responsible persons. Taxpayers are in the position to better monitor and control politicians via referenda and can act as rule setters via initiative, renegotiating, for example, the tax contract. Such an active role of taxpayers enhances civic virtue and thus tax morale. Federalism is a second institution which has been analysed in this chapter. Small structures have the advantage that citizens’ preferences are met better, as mechanisms of entry and exit and voice provide a strong incentive to produce public services in accordance to taxpayers’ preferences (see Hirschman 1970). Furthermore, if politicians are elected at the local level, they have an incentive to put citizens’ preferences into account (see Frey and Eichenberger 1999). The closeness between taxpayers, the tax administration and the local government may induce trust and thus enhance tax morale. A further advantage of a decentralised system is a better transparency of the input (taxes) – output (expenditures) relationship.

The empirical part in this chapter starts with analysing the effects of traditional variables of an economics-of-crime approach on tax morale, considering three basic variables of this approach: the fine rate of tax evasion, the probability of detection, and the individual tax rate. The results indicate that the basic tax evasion model does not perform in a satisfactory way. The coefficients of these main variables are mostly not significant in both data sets. Only in one estimation the audit probability is significant at the 10 percent level showing a positive sign. On the other hand, there is a negative correlation between the fine rate and the degree of tax morale without being statistically significant. Finally, the individual

tax rate has a significant negative effect on tax morale in one equation. The interesting finding is that coercion does not play such an eminent role in determining the degree of tax morale. Thus, the “basic evasion model” has to be extended with additional factors as, for example, formal and informal institutions.

The degree of direct democratic participation rights is measured in different ways. First the aggregated index of direct democratic rights developed by Stutzer (1999) is used. In a second step, the effects of all the single index components have been evaluated. Interestingly, in both data sets, the index with the strongest direct connection to taxes, the financial referendum index, has the highest coefficient value and the strongest marginal effects among the indexes. As including the single items into the equations separately disregards the fact that the instrument of initiative and referendum have different rationales, and as indexes do not tell as much as single instruments, a dummy on legislative referenda (mandatory) and the degree of signature requirements for legislative initiatives has been introduced. For both data sets the instrument of legislative referendum has a positive effect on tax morale, while on the other hand higher signature requirements lead to a lower tax morale, but without being statistically significant. The results remain stable controlling for cultural differences.

Similar to CHAPTER VI, trust measured as trust in the government and the legal system has a positive effect on tax morale. As democracy works as an institution that induces trust, the trust variables have been estimated first of all in separate estimations and then together with the variables direct democracy and federalism. In all estimations there is a highly significant positive correlation between trust and tax morale.

A higher local autonomy has also a statistically significant positive impact on tax morale in both data sets. Interestingly, introducing the variable of direct democracy, the coefficient for local autonomy loses its significance and its size in the WVS, while the direct democracy index remains robust. On the other hand, the ISSP data indicates that the variable for local autonomy remains highly significant, but with a lower significance level and with lower coefficient and marginal effect values for the direct democracy variable. These findings indicate that the two constitutional factors interact with each others, working as complements.

In general, CHAPTER VII reports strong empirical evidence that formal and informal institutions significantly influence tax morale in a positive way, controlling for the probability of detection, the fine rate, the tax rate, and socio-demographic and socio-economic factors and doing sensitivity tests.

As direct democratic participation rights can not only be found in Switzerland, we analyse in CHAPTER VIII whether direct democratic rights have also a positive effect on tax morale in the United States, using the WVS data set 1995-1997. The referendum has a long tradition in the United States. From the beginning, citizens have had the possibility to decide on major constitutional questions (see Magleby 1994).

Before starting with the empirical part, a short trip through history has been done to show the connection between democracy tendencies and taxation movements. In ancient Greece, where we find a development towards democracy, taxation was strongly based on voluntary contributions from the rich to the city-state. Leading citizens often donated three and four times the amount expected from them. The well-known public buildings, e.g., were mostly built with this money (see Adams 1993). Important Enlightenment scholars as, for example, Montesquieu have already stressed the problem that politicians and bureaucrats are not “morally superhuman” persons, pointing out that the tax laws should be defined by the citizens and not by the government.

Compared to Switzerland, the US data set has the disadvantage that individuals are classified by regions instead of states (New England, Middle Atlantic, South Atlantic, East South Central, West South Central, East North Central, West North Central, Rocky Mountain States, Pacific and California). Therefore, aggregated region indexes representing the degree of direct democracy have been created based on state data. Such a procedure has the disadvantage that inside a region we have states with different degrees of direct democracy. However, we find a certain regional diversion of direct legislation in the United States. Direct democracy is much more common in the western states, which can be historically explained (see Magleby 1994). It is important to notice that the results should be treated with caution as a classification by regions and not by states reduces the degree of freedoms and thus the robustness of the results. All coefficients covering direct and indirect initiative, popular referendum and signature threshold, defined as the inverse coefficient of the average signature threshold, have a positive effect on tax morale, being highly significant for all the coefficients (except popular referendum). Thus, results presented in CHAPTER VII and VIII show that the more taxpayers are allowed to participate in the decision making process, the more they honour these possibilities with a higher tax morale. The results are consistent among the two countries with the most intensive use of direct democracy at the state (cantonal) and the local level.

CHAPTER IX remains in the United States showing empirical insights from the Taxpayer Opinion Survey (TOS). As this data set covers a lot of tax context questions, a

couple of hypotheses can be tested. First of all, the link between tax morale and tax evasion has been analysed. In CHAPTER V we have already shown a negative correlation between tax morale and the size of shadow economy. However, to get a robust picture it is important to control for further factors in a multivariate analysis. This has been done in CHAPTER IX, measuring tax evasion as dependent variable with two questions, asking directly whether a person has 1) overstated any deductions and 2) has left some reportable income off in the past five years. Such questions may imply problems regarding the honesty of the answers or difficulties remembering past behaviour. However, it might be important to work with such questions as empirical data is barely available. Our findings indicate that a higher tax morale leads to significantly lower tax evasion. We have used eleven different proxies of tax morale and all coefficients of those variables are significant, with z-statistic values between -3.326 and -6.870 for estimations using over-deduction as dependent variable and values between -5.149 and -7.636 working with the dependent variable under-declaration. Thus, as the coefficient of tax morale is highly significant in all 22 equations it can be argued that tax morale is a key determinant to understand tax compliance, controlling for socio-demographic and socio-economic factors.

Furthermore, CHAPTER IX analyses tax morale as dependent variable to evaluate the effects of the tax authority, the tax system, the perceptions and experiences with deterrence factors and tax evasion, the awareness of tax issues, trust in government, social capital and obedience, and direct democratic participation rights on tax morale. A positive attitude towards the tax administration has been measured with three variables: 1) an index that evaluates how good the IRS works, 2) an index that measures the perceived honesty and fairness of the IRS, 3) an index that shows how taxpayers perceive help and information they get from the IRS. All three variables have a highly significant positive effect on tax morale.

In a next step the chapter analyses the perceived fairness of the tax system and the effects of direct democracy on tax morale. The results indicate that fairness has a significant positive effect on tax morale. The possibility of direct democratic participation has been captured with the inverse coefficient of the average signature thresholds. Contrary to the WVS evaluations in CHAPTER VIII, the TOS gives the information which state each person comes from, which enhances robustness of the result having more degrees of freedom. The chapter continues analysing whether tax complexity and tax form filling experience have an impact on tax morale. The findings indicate that both variables have the tendency to reduce tax morale. However, the marginal effects are small and the coefficients are not significant. Further we ask the question whether having been audited or perceiving a high probability of

being audited has a negative effect on tax morale. Actually, the results show that having been audited and expecting a higher probability of audit significantly reduces tax morale. Similarly, if people perceive that a big number of individuals in their own income level have been audited, their tax morale decreases significantly. On the other hand, people who believe more strongly that most people are honest out of fear of getting caught have a higher tax morale than others.

What about the effects of a higher IRS awareness? Especially people who talk about IRS and its activities to their friends have a lower tax morale than other individuals. Finally, the chapter analyses whether trust in public officials, social capital measured as trust in other people, and obedience have an impact on tax morale. Interestingly, a higher trust and a higher feeling of obedience have a highly significant positive effect on tax morale.

After having analysed Europe and the United States it makes sense to extend the empirical work to integrate regions as Latin America, Transition and Asian countries. Thus, the next three chapters have been dedicated to check whether these results remain robust in other cultures. As a main determinant trust has been analysed, measured as trust in the government, the president, and the legal system. It is interesting to analyse these regions as hardly any empirical evidence is available about the degree of tax morale and tax compliance, and to search for factors that shape these two determinants.

A transition process brings up many policy questions, especially regarding the tax system, the structure of the tax administration or the degree of political participation. In a transition process, revenue needs are an important issue. In such a situation the degree of individuals' tax morale might be a key determinant. CHAPTER X, "Tax Morale in Transition Countries" starts with analysing shortly taxation in transition countries. As a high amount of the total revenue stemmed from profit taxes during the Soviet State, individuals were not aware of taxes and thus had no perception of the tax burden. Thus, it is not surprising to see taxpayers' resistance movements in the reform process and undeveloped tax administrations which were not prepared to work with a modern income tax system (see Martinez-Vasquez and McNab 1997). Thus, it might be important to evaluate which factors influence tax morale to guarantee citizens' loyalty to the government.

The descriptive part working with the WVS shows that Central and Eastern Europe countries have a higher tax morale than Former Soviet Union countries. Furthermore, a decay of tax morale over time can be observed. These findings are in line with the registered decline of the living standard in the transition countries. In a further step the WVS waves 1989-1993 (20 transition countries) and 1995-1998 (10 transition countries) have been separately

analysed in a multivariate analysis. The regression results are comparable to the descriptive statistics. People from Central/East Europe have a significantly higher tax morale than people from Former Soviet Union countries. Trust is also a key determinant in the empirical part. Governments have a leading role in the transition process as institutional changes are connected to uncertainty. Stable and easily knowable institutions help create reliability. The data from the WVS 1990-1993 allow to analyse the effects of trust in the legal system on tax morale. Not surprisingly, and in line with evidence found in the previous chapters, there is a positive correlation between these two variables. The WVS wave 1995-1997 offers the unique possibility to evaluate the effects of several trust variables for the transition countries. We analysed not only trust in the legal system, but also trust in the government, satisfaction with national officers and a positive evaluation of the political system at the time the question was asked. The results show that all these trust variables have a positive influence on tax morale.

A higher political participation is also a social innovation for transition economies. Frey (2002) points out that social capital is both a precondition and a consequence of direct democracy. Institutions of civil societies are important in a transition process, helping, e.g., to reduce corruption in the transition process. We find that pro democratic attitudes have a positive effect on tax morale. Other variables as national pride, (financial) satisfaction, and happiness are correlated with a higher tax morale.

In a further step CHAPTER X analyses tax morale over time in different transition countries. As many transition countries had an institutional crisis after the collapse of communism, a reform process imposes costs of disorientation and economic burden (see Kasper and Streit 1999 and Gërkhani 2002). Thus, it is interesting to analyse tax morale development over time in different transition countries, as Russia, Estonia, Latvia, Lithuania, Belarus, Poland, Bulgaria, and Slovenia. The chapter gives a short overview of the general situation in each country before evaluating empirically the time factor. The findings indicate that there is the tendency for a tax morale decrease over time. The effects seem to be stronger in the Former Soviet Union economies than in the Central and Eastern European countries. These tendencies indicate that many countries have not succeeded to design tax systems, tax administrations, or government structures that taxpayers trust. On the other hand, a transition process gives the opportunity to build new trustworthy institutions. Our results indicate that trust is a key determinant to enhance tax morale. Thus, transition countries have to work on the goal to enforce trust with new institutional conditions. The decay of tax morale might be a signal that reforms at the constitutional level are needed. More direct democratic participation and a higher local autonomy can be such political institutions that raise trust and honesty.

CHAPTER XI analyses “Tax Morale in Latin America”. Similar to other chapters, more than one data set has been used to get a robust picture of Latin America: the Latinobarómetro (1998) and the World Values Survey (1981-1997). Before starting with the empirical part, this chapter gives an overview on the tax systems and the tax administrations in Latin America. These issues are important as many problems are observed, e.g., poor administration performance, lack in the collection of tax revenues, lack of equity considerations in the tax structure etc. Not surprisingly, the general level of tax revenues in percent of the GDP are quite low. In the 80s and 90s several tax reforms have been made. The chapter gives a short overview on the main tax reforms in countries as Peru, Bolivia, Chile, Guatemala, Colombia, and Mexico. Mexico is a special case as in this country the tax system has been reformed repeatedly, implementing very modern tax revenue structures. However, Mexico is a country with a high degree of tax evasion, a big shadow economy and, as this chapter shows, with a low degree of tax morale. Martinez-Vazquez (2001) tries to find possible reasons for than phenomenon. He mentions that the modern tax system structure is undermined by factors as ad hoc policy measures or a lack of an adequate ability of tax administrations to deal with a modern tax system.

The empirical part starts with a descriptive analysis of the degree of tax morale in Latin America using both data sets. For a few countries the WVS allows to get a picture of the degree of tax morale over time. Tax morale is not decreasing over time in Latin America. However, the number of countries that participated more than once in the WVS is too small to obtain reliable results. In general, the high participation rates in the WVS 1995-1997 and especially in the Latinobarómetro allow to get insights in regional differences, where Central America shows a tendency to a higher tax morale than South America. The descriptive part also shows that there is a significant negative correlation between the degree of tax morale and the rate of individuals stating that they know/heard about tax avoidance. Furthermore, there is a significant negative correlation between the size of shadow economy measured as the informal employment in % of the population and the degree of tax morale. This result corresponds to the findings obtained in CHAPTER V and IX. Finally, the descriptive part also evaluates for each country what individuals take for the reasons why others evade taxes. On average among all 17 countries the most frequently mentioned reason is the high tax rates (46.8 percent) followed by the lack of individual honesty (44.5 percent) and the degree of corruption (44.2 percent).

After this descriptive part, a multivariate analysis has been conducted. The results show that knowing about individuals who avoid taxes has a significant negative effect on tax

morale. Furthermore, tax morale is positively influenced by the confidence in other people abiding the laws and by a high trust in the president. On the other hand, a high perceived risk of being caught has no significant impact on tax morale showing a negative sign. The Latinobarómetro indicates that South America and Mexico have a significantly lower tax morale than Central America. Thus, the obtained results in the descriptive part remain robust in a multivariate analysis, controlling for socio-demographic and socio-economic factors. The significantly lower tax morale of Mexico remains robust in the WVS data analysis. Instead of trust in the president, the WVS analyses the satisfaction with officials. This allows to check the robustness of the trust variable expanding it with another relevant agent. The findings indicate that a higher satisfaction with officials induces a higher tax morale.

As political participation can be seen as a social innovation for Latin America, strengthening democracy in countries such as Chile, Mexico or Argentina, it might be interesting to check if a higher support for a democratic system has an impact on tax morale. Previous chapters in this dissertation have shown the relevance of political participation as an important factor to enhance tax morale. The two proxies used show that people with a higher pro democratic attitude have also a higher tax morale. Additionally, the chapter shows that pride, financial satisfaction, satisfaction, and happiness affect tax morale in a positive way.

The last chapter in the part TRUST AND INSTITUTIONS, “Tax Morale in Asian Countries”, continues on the framework of the two previous chapters. The difficulty in this paper is the fact that there are big differences among Asian countries. While in East Asia bureaucrats are seen as competent, independent and highly motivated, other Asian countries as, e.g., the Philippines are confronted with strong corruption tendencies in the tax administration. In some countries as, e.g., in China we observe a change of the fiscal system from a plan to a market system. Thus, it makes sense in a multivariate analysis to focus also on specific countries. Due to the different experiences and the availability of data covering different years we have chosen India and Japan for the case studies. The first part of the chapter treats taxation issues in Asia with special attention to the situation of India and Japan. The general situation in India indicates that there is room for tax administration reforms which might have a positive effect on tax compliance and tax morale. Das-Gupta et al. (1995) found that tax compliance declined over the period 1971-1990. The low fiscal decentralisation at the regional level induces difficulties for local governments to deliver adequate services. The 90s reforms have not successfully improved India’s tax administration (see Das-Gupta and Mookherjee 1995) as there is a widespread corruption at the Indian Income Tax Department and procedures impose high compliance costs on taxpayers. Furthermore, the

growing workload over the decades reduced the efficiency of audit mechanisms. Japan on the other hand offers a good example for a consequent strategy with the aim to intensify an interaction between tax administration and taxpayers based on trust. After the reorganisation in 1949, Japan had a high rate of tax delinquency (around 40 percent). A too fast implementation of the self-assessment system and high tax burdens frustrated Japanese taxpayers. Reforms to reduce the burden, to simplify the tax returns and improve taxpayers assistance helped to increase tax compliance. Tax administrators have been trained in well functioning programs. Furthermore, tax administrators obtain relatively high salaries which reduces a possible inclination to corruption. Much weight has been given to treating taxpayers fairly. The high degree of tax morale in Japan, presented in the second part of CHAPTER XII, might be influenced by an intensive interaction between the tax administration and the taxpayers based on trust.

As in previous chapters the empirical part starts with a descriptive analysis of the degree of tax morale in Asian countries over time. Stable and relatively high values are observed for Japan, China and India. On the other hand, South Korea's values change strongly, with the peak in the years 1990-1993. Compared to the other countries the Philippines have a very low tax morale. Such a low tax morale value goes in line with a big size of shadow economy. The diversity of the countries does not allow a clear comparison between them. To reduce this problem we build dummy variables for different cultures in a multivariate analysis where countries have been pooled. However, as many Asian countries have not been analysed in the WVS, clear and robust comparisons among different regions cannot be done. The regression results are comparable to the descriptive analysis. People from the Philippines have a significantly lower tax morale than those from other countries. The data shows that former British colonies have a higher tax morale than the other countries. This does not surprise as British colonies had a more limited government, greater political freedom and bureaucratic efficiency (see La Porta et al. 1999), structures that influenced the tax system. However, it should be noticed that the high value of Bangladesh and the low number of countries might produce biases regarding such a comparison. Thus, the results should be treated with caution. What about the trust variables? Not surprisingly trust in government and the legal system are statistically highly significant with a positive sign. Also in line with previous findings, (financial) satisfaction and happiness are positively correlated with tax morale.

The last part of CHAPTER XII conducts a cross-section time series analysis in two different Asian countries: India and Japan. In India, data from the years 1995/1996 and 1990

are available, in Japan for the years 1981, 1990 and 1995. To maximise the number of independent variables, the newest WVS wave with more variables is analysed, before pooling the different waves. In India the coefficient for the variables that measure trust in the government, national pride and a pro democratic attitude are significantly positive. As Japan had an intense interaction between tax officials and the taxpayers, the proxy satisfaction with officials has been used. Both variables report a significantly positive coefficient. Other factors such as pride and a pro democratic attitude are also positively correlated with tax morale, but the coefficient of the variable pride is not significant. In both countries we have controlled for individuals' religion. In India Hindus, who made up 77.4 percent of the total survey participants, had a significantly lower tax morale than Muslims, people with another religion or without a religion. In Japan, where a big number of survey participants (66.2%) do not belong to a religion denomination, Buddhists have a significantly higher tax morale than the people without a religion. Looking at the development over time, we observe in India a significant decay of tax morale between the years 1990 and 1995/1996, controlling for socio-demographic, socio-economic and attitudinal variables. In Japan there is also a negative tendency between the years 1981 and 1995, but the coefficients are not significant.

2. Social Norms

After the empirically oriented part focusing on TRUST AND INSTITUTIONS it make sense to start with a chapter (“To Evade Taxes or Not to Evade: That Is the Question”) that refreshes the analysis of social norms with a more theoretical part. CHAPTER XIII starts with showing that tax compliance literature was influenced by game theory. It helped to make explicit strategic aspects of social interactions, outlining, e.g., the range of choices available. Furthermore, the instrument of game theory helped to simplify the complexity of tax compliance, to analyse aspects of cooperation, and to think about the interaction between taxpayers themselves and the government/tax administration. Experiments have been strongly influenced by game theoretical aspects. In this dissertation we also integrate experimental designs with, for example, a public good character (see CHAPTER XVI, XVII). Thus, this chapter surveys public good structures in experiments to set the scene for the experimental work. However, the game theoretical approach had the deficit not to analyse aspects as procedural rules, social norms or communication. Experiments helped to analyse such factors. The chapter treats moral costs and social norms aspects which are going to be essential for

further chapters. One of the important aspects is to consider that subjects do not act as isolated individuals playing a “game against nature” and might not only be concerned with their welfare. The main focus is put on showing how researchers have implemented social norms in tax compliance models.

The last part of CHAPTER XIII bridges the following two chapters and the previous ones, which work with the World Values Survey. Canada has been taken into consideration as it offers a broad data set. Similar to other studies in this dissertation, the effects of trust in government, national pride and religiosity have been analysed. The pride variable is explained more extensively than in other chapters pointing out that pride produces a sense of group identification, influencing people’s behaviour in groups, organizations, and societies, and thus giving a basis for encouraging cooperative behaviour. The empirical evaluation indicates that all three variables have a positive impact on tax morale.

CHAPTER XIV “Does Culture Matter? Tax Morale in an East-West-German Comparison” provides a comparison of tax morale between inhabitants of East and West Germany after its post-reunification periods using World Values Survey data of 1990 and 1997. Such a comparison is interesting, due to the historical event of German reunification with the fall of the Berlin Wall on November 9th 1989. Eastern and western taxpayers grew up in a different social environment. German reunification allows to better isolate so-called cultural factors from other factors and is close to a natural experiment. Many factors can be controlled for because they are similar as, e.g., a common language, similar education systems and a shared cultural and political history prior to the separation after World War II. As a consequence, an East-West Germany comparison has a methodological advantage compared to cross-country studies. Thus, CHAPTER XIV helps to give important insights into the effects of social norms.

The chapter starts with the question whether there is a cultural difference between East and West Germany. Culture can be seen as a kind of language which is based on rule systems, as ideas, values, internal institutions as customs and conventions and external institutions. Thus, it can be argued that culture transmission mechanisms provide a means to solve the problem of cooperation, building a mechanism of conformism (see Heinrich et al. 1999). Social norms are learned through daily experience. An important aim of the GDR regime was the adherence to norms enforcing, e.g., trust in the authority. Ockenfels and Weimann (1999) report that there is the common belief that East Germans are more cooperative and less selfish than West Germans. Mummert and Schneider (2002) report a significantly lower share of black labor in East Germany than in West Germany. The Forschungsstelle für empirische

Sozioökonomik (1997) found that eastern taxpayers had a higher tax morale than western taxpayers. Compared to this study, the chapter uses bigger sample units for both regions and analyses tax morale as dependent variable with multivariate regressions, considering also the development over time. It can be argued that if norms are learned, a tax morale decrease in the East over time can be supposed. Furthermore, for older individuals who were exposed for a longer time to an environment where social norms adherence was important, a higher tax morale should be observed.

The descriptive part of this chapter shows that in 1990 and 1997 East Germans report a higher tax morale than West Germans. However, a decay over time is observed for East Germany. Wilcoxon rank-sum tests show that the differences between East and West are significant. However, as such a difference can be explained in terms of differences in socio-demographic and socio-economic factors, multiple regressions are conducted. Analysing both regions independently show a sizably different impact of the age profile on tax morale. While not significant in the West, it exerts a hugely significant influence in the East. To check if the significant difference persists the two data sets have been pooled adding a dummy variable. First the difference just after the reunification has been analysed. The results show that tax morale is significantly higher among eastern taxpayers. In a next step, CHAPTER XIV analyses whether the significant difference observed can also be found for the year 1997. The results indicate that the East-West difference has strongly diminished. In seven years around three quarters of the East-West differential disappeared. Thus, a strong convergence in the level of tax morale between the two populations can be observed. Finally, the tax morale development over time has been analysed in East and West Germany separately. In the East a significant decay of tax morale has been observed. On the other hand, there were no significant differences between 1990 and 1997 for West Germany. Thus, cultural background seems to have an effect on tax morale. However, it would be wrong to conclude that the Communist system always had a positive effect on tax morale. Tax morale in East Germany is quite high compared to other former communist countries. Other factors as liberty, freedom, or happiness are essential. A lower tax morale can express taxpayers' disagreement. Such a behaviour restricts government's possibilities to act as a Leviathan maximising its own preferences. Furthermore, there might be a bias in the analysis due to the transition process, which included high money transfers from the West to the East. Nevertheless, the findings indicate that it is fruitful to go beyond the standard economic model of tax compliance integrating the aspect of social norms.

Europe offers the possibility to extend the analysis of cultural difference as there is a great variety of culture influences between countries, but also within countries. Thus, CHAPTER XV with the title “Does Culture Influence Tax Morale? Evidence from Different European Countries” checks the effects of cultural differences on tax morale in specific countries with a certain culture variety. The chapter furthermore continues on the framework of studies by Weck (1983), Weck, Pommerehne and Frey (1984) and Frey and Weck-Hannemann (1984) who in the 80s had observed a higher tax immorality in Romanic countries. The World Values Survey gives the possibility to integrate 18 European countries into an empirical study using multiple regression analysis and building dummy variables for cultural differences. The results show a tendency to a higher tax morale for people from Northern Europe than for people from Southern Europe. In line with previous chapters factors as trust in the legal system, pride, and financial satisfaction have a significantly positive effect on tax morale.

In a second step, in CHAPTER XV specific countries with a certain cultural variety are analysed. The paper starts with Switzerland, a country with four languages and three main ethnic groups, German, French, Italian speaking individuals. The data from the year 1989 shows that being French rather than German speaking reduces the probability of stating that tax evasion is never justifiable, with coefficients on the border of significance. On the other hand Italian and Romansh speaking individuals show a tendency to a higher tax morale, but the coefficients are not significant. Contrary to the 1989 data set, the data of 1996 allow to integrate institutional variables as CHAPTER VII has shown. Without integrating institutional variables, the evaluation shows, similar to 1989, a significantly lower tax morale for French speaking compared to German speaking taxpayers. Italian speaking individuals show also a lower tax morale, but the coefficient is not significant. Including direct democracy, the significance and size of the marginal effects of the French speaking variable decrease.

The chapter continues to analyse Belgium for the year 1990, a country with two main regions (Flanders and Walloon) and three languages (Flemish, French and German). According to the territorial division, the dummy variables Flemish, Walloon (reference group) and German have been built. For Brussels a separate dummy variable has been built, as it is a bilingual area. The results show the tendency for Flemish people to have a higher tax morale than the Francophone inhabitants. On the other hand the coefficient of the German speaking variable and the variable Brussels are not significant. The Flemish movements for a greater cultural autonomy in the 50s and 60s induced reforms strengthening the local autonomy of the regions. However, tax rates are still set by the federal government. In general, a greater

regional autonomy would worsen off Wallonia as economic performance and fiscal capacity are lower compared to Flanders (see van Houten 1999).

Spain is also a nation with different historical nationalities. Thus, the chapter analyses Spain using dummy variables for the Basque Country, Navarre, Catalonia, and Galicia, regions with an own cultural identity. In Spain, we find the largest differences between regions. In 1990 the Basque Country and Catalonia had a lower tax morale than the reference group, contrary to Galicia that indicated a higher tax morale. In 1995 we find a different picture. There is a tendency that inhabitants of the Basque Country and of Navarre have a lower tax morale than people from the reference group. On the other hand, the coefficients for Galicia and Catalonia were not statistically significant, but show a negative, respectively positive sign. Such differences between 1990 and 1995 might be an indication of changes and expectations about regional autonomy movements in Spain. In times of rapid changes and adaptations culture also evolves faster than frequently assumed. More information has been found adding surveys from Andalusia, the Basque Country, Galicia, and Valencia. The findings indicated that Andalusia, Galicia, and Valencia, compared to the Basque Country, had the tendency to a higher tax morale, with the strongest effects in the first two regions. In general, the findings for Spain indicate that the Basque Country with a certain continuity has the lowest tax morale. This is not surprising as we find the strongest separatist tendency in this region. Tax morale might also be a signal to express the dissatisfaction with the actual situation. It might signalise how taxpayers evaluate local and national government's intention to consider their preferences.

After three chapters working with survey data, the subsequent two chapters use the instrument of experiments to get more insights into the effects of social norms on tax compliance and tax morale. CHAPTER XVI, "Equity and Tax Compliance: Experimental Evidence", presents the findings of an experiment over 12 rounds which combines the tax payment process with a sort of public good game, varying the transfer amount obtained from the government. The consumer surplus derived from government's provision of the public good was changed by varying the group's surplus multiplier. To clarify this point, all taxes paid by the subjects were multiplied by a specific factor (surplus multiplier) and then redistributed in equal shares to the members of the group, independently of how much taxes someone has paid. The idea in this experiment is to vary this surplus multiplier (0, 1, 1.5 and 2), which helps to analyse the recognition of government services. A surplus multiplier has also the effect that moral constraints are introduced as taxpayers could dislike the idea that others suffer of tax evasion as the total yield decays, which leaves less money for

redistribution. Thus, the higher the coefficient, the higher the moral costs of behaving dishonestly. However, as people in the experiment could observe the redistributed amount, a reverse effect could be induced. If the redistribution sum decreases, individuals notice that many individuals evade taxes which could crowd out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic. This feeling and reaction could increase with the surplus multiplier. Therefore, the net tax compliance effect is not clear. The experiment paid attention to use deterrence parameters which are comparable to reality. Furthermore, the income distribution has been endowed endogenously depending on a previous test which divided the individuals into two income classes, and subjects' risk attitudes have been controlled for. Such factors have often been neglected in previous studies. It is novel in the tax compliance literature to conduct the empirical evaluation with the analysis of longitudinal data on the occurrence of events. As event we have defined subjects' optimal one period strategy, maximising the expected value from the choice of how much income to report. Inserting all experimental parameters shows that for all groups it is rational to fully evade taxes. Thus, declaring no income has been defined as event. Based on this definition, tax honesty curves have been developed, expressing the probability that an individual remains in the state of not evading the full taxes until time t . The results indicate that the fraction of people with a lower income remaining honest during the 12 rounds is lower than for high income individuals. Furthermore, females are also more honest than males.

However, to investigate the relationships among different variables, a multivariate analysis has been conducted working with discrete logit and Cox models. Low income taxpayers are more likely to undertake full tax evasion compared to high income taxpayers. As the tax rate has been held constant, it can be concluded that equal tax rates for different income groups is a strategy to increase the honesty of high income taxpayers compared to low income taxpayers. However, the total effect on the collected tax sum also depends on how far low income taxpayers crowd out their tax morale.

The effect of the surplus multiplier is not so clear. Generally, the tendency is that positive actions (integrating the surplus multiplier) are intended to increase taxpayers' positive attitudes, their commitment to the tax-payment and thus compliant behaviour. However, it seems that the net effect depends on taxpayers' positive or negative behaviour within the group. Moral costs are reduced if people see that other group members also evade taxes. As a consequence tax morale is crowded out and tax evasion is seen as a mechanism to restore equity.

CHAPTER XVII, “Cross Culture Comparison of Tax Morale and Tax Compliance: Evidence from Costa Rica and Switzerland”, intensifies the analysis regarding the experimental design, the empirical estimation methods, and compares survey findings with experimental evidence, including with Costa Rica and Switzerland two countries in two different continents with different tax cultures into the analysis. The analysis of the influence internal and external norms on tax morale and tax compliance is the central point of this paper. Furthermore, CHAPTER XVII checks with experimental methods if there is a significant difference in the degree of tax compliance between Costa Rica and Switzerland. Experiments are a good instrument for a cross-culture comparison as many factors are held constant and thus allow to isolate possible cultural differences.

To understand differences in tax compliance and tax morale across cultures the chapter starts with a short overview of general taxation issues to understand possible institutional and cultural differences. After comparing the degree of tax morale in Costa Rica and Switzerland with other countries in the same area, multiple regressions in both countries are conducted. With the data set Latinobarómetro for Costa Rica empirical evidence has been found that internal social norms, measured as the perceptions of other taxpayers’ law obedience and information about other taxpayers’ behaviour regarding tax avoidance, have a positive effect on tax morale. The empirical findings indicate a positive correlation in the first case and a negative one in the second. On the other hand, we analysed whether external social norms, measured as trust in the government and the legal system, have positive effects on tax morale in Switzerland. Both variables showed a robust positive correlation. Thus, the survey findings indicate the relevance of social norms for tax morale in two different cultural settings. We observed a higher tax morale in Costa Rica than in Switzerland. However, it should be noticed that comparisons are not free of biases as the question to measure tax morale was not identical.

To better compare the differences between both countries we turned to the use of experimental methods to control extraneous influences, holding tax reporting institutions constant. The results show a significantly higher tax compliance in Costa Rica than in Switzerland. The experimental design was similar to the one in CHAPTER XVI. However, instead of 12, 25 rounds have been conducted, giving individuals the possibility to vote on the total amount of tax penalty and after tax, after discussing this issue with other group members. Furthermore, small changes in the group’s surplus multiplier have been made (0, 1, 2, and 3). The data evaluation still puts into account the time factor, using random-effects Tobit estimations. The results show that voting on tax enforcement issues had a significant positive

effect on tax compliance. Building interaction terms showed that the positive effect of voting on tax compliance depends on the degree of fiscal exchange/benefits individuals obtained from the “government”. Interestingly, coercion had not the positive effect on tax compliance a traditional economics-of-crime approach would predict. There is even a negative correlation between coercion and tax compliance.

A post-experiment questionnaire helps to analyse whether there is a correlation between the degree of tax morale and the degree of tax compliance. Using different measurements of tax morale in individual country estimations and in the pooled estimations, we find that a higher tax morale is correlated with a higher tax compliance in the experiment. This result corresponds to the findings in previous chapters in this dissertation.

CHAPTER XVIII, “Preaching Matters: Tax Morale and Religiosity”, asks the following question: Are religious people more likely to be tax compliant? Starting point is a theoretical part where the link between religiosity and tax morale/compliance has been developed. Religiosity might act as a kind of internal moral enforcement mechanism that prevents individuals from behaving in a certain way. Religiosity settles habits of thoughts and might inhibit illegal behaviour, acting as a sanctioning system that legitimizes and reinforces social values (see, e.g., Hirschi and Stark 1969). Therefore, it restricts the possibility set of individuals. Bringing religiosity into the analysis introduces agents other than the state who threaten violators (see Grasmick et al. 1991). Empirical studies report that states and countries with higher rates of religious memberships have significantly lower violent and non-violent crime (see, e.g., Hull 2000, Hull and Bold 1989, Lipford, McCormick and Tollison 1993).

Arguing that religion encourages moral commitments and internal enforcement of social norms, the chapter investigates empirically the link between religiosity and tax morale/compliance. This is interesting and relevant as to the author’s knowledge there are only two papers which examine the effects of religiosity on tax morale (Tittle 1980, Grasmick et al. 1991). The first empirical test in CHAPTER XVIII is a simple bivariate analysis of cross-country data of more than 40 countries, done with the World Values Survey. It checks the correlation between having a confession and tax immorality and not being religious and tax immorality. Among many countries there is a significant negative correlation between confession and tax immorality and a positive one between not being religious and tax immorality. In the second part of the empirical study a multivariate analysis of individuals in the U.S., West Germany, Canada, and Great Britain has been done. As religiosity variable the frequency of church attendance has been used. Such a variable has the advantage that it measures the approximation of how much time individuals devote to religion. In line with the

descriptive part a second variable measures whether a person is religious. In some equations religious affiliations have been included. In all countries a higher church attendance and a higher religiosity significantly increase tax morale. On the other hand, the confession variables are not significant in all countries. This may indicate that it is not confession that increases tax morale and acts as a behavioural constraint possibly inhibiting illegal behaviour, but religiosity.

Thus, this chapter closes the set of Part Two showing in line with the preceding chapters the relevance of incorporating non-economic factors into the analysis of tax compliance.

3. Part Three: Tax Policy Strategies

In the last part of this dissertation we are going to focus on tax policy strategies. The government has a variety of strategies to pursue an increase of tax morale and tax compliance. Recognizing the importance of institutions and social norms raises the questions what alternative policies beyond deterrence strategies might have an effect on tax morale and tax compliance. Such strategies are interesting as an increase in the deterrence parameters is connected to higher government expenditures. However, enforcement is costly and it is not possible to reach complete compliance. Slemrod (1992) states:

“From the tax collection standpoint, it is extraordinarily expensive to arrange an enforcement regime so that, from a strict cost-benefit calculus, noncompliance does not appear attractive to many citizens. It follows that methods that reinforce and encourage taxpayer’s devotion to their responsibilities as citizens play an important role in the tax collection process (p. 7)”.

An increased enforcement of the tax system might produce disincentive effects comparable higher tax rates and bases (see also Slemrod 1992). Frey (1997) stresses that increasing monitoring and penalties might damage the intrinsic motivation to pay taxes.

As we have seen a self-interest model does not fully account for the degree of compliance. In line with the whole dissertation, this part follows a perspective that goes beyond analysing deterring policies only, moving towards strategies based on “positive encouragement”. Thus, we are going to analyse in Part Three to which extent it is helpful to give a “carrot for compliance” instead of a “stick for noncompliance”. As there is a lack of empirical evidence about the effects of alternative policy strategies, all four chapters present

empirical and experimental evidence which help to get a better picture of the possibilities and limitations of a such strategies.

CHAPTER XIX titled “Moral Suasion: An Alternative Tax Policy Strategy? Evidence from a Controlled Field Experiment in Switzerland” starts with analysing the effects of moral suasion on the timely paying and filling out of the tax form and the honesty regarding the declaration of domestic income from capital gains, lottery winnings, and certain insurance benefits. In cooperation with a local tax administration in Switzerland a controlled field experiment with taxpayers has been done. It allows to analyse taxpayers in their natural situation of filling out the tax form or paying their taxes. Similar to other chapters, this contribution starts with theoretical considerations about the effects of moral suasion on tax compliance and surveys the literature on that topic. Moral appeals might frame tax compliance as a positive act (see Hasseldine 2000). However, the efficiency of moral suasion might depend on the circumstance (e.g., works better in emergency situations, see Baumol and Oates 1979 and De Alessi 1975). Furthermore, it is unclear whether moral suasion significantly influences the behaviour over time.

There is hardly any empirical evidence about individuals’ compliance behaviour regarding moral suasion. The empirical evaluation in this chapter tries to overcome these shortfalls, analysing the factors timely filling out of the tax form and paying individual taxes on time as dependent variables and searching for factors that influence those variables. Contrary to a previous controlled experiment done by Blumenthal et al. (2001), which found little to no evidence of a positive effect of normative appeals on tax compliance, we chose to cooperate with a *local* tax administration, because moral suasion efforts might be more effective at this lower level. After introducing the design of the field experiment results are presented. The descriptive analysis shows with an independent-samples t-test that the treatment group (with moral suasion) is significantly more compliant than the reference group regarding the timely paying of the taxes, but not regarding the timely filling out of the tax form. However, to get a better picture of the effects of moral suasion, a comparison between different years has been done. Only for the first variable we observe a relatively strong increase in compliance between the years 2000 and 2001, which may indicate a moral suasion effect. In a further step we checked if moral suasion is successful, controlling for many variables in a multivariate analysis integrating socio-demographic, socio-economic and tax filling variables into the estimations. In general, the coefficients of the variable moral suasion indicated a positive correlation without being significant in most estimations. Furthermore, with honesty regarding the declaration of domestic income from capital gains, lottery

winnings and certain insurance benefits as a dependent variable, no significant difference between the treatment and control group has been observed. Thus, our results are in line with previous findings indicating that moral suasion has hardly any effect on taxpayers' compliance behaviour. The strongest effect can be observed for the variable which measures the timely paying of the taxes.

CHAPTER XX puts into account that numerous compliance strategies are available for a government to increase tax compliance. It was the intention to conduct an experiment with "real taxpayers" including incentive structures in form of real and not fictive money. We had two reasons to conduct the experiment in Latin America: 1) evidence from Latin America is hardly available, 2) as the experiment was conducted with real taxpayers and not students, the costs of the incentive payments is lower there than in, e.g., Switzerland. Thus, this paper contributes to the tax compliance literature as tax compliance experiments mostly work with students, a point often criticised by non-experimentalists. The 37 subjects in our experiment are volunteers from Arenal, a small village in Costa Rica. All subjects participated for the first time in an experiment. Costa Rica is a well suited country to conduct experiments as compared to other Latin American countries the average level of education is very high. This allows to reduce possible biases due to misunderstandings regarding the experimental design. To reduce artificiality, the income assignment has been done with real money. Three different policy strategies have been integrated into the design comparing them with a control group: 1) state's efficiency, designed in line with previous experiments (surplus multiplier factor 2), 2) moral suasion based on a short statement stressing the relevance of behaving honestly, 3) positive reward strategy, were people who have been audited and found to be fully honest received a certain reward.

Before presenting the results, the chapter first models the incentive structure of the different policy strategies including also the control group. The descriptive analysis shows that the control group has the lowest tax compliance (57.5%). The highest tax compliance rate can be found in the positive reward session (100%) followed by the moral suasion (90.0%) and the fiscal exchange treatment (85.0%). Based on these treatment designs and taking into account the small number of observations, as well as the fact that the experiment was of one round only, a robust rank-order tests have been done to check whether there is a significant difference between the treatment groups and the control group regarding the tax compliance rate. A strong significant effect can be found for the positive reward treatment. The moral suasion policy is on the border of significance and for the fiscal exchange policy no

significant effect can be found. However, also a robust rank-order test should be treated with caution as the number of observations in each group is relatively small.

In general it can be argued that these alternative policy strategies cannot be neglected. The most convincing result is that giving individuals a reward for compliance might be an important strategy to induce compliance.

The next two chapters analyse an additional strategy a government may pursue. Governments can implement a tax amnesty, where taxpayers get the opportunity to pay previously unpaid taxes without being subject to penalties. The analysis of tax amnesties is especially interesting as in many countries thinking about a (new) tax amnesty is currently in vogue. Nevertheless, there is little empirical evidence on that issue.

CHAPTER XXI, “Tax Amnesty and Political Participation: Evidence from Switzerland”, analyses in a laboratory experiment the acceptance of tax amnesties and the effects of having the possibility to vote on a tax amnesty. The chapter also offers a survey on tax amnesties around the world. It can be observed that the financial success, measured as the collection rate as a percentage of tax revenues, varies strongly among the countries. Some amnesties have been very successful, others not at all. However, as case studies and comparisons of tax amnesties between countries are fraught with difficulties, based on huge cultural and institutional differences, the chapter surveys data on amnesties from the United States for the years 1982-2002. Similarly, there is a strong variation of the repatriated revenues among the states. Furthermore, in line with observations from other countries there is the tendency that an increase in the number of tax amnesties has a negative effect on the efficiency of a tax amnesty.

As the experiment has been done in Switzerland, a more detailed survey on tax amnesties in Switzerland is presented in CHAPTER XXI. The first cantonal tax amnesty was enacted in 1917 in Zurich. From 1944 until 1966 in 14 states 16 cantonal amnesties were implemented. Interestingly, a proposal at the federal level did not pass the popular referendum in 1964. Four years later, a modified proposal that also fully waived taxes but in contrast left the tax auditing procedures unchanged was accepted (see Pommerehne and Zweifel 1991). In line with previous findings a great variation in the collection amount was observed between the countries.

In a further step, the chapter presents theoretical considerations about the effects of a tax amnesty and gives an overview of previous empirical studies, establishing the tie to the experimental part which develops the main hypothesis of this study. Novel in the experimental setting is the analysis of the relationship between tax compliance and subjects’

opportunity to vote for or against an amnesty. Experiments help to analyse longitudinal effects and check which factors enforce tax compliance. The novel framework in our analysis for the tax compliance literature is to combine a tax amnesty experiment with voting possibilities. The results provide strong evidence that individuals are more compliant when they are given the opportunity to vote. The strongest effect can be achieved if the voting procedure is coupled with communication among group members prior to the vote. Although both groups in which voting procedures have been introduced rejected tax amnesty, the compliance behavior has significantly improved with this strategy. Thus, the findings indicate that the way subjects are treated has an impact on the intrinsic motivation to pay taxes. Offering citizens participation rights might be an important alternative instrument for enhancing societies' social capital, creating an environment where citizens are trusted. This corresponds to the findings presented in the previous chapters.

In line with the findings of Alm, McKee and Beck (1990) the chapter reports that amnesties appear to be more effective in generating tax compliance in combination with an increase in the enforcement parameters than an amnesty without changes in the enforcement factors. An increase in the enforcement regime might control the crowding out of intrinsic motivation for those subjects who were honest in the pre-amnesty period, indicating that the state is willing to find solutions to the tax evasion problem.

The last chapter of the dissertation, "Is Forgiveness Divine? A Cross-Culture Comparison of Tax Amnesties", intensifies the work done in CHAPTER XXI. The previous chapter has shown that tax compliance rises significantly after people have had the possibility to vote for or against a tax amnesty. In Switzerland, all groups refused to implement a tax amnesty. Thus, it can be asked what would happen if people agreed to such an amnesty. Can we also observe an increase in tax compliance? If a voting procedure induces a kind of civic duty, as taxpayers become aware of the importance of contributing to the provision of public goods, we would predict that this result must be robust independently of whether an amnesty is accepted or not. We have done the same experiment in Costa Rica. Thus, this chapter checks the robustness of the results obtained from Switzerland.

CHAPTER XXII starts with an overview on the pros and cons of a tax amnesty and the previous empirical studies. In general they allow to check to which extent tax amnesties are accepted among individuals with a different cultural background and how individuals react to different tax amnesty strategies. As the experiment has exactly the same structure in both countries, we have the possibility to pool the data in order to analyse cultural differences affecting the degree of tax compliance. The chapter is insofar interesting as Costa Rica is now

conducting a tax reform incorporating a tax amnesty and Switzerland is planning to conduct an amnesty.

Compared to CHAPTER XXI a further hypothesis is going to be tested. It can be supposed that the anticipation of future tax amnesties reduces tax compliance. An anticipation of a further amnesty increases if individuals get the opportunity to participate in an amnesty although the government had stressed that no amnesty was going to take place. The government loses credibility and makes evasion seem forgivable. Thus, taxpayers get the incentive to wait for further grace periods to be reconsidered freely. Especially honest taxpayers feel treated unjustly when others have the opportunity of a tax amnesty more than once, which crowds out the intrinsic motivation to comply with tax laws.

Interestingly, in Costa Rica all groups accepted the tax amnesty. The results suggest that tax compliance increases significantly when people have the opportunity to vote on a tax amnesty. In line with Switzerland, the pooled estimation shows that the strongest effect can be achieved when the voting procedure is coupled with pre-voting discussion. Thus, these results are robust across the two different cultures. Giving subjects a higher opportunity set has a positive impact on the intrinsic motivation to pay taxes.

Furthermore, the chapter reports that multiple tax amnesties in a short interval reduce the efficiency of such a program. Thus the results indicate that tax amnesty programs should be used as a “once-per-generation” opportunity to increase tax compliance and to avoid negative compliance effects.

Interestingly, CHAPTER XXII indicates in line with CHAPTER XVII that tax compliance is significantly higher in Costa Rica than in Switzerland. As these experiments generate data from different countries under the same settings, controlling extraneous influences as the tax agency (enforcement effort, tax rate, income level), differences arise from different social norms or social institutions. The payments given to the subjects having been adapted to the economic situation in the country (individuals in Costa Rica have received lower payments), the differences in the degree of compliance should not be caused by differences related to the experimental payments. Hence, the effects of a tax amnesty tend to depend on the degree of internal and external social norms in a country. It is therefore not surprising that in general great variances regarding the success of an amnesty are observed in different countries around the world.

IV. WHAT SHAPES TAX MORALE: A SUMMARY

As many chapters in this dissertation present empirical and experimental evidence, it helps to give an overview on the different variables that have been analysed as independent factors. It should be noticed that not all variables are going to be summarised. Looking at the marital and the employment status only specific variables have been selected (married, self-employed, unemployed) comparing them with the reference group. As the overview has only focused on the main variables, this summary gives also insights into the effects of socio-demographic and socio-economic variables. To get a robust picture of correlations between those variables and tax morale we present in this section a couple of tables with the findings for each variable.

We will see that some variables do not appear in all estimations. Many missing values, not having been collected in specific countries or having been differently coded, mainly account for the variation in the number of variables. However, this dissertation has tried as far as possible to use similar estimations for different countries. As in each country/region more than one estimation has been done, the tables presented in the following subsections will show tendencies. But in the cases where the coefficients were significant, the results remain mostly stable over a variety of estimations.

We start with socio-demographic and socio-economic variables as they have not been treated in the previous section. After that we present the evidence of our main variables. Having a general picture of results from different countries allows to better develop policy strategies to enhance tax morale and tax compliance.

1. Socio-Demographic and Socio-Economic Variables

Socio-demographic variables appear to be important determinants of behaviour. However, as many empirical findings are based on the Taxpayer Compliance Measurement Program (TCMP), relatively little empirical evidence is available. With different methodological instruments (survey and (field) experiments) we can capture to which extent there are clear tendencies.

1. Age, Gender, and Education

We first start with the variables age, gender, and education (*Table 1 to 3*). Instead of using age as a continuous variable, most of the survey estimations have formed four classes: 16-29, 30-49, 50-64, 65+, with 16-29 as reference group. *Table 1 to 3* indicate the sign of the coefficient values of the different groups compared to the reference group and whether the effect is statistically significant. In some studies, mostly experiments, age has been coded as continuous variable. Similarly, gender has been coded as dummy variable (being male in the reference group).

Most theories regarding the effects of socio-demographic factors on compliance have been developed by social psychologists. Tittle (1980) argues that older people are more sensitive to the threats of sanctions and over the years have acquired greater social stakes, as material goods, statuses, and a stronger dependency on the reactions from others, so that the potential costs of sanction increase. The results in *Table 1 to 3* show a clear picture of the effect of the age variables. In most estimations a higher age is significantly correlated with a higher tax morale or tax compliance.

Similarly, social psychological research suggests that females are more compliant and less self-reliant than males (e.g., Tittle 1980). However, if social psychology argues that the difference is based on the traditional female role, today's female generation, which is more independent, would have a lower tax morale or tax compliance. Another possibility could be that females are more risk averse than males. It is interesting to look at the results in this dissertation as different cultural regions have been analysed. The results reported in *Table 1 to 3* show that females report in many cases a significantly higher tax morale and tax compliance than males. No difference between developing and developed countries can be observed, which invalidates the argument of the female position in a society having an effect on tax morale.

Table 1

The Effects of Age, Gender and Education on Tax Morale and Tax Compliance in Europe

Dependent Variables: Tax Compliance and Tax Morale Countries	Sign and Significance of the Coefficient					
	Age (dummies compared to age 16-29)			Age	Gender	Education
	AGE 30-49	AGE 50-64	AGE 65+		FEMALE	
COUNTRIES POOLED						
Europe 1989-1990 (WVS)	+	+	+		+	
SPECIFIC COUNTRIES						
<i>Switzerland</i>						
1989 (WVS)	+	+	+		+	(-)
1996 (WVS)	(+)	+	(+)		+	(+)
1999 (ISSP)	(±)	(±)	(±)		(±)	+
Experiment (CHAPTER XVI)				+	(+)	
Experiment (CHAPTER XVII)				-	+	+
Experiment (CHAPTER XXI)				+	+	
Field Experiment (CHAPTER XIX)	(+)	(+)	+		+/(-)*	
<i>Germany</i>						
West Germany 1997 (WVS)	(-)	(+)	(+)		(+)	-
East Germany 1997 (WVS)	+	+	+		(+)	-
W. Germany 90 and 97 (pooled)	(-)	+	+		+	
E. Germany 90 and 97 (pooled)	+	+	+		+	
<i>Spain</i>						
1990 (WVS)	+	+	+		(+)	+
1995 (WVS)	(-)	(±)	(±)		+	(-)
<i>Belgium</i>						
1990 (WVS)	+	+	+		+	(±)
<i>Great Britain</i>						
1990 (WVS)	(+)	+	+		(+)	(±)

Notes: In the surveys the dependent variable is tax morale, in the experiments tax compliance. Gender: reference group MALE. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant. * Females have a higher compliance regarding timely paying the taxes than couples, on the other hand regarding the timely filling out there is a lower compliance, but without being significant.

Education is related to taxpayer's knowledge about the tax law. Better educated taxpayers are supposed to know more about tax law and fiscal connections, they are better aware of the benefits and services the state provides for the citizens from the revenues and thus would be in a better position to assess the degree of compliance (see Lewis 1982). On the other hand, highly educated taxpayers should also be more aware of possible governments wastes.

Furthermore, they may be less compliant because they better understand the opportunities for evasion and avoidance and might be more critical about and better aware of how the state uses tax revenues. However, this argumentation might be less relevant for the degree of tax morale. Based on these different argumentations, it is interesting to check empirically the effects of education on tax morale and tax compliance. Not surprisingly, the results show an ambivalent picture. In many estimations the effects of education on tax morale/tax compliance are not statistically significant. In the estimations where the coefficient indicates a significant influence the signs are also mixed. These results might indicate that the current politico-economic situation (government spending, the input-output relation between paid taxes and obtained benefits) influences the education variable.

Table 2

The Effects of Age, Gender and Education on Tax Morale and Tax Compliance in North and Latin America

Dependent Variables: Tax Compliance and Tax Morale	Sign and Significance of the Coefficient					
	Age (dummies compared to age 16-29)			Age	Gender	Education
Countries	AGE 30-49	AGE 50-64	AGE 65+		FEMALE	
COUNTRIES POOLED						
Latin America (WVS 1995-1997)	+	+	+		+	(-)
Latin America (Latinobarómetro 1998)	+	+	+		(+)	(+)
SPECIFIC COUNTRIES						
<i>USA</i>						
1995 (WVS)	(+)	(+)	(+)		+	(+)
1987 (Taxpayer Opinion Survey)				+	(±)	-
<i>Canada</i>						
1990 (WVS)	+	+	(+)		+	(+)
<i>Costa Rica</i>						
1998 (Latinobarómetro)	(+)	(+)	+		(±)	
Experiment (CHAPTER XVII)*				+	+	+
Experiment (CHAPTER XX)				(+)	+	+

Notes: In the surveys the dependent variable is tax morale, in the experiments tax compliance. Gender: reference group MALE. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant. * only descriptive statistics.

Table 3

The Effects of Age, Gender and Education on Tax Morale and Tax Compliance in Transition and Asian Countries

Dependent Variable: Tax Morale	Sign and Significance of the Coefficient				
	Age (dummies compared to age 16-29)			Gender	Education
Countries	AGE 30-49	AGE 50-64	AGE 65+	FEMALE	
COUNTRIES POOLED					
Transition Countries (WVS 1989-1993)	+	+	+	+	
Transition Countries (WVS 1995-1998)	+	+	+	+	
Asia (WVS 1995-1997)	+	+	+	(+)	+
SPECIFIC COUNTRIES					
TRANSITION COUNTRIES					
<i>Former Soviet Union Countries</i>					
Russia 1991 and 1995 (pooled)	+	+	+	(±)	
Estonia 1990 and 1996 (pooled)	+	+	+	+	
Latvia 1990 and 1996 (pooled)	+	+	+	+	
Lithuania 1990 and 1996 (pooled)	+	+	+	+	
Belarus 1990 and 1996 (pooled)	+	+	+	(-)	
<i>Central/Eastern Europe</i>					
Poland 1989 and 1997 (pooled)	+	+	+	+	+
Bulgaria 1990 and 1997 (pooled)	+	+	+	(+)	
Slovenia 1992 and 1995 (pooled)	+	+	+	+	
ASIA					
<i>India</i>					
1995/1996	+	+	(+)	(+)	(+)
1990 and 1995/1996 (pooled)	+	+	-	+	+
<i>Japan</i>					
1995	+	+	(+)	(±)	
1981, 1990 and 1995 (pooled)	+	+	+	+	

Notes: Dependent variable: tax morale. Gender: reference group MALE. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant.

2. Marital Status, Employment, Economic Situation and Religiosity

Marital status might influence legal or illegal behaviour depending on the extent to which individuals are constrained by their social networks (see Tittle 1980). Such a constraint might have an impact on tax morale. On the other hand, it should be noticed that this variable might

interact with the tax system. Differences in the degree of tax morale might be based on different tax treatments of married and non-married people. However, evidence from Switzerland and the United States shows a tendency for married people to have a higher tax morale than singles which would not be in line with this argumentation. Such a tendency can be observed among different cultural settings, especially regarding the significant coefficient values.

Regarding the occupation status special attention has been paid to the question whether self-employed taxpayers have a lower tax morale than full-time employees. *Tables 4 to 6* present the findings. In many equations the coefficient is not significant. However, it is interesting to notice that in the transition countries (see also East Germany) the coefficient is mostly significant with a negative sign. In these countries self-employed individuals might feel the financial restriction much more, as the compliance costs and taxes become more visible. The rapid collapse of institutional structures produced a vacuum in many countries, followed by large social costs, especially in terms of worsening income inequality and poverty rates and bad institutional conditions, based on uncertainty and high transaction costs.

The effects of income on tax morale are difficult to assess theoretically. Depending on risk preferences and the progression of the income tax schedules, income may increase or reduce tax morale. Looking at tax evasion it can be argued that in countries with a progressive income tax rate, taxpayers with a higher income realise a higher dollar return by evading, but with possibly less economic utility. On the other hand, lower income taxpayers might have lower society “stakes” or restrictions but are less in the position to take these risks, because of a high marginal utility loss (wealth reduction) if they are caught and penalised (Jackson and Milliron 1986). Thus, it does not surprise that the empirical findings show a mixed picture. Looking at the statistically significant coefficient, there is the tendency that a higher income leads to a lower tax morale. The positive results obtained in the experiments cannot be compared to the surveys, as not individual income has been integrated into the estimations, but the assigned income during the experiments.

Finally, *Table 4 to 6* presents evidence regarding the variable religiosity, measured as church attendance and the degree of religiosity. As the previous section has already introduced the variable (see CHAPTER XVIII), we directly proceed to the empirical findings. The results suggest a positive correlation between religiosity and tax morale.

Table 4

The Effects of Marital and Employment Status, Economic Situation and Religiosity on Tax Morale
and Tax Compliance in Europe

Dependent Variables: Tax Compliance and Tax Morale	Sign and Significance of the Coefficients					
	Marital Status	Employm.	Economic Situation		Religiosity	
Countries	MARRIED	SELF-EMPL.	INCOME	F. SATISF.	CHURCH ATT.	RELIGIOUS
COUNTRIES POOLED						
Europe 1989-1990 (WVS)	+	-	-	+	+	
SPECIFIC COUNTRIES						
<i>Switzerland</i>						
1989 (WVS)	(±)	(-)	-	(+)	+	
1996 (WVS)	+	(+)	(+)	+	+	
1999 (ISSP)	(±)*		(+)		+	
Experiment (CHAPTER XVI)			+			(+)
Experiment (CHAPTER XVII)	+		(-)			(+)
Experiment (CHAPTER XXI)				+	+	
Field Experiment (CHAPTER XIX)	-	(+)	(+)			
<i>Germany</i>						
West Germany 1997 (WVS)	+	(-)	-	+	+	+
East Germany 1997 (WVS)	(+)	-	(-)			
W. Germany 90 and 97 (pooled)	+	(+)	-			
E. Germany 90 and 97 (pooled)	(+)	(-)	-			
<i>Spain</i>						
1990 (WVS)	+	-	-	+	+	
1995 (WVS)	(+)	(+)	(+)		(+)	
<i>Belgium</i>						
1990 (WVS)	+	-		+	+	
<i>Great Britain</i>						
1990 (WVS)	(+)	(-)	(+)	+	+	+

Notes: In the surveys the dependent variable is tax morale, in the experiments tax compliance. Marital status: reference group SINGLE, employment status: FULL TIME EMPLOYED. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant. *married and people living together are in one class.

Table 5

The Effects of Marital and Employment Status, Economic Situation and Religiosity on Tax Morale
and Tax Compliance in North and Latin America

Dependent Variables: Tax Compliance and Tax Morale Countries	Sign and Significance of the Coefficients					
	Marital Status MARRIED	Employment SELF-EMPL.	Economic Situation INCOME F. SATISF.		Religiosity CHURCH ATT. RELIGIOUS	
COUNTRIES POOLED						
Latin America (WVS 1995-1997)	+	(+)	+	+		+
Latin America (Latinobarómetro 1998)	+*	(+)	(±)			
SPECIFIC COUNTRIES						
<i>USA</i>						
1995 (WVS)	+	(+)	-	+	+	+
1987 (Taxpayer Opinion Survey)	(-)		(-)			
<i>Canada</i>						
1990 (WVS)	+	(±)	-	+	+	+
<i>Costa Rica</i>						
1998 (Latinobarómetro)	(-)*	(+)	-			+
Experiment (CHAPTER XVII)			+			+
Experiment (CHAPTER XX)**	+		-			+

Notes: In the surveys the dependent variable is tax morale, in the experiments tax compliance. Marital status: reference group SINGLE, employment status: FULL TIME EMPLOYED. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant. *married and people living together are in one class.** only descriptive statistics.

Table 6

The Effects of Marital and Employment Status, Economic Situation and Religiosity on Tax Morale in Transition and Asian Countries

Dependent Variable: Tax Morale	Sign and Significance of the Coefficients				
	Marital Status	Employm.	Economic Situation	Religiosity	
Countries	MARRIED	SELF-EMPL.	INCOME	F. SATISF.	CHURCH ATT. RELIGIOUS
COUNTRIES POOLED					
Transition Countries (WVS 1989-1993)	+	-		+	
Transition Countries (WVS 1995-1998)	+	-		(+)	
Asia (WVS 1995-1997)	+	-		+	
SPECIFIC COUNTRIES					
TRANSITION COUNTRIES					
<i>Former Soviet Union Countries</i>					
Russia 1991 and 1995 (pooled)	(+)	-			
Estonia 1990 and 1996 (pooled)	(±)	-			
Latvia 1990 and 1996 (pooled)	(+)	-			
Lithuania 1990 and 1996 (pooled)	(+)	-			
Belarus 1990 and 1996 (pooled)	+	-			
<i>Central/Eastern Europe</i>					
Poland 1989 and 1997 (pooled)	(±)				
Bulgaria 1990 and 1997 (pooled)	(+)	(-)			
Slovenia 1992 and 1995 (pooled)	(+)	-			
ASIA					
<i>India</i>					
1995/1996	(+)	(-)	-		
1990 and 1995/1996 (pooled)	(+)	-	-		
<i>Japan</i>					
1995	-	-	(+)		_*
1981, 1990 and 1995 (pooled)	+	-	-	+	+**

Notes: Dependent variable: tax morale. Marital status: reference group SINGLE, employment status: FULL TIME EMPLOYED. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant. * Hindu compared to people without a religion denomination. **Buddhist compared to people without a religion denomination

2. Trust and National Pride

The results of the trust variable imply a clear tax policy strategy: induce trust at the constitutional level as well as at the current politico-economic level. In all the different

cultural settings such a strategy has a positive effect on tax morale. If taxpayers trust the government, the court and the legal system, and the tax administration, taxpayers are more willing to pay taxes. Therefore, these actors have all to act trustworthily. The results show that the relationship between them and the taxpayers (relational contract) can be maintained by positive actions, well functioning institutions, implementing a positive social capital atmosphere. Such a strategy will be honoured with a higher tax morale. In the light of the current politico-economic process these findings are interesting and relevant. According to Frey (2003) it is possible that the European Union will levy its own taxes in the future. This would mean “*new and additional taxes*” (p. 20). It is questionable whether a deterrence strategy would help to maintain tax compliance under these circumstances. It even might enforce the disincentive effects of additional taxes. Thus, building trust might be an alternative strategy to guarantee that tax morale is not crowded out. Furthermore, as our results show that trust plays an essential role in transition countries to increase tax morale, the EU enlargement should be steered considering the effects of trust on tax morale. Taking also the results for Latin America into consideration, we can argue that the observed tax reform efforts in the present should not forget to enhance the relational contract between taxpayers and the government. It seems that this component has been neglected in various reform efforts.

Table 7 to 9 show also the empirical evidence of a further variable: national pride. Taking into account that this variable, to the author’s knowledge, has been completely neglected in the tax compliance literature, the evidence shows that more attention should be paid to the effects of pride on tax morale and tax compliance. In almost all estimations a higher pride leads to significantly better tax morale. Thus, independently of the cultural setting, this variable has a strong effect on tax morale.

Table 7

The Effects of Trust and National Pride on Tax Morale in Europe

Dependent Variable: Tax Morale	Sign and Significance of the Coefficients			PRIDE
	TRUST			
Countries	TRUST IN GOVERN.	TRUST LEGAL SYS.	TRUST IN COURT/LEG. S.	
COUNTRIES POOLED				
Europe 1989-1990 (WVS)		+		+
SPECIFIC COUNTRIES				
<i>Switzerland</i>				
1989 (WVS)				(+)
1996 (WVS)	+	+		
1999 (ISSP)			+	
<i>Spain</i>				
1990 (WVS)		+		+
1995 (WVS)	+	+		
<i>Belgium</i>				
1990 (WVS)		+		+

Notes: Dependent variable: tax morale. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant.

Table 8

The Effects of Trust and National Pride on Tax Morale in North and Latin America

Dependent Variable: Tax Morale	Sign and Significance of the Coefficients			PRIDE
	TRUST			
Countries	TRUST IN GOVERN.	TRUST IN PRESIDENT	TRUST PUBL. OFFICIALS	
COUNTRIES POOLED				
Latin America (WVS 1995-1997)			+	+
Latin America (Latinobarómetro 1998)		+		
SPECIFIC COUNTRIES				
<i>USA</i>				
1987 (Taxpayer Opinion Survey)			+	
<i>Canada</i>				
1990 (WVS)	+			+
<i>Costa Rica</i>				
1998 (Latinobarómetro)		+		

Notes: Dependent variable: tax morale. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant.

Table 9

The Effects of Trust and National Pride on Tax Morale in Transition and Asian Countries

Dependent Variable: Tax Morale	Sign and Significance of the Coefficients			PRIDE
	TRUST			
Countries	TRUST IN GOVERN.	TRUST LEGAL SYS.	TRUST PUBL. OFFICIALS	
COUNTRIES POOLED				
Transition Countries (WVS 1989-1993)		+		+
Transition Countries (WVS 1995-1998)	+	+	+	+
Asia (WVS 1995-1997)	+	+		
SPECIFIC COUNTRIES				
TRANSITION COUNTRIES				
<i>Former Soviet Union Countries</i>				
Russia 1991 and 1995 (pooled)	+	+		+
Estonia 1990 and 1996 (pooled)	+	+		+
Latvia 1990 and 1996 (pooled)	+	+		+
Lithuania 1990 and 1996 (pooled)	+	+		+
Belarus 1990 and 1996 (pooled)	+	+		+
Central/Eastern Europe				
Poland 1989 and 1997 (pooled)	+	+		+
Bulgaria 1990 and 1997 (pooled)	+	+		+
Slovenia 1992 and 1995 (pooled)		+		+
ASIA				
<i>India</i>				
1995/1996	+			+
1990 and 1995/1996 (pooled)	+	+		+
<i>Japan</i>				
1995		+	+	(+)
1981, 1990 and 1995 (pooled)		+		+

Notes: Dependent variable: tax morale. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant.

3. Institutions

In the previous subsection we have analysed the constitutional and current politico-economic levels, taking attitudinal questions into consideration. In a next step, empirical evidence is going to be presented about the effects of direct democracy and local autonomy, which set the rules between taxpayers and the state at the constitutional level. Both, a higher direct

democracy and a higher local autonomy lead to a significantly higher tax morale in Switzerland and in the United States. Giving individuals the possibility to decide about the implementation of a tax amnesty or the degree of enforcement has also a significantly positive effect on tax compliance, as experiments in Switzerland and Costa Rica have shown. The policy implication for the countries analysed in this dissertation is clear: more direct democratic participation and greater local autonomy might be fruitful strategies to produce beneficial effects. The results emphasize the following argument by Frey (2003):

“The option of building up a closer relationship between citizens and the European Union is arduous and takes much time, but is desirable. It is laborious, because it requires fundamental changes in the EU constitution. The citizens must be involved in both fundamental and daily decisions. It also conforms to a Europe of the twenty-first century built on fundamental trust between citizens and government” (p. 24).

Such results do not only hold for the EU. *Table 10* shows that a higher pro democratic attitude leads to a higher tax morale in Latin America and in transition countries as well. A move toward more democracy as we observe in transition countries (see, e.g., Frey 2002) might help to enhance tax morale and civic virtue over time.

Table 10

The Effects of Direct Democracy and Federalism on Tax Morale and Tax Compliance

Dependent Variables: Tax Compliance and Tax Morale	Sign and Significance of the Coefficients		
	Democracy		Federalism
Countries	DIRECT DEMOCRACY	VOTING	PRO DEMOCR. ATTIT.
			LOCAL AUTONOMY
SPECIFIC COUNTRIES			
<i>Switzerland</i>			
1996 (WVS)	+		+
1999 (ISSP)	+		+
Experiment (CHAPTER XXI)		+	
<i>Switzerland and Costa Rica (pooled)</i>			
Experiment (CHAPTER XVII)		+	
Experiment (CHAPTER XXII)		+	
<i>USA</i>			
1995 (WVS)	+		
1987 (Taxpayer Opinion Survey)	+		
<i>Spain</i>			
1990 (WVS)			+
<i>Japan</i>			
1995 (WVS)			+
<i>India</i>			
1995/1996 (WVS)			+
COUNTRIES POOLED			
Latin America (WVS 1995-1997)			+
Transition Countries (WVS 1995-1998)			+

Notes: Dependent variable: tax morale. +: significant positive coefficient.

4. Deterrence and Perceptions, the Tax System and the Tax Administration

What about the traditional tax policy strategies? A generally interesting finding of this dissertation is the fact that deterrence factors do not work well. This strongly reduces the significance of such an instrument for resolving the social dilemma of tax payments. The results seem to confirm that in modern democratic states, based on a high level of consent among the actors, deterrence factors do not work well (see Frey 2003). Furthermore, the

results show that individuals after having been audited cannot be supposed to find the way back to the legal path.

In general, *Table 11* shows that a tax policy should maintain a high level of social capital. If people believe that others are honest their willingness to pay taxes increases. Otherwise, the government and the tax administration get into hot water. If individuals notice that many others evade taxes, their intrinsic motivation to comply with taxes decreases. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic and the moral costs of evading taxes decrease. On the other hand, *Table 10* indicates that if the tax administration tries to be honest, fair, informative, and helpful, acting as a *service* institution and thus treating taxpayers as partners and not

“inferiors in a hierarchical relationship, taxpayers have stronger incentives to pay taxes honestly” (Frey 2003, p. 11).

Table 11

Deterrence and Perceptions, the Tax System and the Tax Administration

Variables	Countries						
	Switzerland (CH)		US	Latin America		CH and CR (pooled)	
Dependent Variable : Tax Morale	WVS (1996)	ISSP (1999)	TOS 1987	Latin America LB 98 (pooled)	Costa Rica (CR) LB 98	Exp. C. XVII	Exp. C. XXII
Independent Variables							
a) Deterrence Factors							
FINE RATE	(-)	(-)				-	-
AUDIT PROBABILITY HAVING BEEN AUDITED	(+)	(±)				-	-
b) Tax System							
INDIVID. INCOME TAX RATE	(-)	(-)					
FAIRNESS OF THE TAX SYSTEM			+				
COMPLEXITY OF THE TAX SYS.			(-)				
c) Tax Administration (TA)							
POSITIVE ATTIT. TOWARDS TA			+				
d) Taxpayers' Perception							
TAX EVASION/AVOIDANCE			-				
PROBABILITY OF AUDIT			-	(-)			
FEAR OF GETTING CAUGHT			+				
TRUST PEOPLE OBEY THE LAW			+	+	+		

Notes: Dependent variable: tax morale. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being significant.

V. WHAT THE FUTURE HOLDS

Section V presents a brief look into future research possibilities. A first systematic analysis of what shapes tax morale has been done in this dissertation. Empirical evidence has been found that informal and formal institutions have a significant impact on tax morale. However, this wide area still has many aspects, many important hypotheses and policy questions that have scarcely been investigated until now.

1. Methodology

As there is a lack of empirical evidence in the tax compliance literature, more empirical work is needed. One of the main purposes of this dissertation was to reduce the lack of empirical evidence outside the U.S. However, as the available databases show, it will be possible to intensify this work.

1. Surveys

Economists have learned in the last few years to work with survey data, thanks to more sophisticated statistical techniques and designs. This dissertation has chiefly worked with the World Values Survey. A new data wave (fourth) has been collected in 1999-2001 and is soon going to be available. It covers a couple of new countries, especially in developing countries where evidence is hardly available. Furthermore, as many European countries have participated in this wave, it will be possible to conduct a cross-section time series analysis with European WVS data.

Africa has not been included in the analysis, although recently a new data set (“Afrobarometro”) has collected data which allow in the future to analyse tax morale as dependent variable. This dissertation has worked with the ISSP data set to analyse Switzerland. However, this data set covers more than 30 countries though allowing to get deeper empirical insights. Greatest progress for the future research on tax morale and tax compliance might stem from sophisticated comparisons across societies. A comparative institution analysis among countries is especially important as standard models of taxpayer behaviour do not pay enough attention to the influence of institutions on tax compliance. Are

there differences in the level of tax morale due to differences in the degree of government stability and openness, in the tax system (self-assessment or not), equality and subjects' perception of the public sector and the degree of enforcement aggressiveness? Such questions merit further attention. They will help to better understand the role of societal institutions for tax morale and tax compliance.

Another interesting data set is the British Social Attitudes Survey, a survey conducted on a regular basis which covers a wide range of questions. To the author's knowledge only Orviska and Hudson (2002) have worked with this data set in the tax compliance literature, using the 1996 survey. As many years are available, a cross-section time series analysis can be conducted.

More work can be done regarding the measurement of tax morale. In most cases in this dissertation a single question has been used to define tax morale as the dependent variable. Using different data sets and countries will allow to reduce possible biases due to one single question. Further research attempts could construct an index of tax morale using more than one question and check the robustness of the obtained results. However, it should be noticed that an index is also associated with many problems. In some data sets such an index can only be built considering questions about *morale* rather than *tax morale*.

In general, it might be interesting to analyse further questions that measure trustworthiness, such as attitudes towards lying or returning money found in the street, claiming government benefits without being entitled to, dodging fares on public transport, buying something known to have been stolen, accepting a bribe in the performance of ones duties. Such questions are interesting as the empirical analysis of trustworthiness is just beginning in economics. However, in such an analysis it is also important to take into account the institutional conditions. For example, Leitzel (2003, p. 1) reports an interesting case from Bogota. As cars stopping at red lights late at night became favorite targets for robbery and carjacking, nocturnal drivers refused to respect the traffic rules, preferring the possibility of an accident to the possibility of being a victim of a violent crime. The authorities reacted to that situation replacing the red and green lights with a flashing yellow light late at night. In general, civic disobedience always raises the question whether the rules are fair and just and to which extent the disobedience has been intentional or unintentional.

In the dissertation we have analysed tax morale mostly at the individual level. In some cases a bivariate analysis has been conducted at the aggregated level, but never a multiple regression. However, the WVS survey, e.g., covering more than 40 countries would allow to exploit the data at the aggregate level. It could therefore be analysed whether the same

relationships that explain attitudes towards tax compliance within a country also explain differences in average attitudes across countries? Investigating this question it would be important to consider that in different countries individuals' exposure to the tax system is quite different. Furthermore, additional variables as, e.g., corruption could be integrated. This might be interesting as CHAPTER V has shown that in countries where corruption is systemic and government budgets lack transparency, the obligation of paying taxes to the government might not be seen as an accepted social norm.

2. Experiments

It might be helpful to include experimental designs purposed by psychologists as Webley et al. (1991) or Robben (1991), which emphasized more experimental reality. One point should merit special attention. In the experiments done in this dissertation tax compliance has only been measured giving subjects the possibility to decide how much income they were willing to declare. But tax compliance experiments should not only offer the possibility to under-declare or not. Subjects should have additional tasks to perform including, for example, deduction possibilities. Focusing only on the income declaration might produce some biases. Subjects in the experiment could try what will happen when they under-declare. Furthermore, participants could be tempted to behave as clever gamblers, trying to check all possibilities which finally would override the desire to behave as in real tax life. Finally, in all experiments in this dissertation people were fully informed about all tax parameters. In real life, however, it can be supposed that people tend to overestimate the audit probabilities.

Employing students has often been criticized. In our dissertation we have used experiments with students, postdoctoral students and university staff members and an experiment with real agents (taxpayers). Further experiments could intensify the work with real agents to check whether their behaviour is in line with students'. Furthermore, it might be interesting to distribute real money from the beginning as has been in one experiment in this dissertation. This might be important because it gives participants a clear notion of the situation, of the purchasing power of their income, an aspect often neglected in most experiments made in artificial settings.

3. Field Experiments

I believe that field or social experiments, a strongly neglected instrument in the tax compliance literature, offer us one of the best instruments to analyse taxpayers' behaviour in the future. The main advantage is the implementation of tax authorities instead of experimenters, which evokes real processes in the usual environment outside a laboratory setting. It helps to better test the effects of different instruments on taxpayers in the real situation of "filling out the tax form" and "paying the taxes". This helps formulate practical advice on tax policy, based on a scientific test. In the future researchers and the tax administration should cooperate more closely to reduce the lack of empirical findings and to get innovative new insights.

2. Topics

As some aspects in this dissertation are relatively novel in the tax compliance literature, e.g., the empirical evaluation of what shapes tax morale, the work leaves many aspects open. As in many chapters of this dissertation further research possibilities and open questions have been treated quite intensively, just a few ideas on aspects to consider in the future shall be presented here. Special focus is on two topics, institutions and complexity.

1. Formal and Informal Institutions

Studies that analyse the impact of institutions on tax morale and tax compliance are relatively rare. In this dissertation we have analysed two elementary institutions at the constitutional level: direct democracy and federalism. However, there are other formal institutions that might have an effect on tax morale and tax compliance. For example, audit courts have rarely been investigated (for exceptions see Frey 1994, Frey and Serna 1990, Streim 1994, Forte and Eusepi 1994 and Schelker and Eichenberger 2003). As such an institution makes government activities more transparent it can be hypothesized that a stronger audit court leads to a higher tax morale. Audit courts inform taxpayers about public finance aspects and control the activities of the governments, reducing thus the asymmetry information between taxpayers and the government, which might be honored by a higher tax morale or tax compliance.

Switzerland would be idoneous country to analyse the effects of audit court, as it has a certain variation in the degree of this control instance at the local and the cantonal level.

Tax compliance literature might be more closely connected to the social capital literature. In recent years many studies have investigated the effects of values, norms, and attitudes on economic *behaviour* (see, e.g., Knack and Keefer 1997). Thus, cultural studies seem to be en vogue in economics. In this dissertation we did not only analyse how culture affects behaviour (see cross-culture experiments) but also how culture affects *attitudes*. The dissertation has tried as far as possible to disentangle cultural effects from other aspects of the economic and institutional environment. However, further efforts are still needed to better control for the properties of the tax system and the way taxes are administrated, and thus not to confound culture with features of the tax structure. In general, based on the cultural diversity of Europe, economists can find a couple of excellent cases to analyse. This is particularly interesting as most of the empirical evidence in the tax compliance literature came from the United States. For example, it has been pointed out that Southern Italy has a lower civic virtue than Northern Italy (see, e.g., Frey 2003, Putnam 1993). Thus, it can be tested whether Northern Italy has a higher tax morale than Southern Italy, having the possibility to control for many aspects (e.g., language) that are more difficult to control in a cross-country analysis.

Regarding the analysis of culture, it might be fruitful to compare experimental findings with survey results and check if there are similar tendencies. A higher tax compliance in experiments should be in line with a higher tax morale.

2. Complexity of the Tax System

Can simplicity of the tax system induce a higher tax compliance rate? Is complexity correlated with tax evasion? In general, simplicity is a major issue in tax reform concerns. A good tax system should be simple and easy to understand. Complexity may result in unintentional non-compliance if taxpayers have problems in filling out the tax form. It can reduce the moral costs of evading taxes and might impose costs to the taxpayers. A simpler tax law would reduce taxpayers' expenditure in time and money to comply with the tax law. Until now, only few empirical evidence is available regarding the effects of a simplification of the tax system on tax compliance and tax morale. This topic can be elucidated by surveys and experiments. These can help to get insights into the direct causality in this complex area. As

already mentioned, an experimental analysis might be innovative as it would mean to expand the experimental designs from a single choice decision to a multiple decision process, including, e.g., deductions. Experiment participants must have the possibility to evade in many ways. Surveys on the other hand can give a better picture of whether a higher perceived complexity leads to a lower or a higher tax morale. In this dissertation we have obtained findings with the Taxpayer Opinion Survey. However, more empirical evidence outside the United States is necessary, especially in the light of many reforms that are conducted regularly all around the world.

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Ajzen, I. and M. Fishbein (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs: Prentice-Hall.
- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Alm, J. (1991). A Perspective on the Experimental Analysis of Taxpayer Reporting, *The Accounting Review*. 66: 577-593.
- Alm, J. (1998). Tax Compliance and Administration, Working Paper, University of Colorado at Boulder.
- Alm, J., B. R. Jackson and M. McKee (1993). Fiscal Exchange, Collective Decision Institutions, and Tax Compliance, *Journal of Economic Behavior and Organization*. 22: 285-303.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Alm, J., M. McKee and W. Beck (1990). Amazing Grace, Tax Amnesties and Compliance, *National Tax Journal*. 43: 23-37.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Baldry, J. C. (1987). Income Tax Evasion and the Tax Schedule: Some Experimental Results, *Public Finance*. 42: 357-383.
- Baumol, W. J. and W. E. Oates (1979). *Economics, Environmental Policy, and the Quality of Life*. Englewood Cliffs: Prentice-Hall.
- Blumenthal, M., C. Christian and J. Slemrod (2001). Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota, *National Tax Journal*. 54: 125-138.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Buchanan, J. M. (1999). Taxpayer Apathy, Institutional Inertia, and Economic Growth, *Journal of Public Finance and Public Choice*. 17: 3-10.
- Burtless, G. (1995). The Case for Randomized Field Trials in Economic and Policy Research, *Journal of Economic Perspective*. 9: 63-84.
- Clotfelter, C. T. (1983). Tax Evasion and Tax Rate: An Analysis of Individual Return, *The Review of Economics and Statistics*. 65: 363-373.

- Cooper, D., J. H. Kagel, W. Lo, and Qing Liang Gu (1999). Gaming against Managers in Incentive Systems: Experiments with Chinese Managers and Chinese Students, *American Economic Review*. 89: 781-804.
- Cross, J. (1980). Some Comments on the Papers by Kagel and Battalio and by Smith, in: J. Kmenta and J. Ramsey (eds.), *Evaluation of Econometric Models*. New York University Press.
- Crowe, M. T. (1944). *The Moral Obligation of Paying Just Taxes*. Washington D. C.: The Catholic University of America Studies in Sacred Theology, No. 84.
- Das-Gupta, A., R. Lahiri and D. Mookherjee (1995). Income Tax Compliance in India: An Empirical Analysis, *World Development*. 12: 2051-2064.
- Das-Gupta, A. and D. Mookherjee (1995). Reforming Indian Income Tax Enforcement, IED Discussion Paper Series, No. 52, Boston University.
- De Alessi, L. (1979). Toward an Analysis of Postdisaster Cooperation, *American Economic Review*. 65: 127-138.
- Dubin, J. A. and L. L. Wilde (1988). An Empirical Analysis of Federal Income Tax Auditing and Compliance, *National Tax Journal*. 41: 61-74.
- Elffers, H. (2000). But Taxpayers Do Cooperate!, in: M. Van Vugt, M. Snyder, T. R. Tyler, A. Biel (eds.), *Cooperation in Modern Society*. Promoting the Welfare of Communities, States and Organizations. London: Routledge: 184-194.
- Elster, J. (1989). *The Cement of Society: A Study of Social Order*. Cambridge: Cambridge University Press.
- Erard, B. (1993). Taxation with Representation: An Analysis of the Role of Tax Practitioners in Tax Compliance, *Journal of Public Economics*. 52: 163-197.
- Erard, B. and J. S. Feinstein (1994). The Role of Moral Sentiments and Audit Perceptions in Tax Compliance, *Public Finance*. 49: 70-89.
- Feld L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Fehr, E., U. Fischbacher, B. von Rosenblatt, J. Schupp and G. G. Wagner (2003). A Nation-Wide Laboratory. Examining Trust and Trustworthiness by Integrating Behavioral Experiments into Representative Surveys, CESifo Working Paper No. 866, February 2003.
- Fischbacher, U. (1998). *Zurich Toolbox for Readymade Economic Experiments*. Experimenter's Manual. University of Zurich.
- Forest, A. and S. M. Sheffrin (2002). Complexity and Compliance: An Empirical Investigation, *National Tax Journal*. 55:75-88.
- Forschungsstelle für empirische Sozialökonomik (1997). Steuermentalität und Steuermoral der bundesdeutschen Bevölkerung und deren Einstellungen zur Steuerreform.
- Forte, F. and G. Eusepi (1994). A Profile of the Italian State Audit Court: An Agent in Search of a Resolute Principal, *European Journal of Law and Economics*. 1: 151-160

- Frey, B. S. (1994). Supreme Auditing Institutions: A Politico-Economic Analysis, *European Journal of Law and Economics*. 1: 169-176.
- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK, Edward Elgar Publishing.
- Frey, B. S. (1999). *Economics as a Science of Human Behaviour*, Boston/Dordrecht/London: Kluwer.
- Frey, B. S. (2002). Direct Democracy for Transition Economies, paper for the Collegium Budapest, Institute for Advanced Study.
- Frey, B. S. (2003). The Role of Deterrence and Tax Morale in Taxation in the European Union, Jelle Zijlstra Lecture, Netherlands Institute for Advanced Study in the Humanities and Social Sciences (NIAS).
- Frey, B. S. and R. Eichenberger (1999). *The New Democratic Federalism for Europe*. Cheltenham, UK: Edward Elgar.
- Frey, B. S. and R. Eichenberger (2001). The Political Economy of Stabilization Programmes in Developing Countries, in B. S. Frey (eds.), *Inspiring Economics*. Human Motivation in Political Economy. Cheltenham, UK: Edward Elgar: 163-183.
- Frey, B. S. and L. P. Feld (2002). Deterrence and Morale in Taxation: An Empirical Analysis, CESifo Working Paper No. 760, August 2002.
- Frey, B. S. and A. Serna (1990). Eine politisch-ökonomische Betrachtung des Rechnungshofs, *FinanzArchiv*. 48: 244-270.
- Frey, B. S. and A. Stutzer (2002). *Happiness and Economics*. Princeton: Princeton University Press.
- Frey, B. S. and H. Weck-Hannemann (1984). The Hidden Economy as an 'Unobserved' Variable, *European Economic Review*. 26: 33-53.
- Frey, R. L. and B. Torgler (2002). Entwicklung und Stand der Steuermoralforschung, *WiSt*. 3: 130-135.
- Friedland, N., S. Maital and A. Rutenberg (1978). A Simulation Study of Income Tax Evasion, *Journal of Public Economics*. 10: 107-116.
- Gërxhani, K. (2002) Tax Evasion in Albania: An Institutional Vacuum?, paper presented at the Annual Meeting of the European Public Choice Society, Belgrade.
- Gërxhani, K. and A. Schram (2001). Tax Evasion and the Source of Income: An Experimental Study in Albania and the Netherlands, University of Amsterdam, CREED Working Paper.
- Graham, C. and S. Pettinato (2002). *Happiness and Hardship: Opportunity and Insecurity in New Market Economies*. Washington: The Brookings Institution.
- Graetz, M. J. and L. L. Wilde (1985). The Economics of Tax Compliance: Facts and Fantasy, *National Tax Journal*. 38: 355-363.
- Grasmick, H. G., R. J. Bursik and J. K. Cochran (1991). "Render Unto Caesar What Is Caesar's": Religiosity and Taxpayers' Inclinations to Cheat, *Sociological Quarterly*. 32: 251-266.
- Hasseldine, J. (2000). Using Persuasive Communications to Increase Tax Compliance: What Experimental Research Has (and Has Not) Told Us, *Australian Tax Forum*. 15: 227-224.

- Heinrich, J., P. Young, R. Boyd, K. McCabe, W. Albers, A. Ockenfels and G. Gigerenzer (1999). What Is the Role of Culture in Bounded Rationality?, unpublished manuscript.
- Heinrich, J., R. Boyd, S. Bowles, C. Camerer, E. Fehr, H. Gintis and R. McElreath (2001). In Search of Homo Economicus: Behavioral Experiments in 15 Small-Scale Societies, *American Economic Review*. 91: 73-78.
- Hirschi, T. and R. Stark (1969). Hellfire and Delinquency, *Social Problems*. 17: 202-213.
- Hirschman, A. O. (1970). *Exit, Voice, and Loyalty*. Cambridge (Mass.): Harvard University Press.
- Hull, B. B. (2000). Religion Still Matters, *Journal of Economics*. 26: 35-48.
- Hull, B. B. and F. Bold (1989). Towards an Economic Theory of the Church, *International Journal of Social Economics*. 16: 5-15.
- Inglehart, R. (1997). *Modernization and Postmodernization: Cultural, Economic and Political Change in 43 Societies*. Princeton: Princeton University Press.
- Inglehart, R. (2000). Globalization and Postmodern Values, *Washington Quarterly*. 23:215-228.
- Jackson, B. R. and V. C. Milliron (1986). Tax Compliance Research: Findings, Problems, and Prospects, *Journal of Accounting Literature*. 5: 125-166.
- Kasper, W. and M. E. Streit (1999). *Institutional Economics*. Social Order and Public Policy. Cheltenham, UK: Edward Elgar.
- Kirchler, E., B. Maciejovsky and F. Schneider (2001). Mental Accounting and the Impact of Tax Penalty and Audit Frequency on the Declaration of Income: An Experimental Analysis, Discussion Paper 182. Humboldt-University of Berlin, 2001.
- Knack, S. and P. Keefer (1997). Does Social Capital Have an Economic Payoff: A Cross-Country Investigation, *Quarterly Journal of Economics*. 4: 1251-1288.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny (1999). The Quality of Government, *Journal of Law, Economics, and Organization*. 15: 222-278.
- Leijonhufvud, A. (1973). Life Among the Econ, *Western Economic Journal*. 11: 327-337.
- Leitzel, J. (2003). *The Political Economy of Rule Evasion and Policy Reform*. London: Routledge.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Lipford, J., R. E. McCormick and R. D. Tollison (1993). Preaching Matters, *Journal of Economic Behavior and Organization*. 21: 235-250.
- Long, S. and J. Swingen, J. (1991). The Conduct of Tax-Evasion Experiments: Validation, Analytical Methods, and Experimental Realism, in: P. Webley, H. Robben, H. Elffers and D. Helsing, *Tax Evasion: An Experimental Approach*. Cambridge University Press, Cambridge: 128-138.
- Magleby, D. B. (1994). Direct Legislation in the American States, in: D. Butler and A. Ranney (eds.), *Referendums around the World*. Washington: The AEI Press: 218-257.
- Martinez-Vazquez, J. (2001). Mexico : An Evaluation of the Main Features of the Tax Administration, Working Paper, 01-12, Georgia State University, Atlanta.

- Martinez-Vazquez, J. and R. M. McNab (2000). The Tax Reform Experiment in Transition Countries, *National Tax Journal*. 53: 273-298.
- McCloskey, D. N. and S. T. Ziliak (1996). The Standard Error of Regressions, *Journal of Economic Literature*. 34: 97-114.
- Mummert, A. and F. Schneider (2002). The German Shadow Economy: Parted in a United Germany?, *FinanzArchiv*. 58: 287-317.
- Ockenfels, A. and J. Weimann (1999). Types and Patterns: An Experimental East-West-German Comparison of Cooperation and Solidarity, *Journal of Public Economics*. 71: 275-287.
- Orviska, M. and J. Hudson (2002). Tax Evasion, Civic Duty and the Law Abiding Citizen, *European Journal of Political Economy*. 19: 83-102.
- Pommerehne, W. W. and P. Zweifel (1991). Success of Tax Amnesty: At the Polls, for the Fisc?, *Public Choice*. 72: 131-165.
- Pommerehne, W. W. , A. Hart and B. S. Frey (1994). Tax Morale, Tax Evasion and the Choice of Policy Instruments in Different Political Systems, *Public Finance*. 49 (Supplement): 52-69.
- Putnam, R. (1993). *Making Democracy Work*. Princeton: Princeton University Press.
- Pyle, D. J. (1991). The Economics of Taxpayer Compliance, *Journal of Economic Surveys*. 5: 163-198.
- Pyle, D. J. (1993). The Economics of Taxpayer Compliance, in : P. M. Jackson (ed.), *Current Issues in Public Sector Economics*. Houndsmills: Mcmillan: 58-93.
- Graham, C. and S. Pettinato (2002). *Happiness and Hardship*. Opportunity and Insecurity in New Market Economies. Washington, D.C.: Brookings Institution Press.
- Robben, H. S. J. (1991). *A Behavioral Simulation and Documented Behavior Approach to Tax Evasion*. Deventer: Kluwer.
- Roth, A. E. (1995). Introduction to Experimental Economics, in: J. H. Kagel and A. E. Roth (eds.), *The Handbook of Experimental Economics*. Princeton: Princeton University Press: 1-98.
- Roth, J. A., J. T. Scholz and A. D. Witte (eds.) (1989). *Taxpayer Compliance*, Vol. 1 and Vol. 2. Philadelphia: University of Pennsylvania Press.
- Sakurai, Y. and V. Braithwaite (2001). Taxpayers' Perceptions of the Ideal Tax Adviser: Playing Safe or Saving Dollars?, Working Paper No 5, The Australian National University, Centre of Tax System Integrity.
- Schelker, M. and R. Eichenberger (2003). Starke Rechnungsprüfungskommissionen: Wichtiger als direkte Demokratie und Föderalismus? Ein erster Blick auf die Daten, paper presented at the Jahrestagung der Schweizerischen Gesellschaft für Volkswirtschaft und Statistik, Berne 20/21 March, 2003.
- Schmölders, G. (1951/1952). Finanzpsychologie, *Finanzarchiv*. 13: 1-36.
- Schmölders, G. (1960). *Das Irrationale in der öffentlichen Finanzwissenschaft*. Hamburg: Rowolt.
- Schmölders, G. (1962). *Volkswirtschaftslehre und Psychologie*. Berlin: Reinbek.

- Schmölders, G. (1970). Survey Research in Public Finance: A Behavioral Approach to Fiscal Theory, *Public Finance*. 25: 300-306.
- Schwartz, R. and S. Orleans (1967). On Legal Sanctions, *University of Chicago Law Review*. 34: 282-300.
- Sheffrin, S. M. and R. K. Triest (1992). Can Brute Deterrence Backfire? Perceptions and Attitudes in Taxpayer Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement, Ann Arbor: University of Michigan Press: 193-218.
- Slemrod (ed.) (1992). *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press
- Slemrod, J. (2002). Trust in Public Finance, NBER Working Paper 9187, September, Cambridge, Ma.
- Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement, Ann Arbor: University of Michigan Press: 223-250.
- Stramer, C. (1999). Experiments in Economics ... Should we Trust the Dismal Scientists in White Coats?, *Journal of Economic Methodology*. 6: 1-30.
- Streim, H. (1994). Agency Problems in the Legal Political System and Supreme Auditing Institutions, *European Journal of Law and Economics*. 1: 177-191.
- Strümpel, B. (1969). The Contribution of Survey Research to Public Finance, in: A. T. Peacock (ed.), *Quantitative Analysis in Public Finance*. New York: Praeger Press: 14-32.
- Stutzer, A. (1999). Demokratieindizes für die Kantone der Schweiz. Working Paper No. 23. Institute for Empirical Research in Economics, University of Zurich.
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Torgler, B. (2001). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168.
- Torgler, B. (2002). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-684.
- Torgler, B. (2003a). Why Do People Go to War?, forthcoming in: *Defence and Peace Economics*.
- Torgler, B. (2003b). Ancestors of the Contemporary Homo Economicus, *Homo Oeconomicus*. 19: 519-541.
- Van Houten, P. (1999). The Politics of Fiscal Autonomy Demands. Regional Assertiveness and Intergovernmental Financial Relations in Belgium and Germany, paper presented at the CASPIC MacArthur Scholars' Conference, May.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.
- Webber, C. and A. Wildavsky (1986). *A History of Taxation and Expenditure in the Western World*. New York : Simon and Schuster.

- Webley, P., H. Robben, H. Elffers and D. Hessing (1991). *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press.
- Weck, H. (1983). *Schattenwirtschaft: Eine Möglichkeit zur Einschränkung der öffentlichen Verwaltung?* Eine ökonomische Analyse. Finanzwissenschaftliche Schriften 22. Bern: Lang.
- Weck, H., W. W. Pommerehne and B. S. Frey (1984). *Schattenwirtschaft*. München: Franz Vahlen.
- Wilde, L. (1980). On the Use of Laboratory Experiments in Economics, in: J. Pitt (ed.), *The Philosophy of Economics*. Dordrecht: Reidel. 137–143.
- Witte, A. D. and D. F. Woodbury (1985). The Effect of Tax Laws and Tax Administration on Tax Compliance, *National Tax Journal*. 38: 1-14.

CHAPTER II

WHAT DO WE KNOW ABOUT TAX MORALE AND TAX COMPLIANCE? *

ABSTRACT

Tax morale is puzzling in our society. Observations show that tax compliance cannot be satisfactorily explained by the level of enforcement. Other factors may well be relevant. This paper contains a short survey of important theoretical and empirical findings in the tax morale literature, focussing on personal income tax morale. The following three key topics are discussed: moral sentiments, fairness and the relationship between taxpayer and government. The survey stresses the relevance of incorporating tax morale for a better understanding of tax compliance.

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I. INTRODUCTION

Tax morale is a societal phenomenon that is difficult to explain. Questions about tax compliance are as old as taxes themselves and will remain an area of discovery as long as taxes exist. To understand the impact of a tax system, it is important to know who complies with the tax law as well as who does not. Tax evasion is a large and growing problem in almost all countries. Unfortunately, we know very little about tax morale. Economists see the problem as one of rational decision made under uncertainty. This means that cheating on taxes is a gamble paying off in lower taxes or, with the probability of detection, ending in sanctions.

This view of taxpayer behaviour was first presented in a formal model by Allingham and Sandmo (1972), influenced by the economics-of-crime approach (see Becker 1968). Nevertheless, such a portfolio analysis cannot explain why many households comply more fully than predicted by this approach. A lot of economic approaches to tax compliance continue on this framework (see Cowell 1990).

This survey focuses on tax morale and tax compliance and intends to outline alternative theories and empirical findings. James Andreoni, Brian Erard and Jonathan Feinstein (1998) wrote:

“adding moral and social dynamics to models of tax compliance is as yet a largely undeveloped area of research” (p. 852).

Over fifteen years ago, Pommerehne (1985) wrote in the *Rivista Internazionale di Scienze Economiche e Commerciali*:

“the attitude can extend to ... supposed factors influencing tax morale, particularly the subjective sense of tax burden ..., the individual perception of fairness of the tax system ..., the relation between taxpayer and administration, but also to what is seen as a fair exchange between the subjective sense of tax burden and the service offered by the state” (translated, p. 1164).

This is therefore an opportunity to take a stroll through theoretical and empirical findings in the tax morale literature, focussing on personal income tax morale. The question about tax morale is rather why people do not cheat so much than why they do. Most people pay their taxes. Tax compliance is a finally observable action. Complying or not is not only a function of opportunity, tax rates, and probability of detection, but also the function of an individual's

willingness to comply or evade. When the tax morale is high, tax compliance will be relatively high too. To analyse the puzzle of tax compliance, it is thus important to go one step back to explain tax morale. The focus is rather on the process than just on outcomes.

In this paper I discuss three key factors that seem to be important for understanding tax morale: moral rules and sentiments, fairness and the relationship between taxpayer and government. Section II examines moral rules and sentiments and presents two theories to explain tax morale. In Section III the issue of fairness is analysed. In Section IV, the relationship between taxpayer and government is discussed and Section V offers concluding remarks.

II. MORAL RULES AND SENTIMENTS

Analysing morale poses some problems for economic analysis. The only possibility to quantify it is looking at its effects. Economists like Günter Schmolders (1951/1952, 1960, 1962, 1970a, 1970b) and George Kantona (1971) have emphasised that economic phenomena should not only be analysed from the traditional point of view. It has been noted that compliance cannot be explained entirely by the level of enforcement (Graetz and Wilde 1985, Elffers 1991). Countries set the levels of audit and penalty¹ so low that most individuals would evade taxes, if they were rational, because it is unlikely that cheaters will be caught and penalised. Nevertheless, a high degree of compliance is observed.

Compliance decisions must be affected by other factors. How can moral rules and sentiments directly guide tax morale? In the literature we find psychological theories which are discussed in the context of tax morale. It may seem astonishing, but a lot of people do comply with the rules and laws. Kelman's (1965) work, adapted to tax compliance by Vogel (1974), illustrates how people comply for different reasons. Compliance, identification and internalisation are Kelman's tripartite typology. "Compliers" pay their taxes, because people are required to do so and fear the consequences if they do not. "Identifiers" are influenced by social norms and the beliefs and behaviours of people close or of importance to them. "Internalizers" have a consistency between their beliefs and their behaviour. In the first part I will focus on social norms and discuss the four sentiments guilt, shame, duty and fear. In the

¹ According to Andreoni, Erard and Feinstein (1998), in 1995 the audit rate in the United States for individual tax return was 1.7 percent, the civil penalty for underpayment of taxes is calculated as 20 percent of the underpayment that results from wrongful conduct.

second part I present two interesting economic theories which intend to explain tax morale and tax compliance by showing the limits of traditional economics. The theories imply an extension of the economic model of man.

1. Social Norms

One factor is social norms. There has been a renewed interest in the social basis of political and economic life (see Knight 1998). Putnam (1993) claims the importance of social capital for the effective governance of democracy. Other authors have singled out trust as an important feature of productive social relationship (e.g., Gambetta 1988, Hardin 1993). Slemrod (1998) argues that the social capital derived from the willingness to pay taxes voluntarily lowers the cost of the operating government and of equitably assigning its cost to citizens. Knack and Keefer (1997) tested the impact of civic duty and trust on growth and investment rates in a cross section analysis of 29 countries. To measure civic norms they used the World Values Surveys of 1981 and 1990-1991. One of the five particular actions to assess the strength of civic norm was “cheating on taxes if you have the chance”. In this way, tax compliance emerges as one dimension of civic norm. Knack and Keefer (1997) find a strong and significant positive relationship between social capital variables and economic growth.

When working with social norms, we have the difficulty that it is difficult to specify their exact meaning. Social norms consist of a pattern of behaviour that must be shared by other people and sustained by their approval and disapproval (Elster 1989). Fehr and Gächter (1997) define social norm as:

“behaviour regularity that is based on a socially shared belief how one ought to behave which triggers the enforcement of the prescribed behaviour by informal social sanctions” (p. 12).

and state:

“Reciprocity provides a key mechanism for the enforcement of social norms. In view of the fact that most social relations in neighborhoods, families and work places are not governed by explicit agreements but by social norms the role of reciprocity as a norm enforcement device is perhaps its most important function” (p. 11).

If others behave according to a socially accepted mode of behaviour, the individual will also behave appropriately. Thus, individuals will comply and pay taxes as long as they believe that compliance is a social norm (see Alm, McClelland and Schulze 1999).

Polinsky and Shavell (2000), who present a survey of the economic theory of public enforcement of law, emphasise the aspect of social norms for future research. Social norms can be seen as a general alternative to law enforcement² in channeling individuals' behaviour. The violation of social norms has consequences like internal sanctions (guilt, remorse) or external legal and social sanctions as gossip and ostracism. As Polinsky and Shavel (2000) state there is an expanding literature on social norms because of the influence social norms have on behaviour, their role as a substitute for and supplement to formal laws and the possibility that laws themselves can influence social norms³.

There is evidence that many countries with similar fiscal systems have different compliance experiences (Alm, Sanchez and De Juan 1995 for the United States, see Yankelovich, Skelly, and White 1984, Vogel 1974 for Sweden, Lewis 1979 for the United Kingdom and De Juan, Lasheras, and Mayo 1993 for Spain). The main conclusions are that (i) individuals who comply tend to view tax evasion as immoral, (ii) compliance is higher if moral appeals are made to the taxpayer, (iii) individuals with tax evaders as friends are more likely to be evaders themselves, and (iv) compliance is greater in societies with a stronger sense of social cohesion. Alm, Sanchez, and De Juan (1995) find in their experimental results strong evidence that in compliance the role of social norms is the most important determinant.

However, some points remain unexplained. How do social norms arise in the first place? How can these norms be changed by deliberate government policies? There are limits for a government to increase compliance using traditional policies such as audits and fines. If the government can influence a norm, tax evasion can be reduced by policy activities.

Taxpayers may be aware that their evasion could damage the welfare of the community they live in. As a consequence, evasion can produce psychological costs. People may not be comfortable with dishonesty (Spicer 1986). However, when a taxpayer is convinced that she pays too much taxes compared with the provided public goods, her psychological costs will be reduced.

² It is interesting that one of the earliest economically oriented writing on the subject of law enforcement dates from the eighteenth century. To mention is the work of Montesquieu (1748/1977), Beccaria (1767/1995) and Bentham (1789/1973). After Bentham it took nearly two hundred years before Becker (1968) published his important article on this topic.

³ Posner (1997, pp. 365-366) looks at the incentives for obeying norms. He finds four: (i) norms that are self-enforcing because obedience confers private benefits, (ii) norms that are enforced by emotions, (iii) milder sanctions by expressions of disapproval or ridicule and (iv) internalised norms, out of a sense of guilt or shame.

In literature we find two interesting theories that enable us to integrate moral constraints in a rational taxpayer model. The first theory is an altruistic approach (e.g., Chung 1976). Here, taxpayers are not only interested in their own welfare but also concerned about the general welfare. The decision to evade is constrained by the knowledge that their evasion will reduce the amount of resources available for social welfare. The second is the “Kantian” morality approach (see Laffont 1975, Sugden 1984). This approach, broadly related to Kant’s definition of morality, is based on the assumption that a fair tax is a tax which a taxpayer believes to be fair for all other taxpayers to pay. A false declaration will generate anxiety, guilt or a reduction in taxpayer’s self-image. It is assumed that a taxpayer feels these costs only if he believes that his tax share is not higher than what is defined fair. If he is paying a higher amount, evasion can be seen as a sort of self-defence. Here we have the connection to Section III, which is based on the idea that tax evasion can be reduced if a large majority of taxpayers feel that their tax burden is fair.

1. Guilt and Shame

The sentiments guilt and shame may influence reporting behaviour, reducing the perceived benefits of cheating. According to Lewis (1971), guilt arises when individuals realise that they have acted irresponsibly and in violation of a rule or social norm they have internalised. Since the obligation of paying taxes to the government is an accepted social norm, it makes sense that individuals who choose not to pay all of their taxes may feel guilty. Aitken and Bonneville (1980) found in a Taxpayer Opinion Survey that over 50% of the respondents claimed that their consciences would be bothered “a lot” after having engaged in any of the following activities: (i) padding business activities, (ii) overstating medical expenses, (iii) understating income, (iv) not filing a return or (v) claiming an extra dependent. Grasmick and Bursick (1990) interviewed 355 individuals in another survey, regarding their future inclination to perform various legal offences, including tax evasion. Their findings indicated that the anticipated guilt associated with committing tax evasion served as a much greater deterrent than the perceived threat of legal sanctions.

While guilt is associated with an impersonal rule or norm, shame has a “human face”, implicating the self-image. Lewis (1971) writes that shame is an experience where an internalised other “seems to scorn, despise, or ridicule the self”(p. 39).

Erard and Feinstein (1994) incorporate shame and guilt directly into the taxpayer's utility. They hypothesise that a taxpayer feels guilty when he under-reports and escapes detection. He also feels ashamed when he under-reports and gets caught. The authors also looked at the issue of misperceptions. Many taxpayer surveys indicate that taxpayers tend to overestimate the probability of an audit (e.g., Harris and Associates 1988, evidence from psychology experiments see Kahneman, Slovic and Tversky 1982). Individuals tend to overestimate the probability of unlikely events, such as tax audit, in a wide variety of contexts (Alm, McClelland and Schulze 1992). Kahneman and Tversky (1979) have developed the theory of "representativeness" influenced by the principles of cognitive psychology. Individuals form a rough assessment of the likelihood of an event by constructing scenarios of the future. They use these scenarios to estimate the probability of the event occurring. Some scenarios are more available than others, for example, rare and dramatic events. Tax audit can be seen as such a salient event. Memories of audits a taxpayer has personally experienced or which he was informed of support the imagination of a possible future audit. Erard and Feinstein (1994) argue that their results indicate that moral sentiments and audit misperceptions are necessary to provide a reasonable explanation of actual compliance behaviour. Their results suggest that taxpayers have substantial and varied misperceptions of the probability of an audit. Taxpayers overestimate its level and the rate at which it rises as the reported income falls. They anticipate guilt when filling out their return underreporting and escaping from detection, and anticipate shame if caught subsequently.

Nevertheless, this approach has some weaknesses. It cannot be derived from economic or psychological theory how guilt and shame should enter into the utility function. Furthermore, as guilt and shame are not directly observable, identification is based on the form of the assumptions.

2. Duty and Fear

Citizens' sense of duty could play a role in the analysis of tax morale. Scholz and Pinney (1995) argue that the uncertainty about the probability of getting caught imposes sufficient difficulties that citizens rely on heuristics to derive subjective estimates of risk. They focus on the implications of "duty heuristic"⁴ for the relationship between fear and duty, and

⁴ The duty heuristic is an extension of the low-information rationality approach (see Popkin 1991) we find in electoral studies and democratic theory (e.g., Downs 1957 discussed the advantage of following the advice of opinion leaders, Fiorina 1981 suggested that party identification provided low-cost means to track behaviour of

hypothesise that the taxpayers' sense of duty to pay taxes significantly influences the perceived probability and risk of being caught when cheating. The empirical findings support the idea that the subjective risk of getting caught is more closely related to the sense of duty than to objective risk factors. Duty influences taxpayers tempted to cheat as much as anyone else. Objective audit probabilities, on the other hand, affect only taxpayers who are more subject to the temptation to cheat. This findings have an interesting implication for tax policies. Increasing audits and penalties will not increase tax compliance significantly. Scholz and Lubell (1998) find that duty and fear increase significantly when taxes decrease, and decrease when taxes increase. So, a citizen's attitude toward compliance with a collective obligation and his/her fear of retribution varies according to changes in costs or benefits associated with the collective.

2. Theories

I will now present two theories and show their relevance for explaining tax morale and tax compliance. The approach of both theories is characterised by including a partially specific psychological effect to catch the relative importance of an effect without losing the spirit of the integrated psychological effect and without giving up economic foundations. Frey (1993) states:

“Inspirations from other social (and literary) sciences are very well compatible with the basis of modern economics, which has proved to be so useful. Indeed, the economic model of human behaviour properly understood perfectly lends itself to the integration of so far neglected aspects of people's actions. What is needed, however, is an effort to overcome the model of “homunculus economicus” who is at all times in full control of his or her emotions, who does not know any cognitive limitations, who is not embedded in a personal network, who is but extrinsically motivated and whose preferences are not influenced by processes of discussion ... It is time now to embark on a new course and to switch from an exporter to an importer of ideas” (p. 97 ff.).

1. Intrinsic Motivation

Other sciences like sociology and psychology have stressed the importance of a behaviour based on moral and ethical considerations. In economic analysis, internalised values are taken as exogenously given and not influenced by prices or regulations (see Becker 1976 and Hirshleifer 1985). However, a few economists such as Hirschman (1965) and Sen (1977) took the relationship between external and internal human motivation into account. Frey (1997) demonstrates that intrinsic versus extrinsic motivation are also relevant for explaining compliance behaviour⁵. He looks at tax morale as a particular kind of intrinsic motivation. It is an attempt to introduce a psychological effect into economics without giving up the rational choice framework. His approach includes a crowding-out effect of intrinsic motivation in the analysis of tax compliance. Increasing monitoring and penalties for noncompliance, individuals notice that extrinsic motivation has increased, which on the other hand crowds out intrinsic motivation to comply with taxes. Thus, the net effect of a stricter tax policy is unclear. If the intrinsic motivation is not recognised, taxpayers get the feeling that they can as well be opportunistic. This puts into account the relevance of policy instruments in supporting or damaging the intrinsic motivation. Intrinsic motivation depends on the application of policy instruments (see Section IV). But Frey (1997) claims that tax morale is not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations which prevent free riding by others and establish fairness and equity help preserve tax morale.

2. Ipsative Theory

Under certain circumstances human actions can be constrained by a set of possibilities which is considered to be relevant only for oneself. Other alternatives are disregarded (see Frey and Foppa 1986). Frey (1997) calls it the “ipsative possibility set” (p. 196). The theory behind strongly relies on psychological evidence and can be seen as an attempt to model an aspect of a human imperfection. The ipsative possibility sets are characterised by Frey (1997) as (i) non-marginal (alternatives are either considered fully or not at all), (ii) asymmetric (alternatives outside the set are out of consideration) and (iii) personal (relevant to a certain

⁵ For a recent survey see Frey and Jegen (2001). They show that crowding effects are an empirically relevant phenomenon.

person). Frey claims that an underextension of the ipsative set is a common phenomenon among rational actors. Tax morale can be seen as such an issue, which is not open to a marginal but rather an absolute evaluation. There are taxpayers who do not even search for ways to cheat at taxes while others act contrarily. Relative price changes, as a reason of higher punishment, are only considered by taxpayers with a low tax morality who cheat. Frey even speaks of a perverse effect that arises when the government threatens citizens of high tax morality with increased punishment. Citizens can take this as an indication that the government does not honour compliant behaviour. If the government distrusts them, tax morale can be undermined.

III. FAIRNESS

Another important factor is the taxpayer's perception of the fairness of his tax burden. For a long time, fairness was considered of no relevance for economic analysis. Aspects of justice and fairness have been discussed by Rawls (1972), Buchanan (1976), Baumol (1986) and Sen (1987). Closely related theories were analysed as, e.g., altruism by Becker (1981), social norms by Opp (1983), Elster (1990) and Coleman (1990) and cognitive dissonance by Schlicht (1984). Empirical researches are rarer than theoretical studies. We find first studies in the context of the analysis of behavioural anomalies (see Thaler 1992, Frey and Eichenberger 1989). The most common type of analysis are natural experiments (see Kahneman, Knetsch and Thaler 1986, Frey and Pommerehne 1993) and laboratory experiments (see, for example, Fehr and Kirchsteiger 1994 and Rabin 1993).

How do we know what is fair and what is not? Binmore (1998) states:

“When a dish in short supply is shared at a polite dinner party, there is seldom any verbal dispute ... If things go well, the dish gets divided without any discussion or intervention by the host. When questioned, everybody will agree that each person should take his fair share ... What is judged to be fair according to our current standards of morality depends on a complex combination of contingent circumstances – such as who is fat and who dislikes cheese. Moreover, if we observe what actually happens, rather than what people say should happen, we will find that it also depends on how each person at the table fits into the social pecking order. Woe betide the poor relative sitting at the table on sufferance in the last century who helped himself to an over-generous portion of his favorite dish” (p. 275).

An unfair tax system could enhance the incentives to rationalise cheating. Different studies analyse the relationship between tax evasion and perceived inequities in tax systems. A number of survey research studies have reported positive correlations between perceptions of fiscal inequity and tax evasion (Spicer 1974, Song and Yarbrough 1978). Social psychology research suggests that a lack of equity in an exchange relationship creates a sense of distress, especially for the victim (see Walster, Walster and Berscheid 1978). Homans (1961) argues that disadvantage is followed by anger, advantage by guilt. Tax evasion may be seen as a reaction to restore equity (for general empirical evidence, see Adams 1965). Spicer and Becker (1980) find in an experiment with fifty-seven students, at the University of Colorado, that the percentage of taxes evaded was the highest among those students who were told that their tax rates were higher than average, and lowest among those told their tax rates were lower than average. However, other experiments (see Webley et al. 1991) could not find such an effect.

Bordignon (1993) introduces fairness as an additional motivation to the evasion decision. He rationalises the ethical norms supporting tax compliance by making them dependent on tax structure, public expenditure and perceived evasion by other taxpayers. According to the approach of Spicer and Lundstedt (1976), taxpayers perceive their relationship with the state not only as a relationship of coercion, but also as one of exchange. Bordignon (1993) assumes that the taxpayer can compute the fair terms of trade between his private consumption and government provision of public good. Taxpayers wish to evade if the terms of trade differ from computed fair terms, in order to re-establish fairness, constrained by the risk of being caught. This approach is able to show that some people do not evade even if it would be in their self-interest to do so. Alm, McClelland and Schulze (1992) suggest that compliance occurs because some individuals value the public goods their tax payments finance. If there is an increase in the amount individuals receive from a given tax payment, their compliance rate increases. Individuals pay taxes to receive government services even when there is no chance to be detected or punished when evading.

Cowell and Gordon (1988) and Falkinger (1988) attempt to explain the links between public expenditure and tax compliance. They introduce a government financed public good in the standard portfolio choice model of tax evasion. Their results imply a converse relationship compared to the empirical research. This modification can explain the observed relation of evasion to the tax rate, but not the reasons why non-evasion is so prevalent. To capture that aspect Gordon (1989) modifies the standard model by including non-pecuniary costs of

evasion. He appeals to the literature on social customs (see Akerlof 1980, Naylor 1989) to provide a motive for the reason why there can be a utility loss by the act of evading. Non-pecuniary or psychic cost increases as evasion increases. The developed model can explain why some taxpayers refuse a favourable evasion gamble. Furthermore, dishonesty is endogenised as reputation cost. Non-pecuniary costs have a dynamic component, varying inversely with the number of individuals having evaded in the previous period. Interestingly, there is a stable interior equilibrium where evaders and honest individuals coexist. However, non-pecuniary costs are exogenous to the analysis so that they can rationalise, but not explain, differences in tax behaviour across consumers or social groups. Myles and Naylor (1996) state that the model of Gordon is a step forward but lies outside the mainstream of the social custom literature because psychic costs depend on the extent of evasion. They see no reason why such a relation should hold. They argue that if the psychic cost is due to the shame at prosecution then the extent of evasion is irrelevant, or if it is due to the fear of detection then it should be dependent on the detection probability rather than the extent of evasion. Based on the social custom literature where it is accepted that once a social custom is broken, all utility from it is lost, Myles and Naylor (1996) suggest a model in which a social custom utility is derived when taxes are paid honestly, but is lost when evasion is undertaken. In their model, taxpayers face a choice between evading or not. If a taxpayer chooses evasion, the standard model of tax evasion becomes operative. The intention of Myles and Naylor is to combine social customs and social conformity with the standard model of tax evasion as a choice with risk.

Cowell (1992) shows that the economic analysis can come to the same results as psychological research if forms of personalised inequity are incorporated in the economic model. Taxpayers will reduce tax evasion when perceiving equity. Falkinger (1995) has pointed out concrete economic situations in which individuals reduce evasion if the socio-economic system is considered to be relatively equal and fair. The fairness of a system a person lives in may result in bad reputation for evaders if people consider evasion to be blameworthy, so that risk aversion will increase with perceived equity. Falkinger uses the notion “equity” for the perceived exchange relationship between taxpayers and government. He argues that risk aversion increases with equity, if the value of consumption characteristics, produced by the supplied good, increases. This brings us to the next section where we analyse the relationship between government and taxpayer.

IV. TAXPAYER AND GOVERNMENT

A third topic of moral and social influence is the degree of satisfaction taxpayers have with the government. This topic is strongly correlated with aspects of Section III, especially with regard to the concept of procedural fairness. We find this concept in the regulatory literature, in the literature on disputes and civilians' encounters and institutional analysis, where the relationship between taxpayer and government is modelled as an implicit contract. Positive actions by the state are intended to increase taxpayers' positive attitudes and commitment to the tax system and tax-payment and thus compliant behaviour (e.g., Smith 1992, Smith and Stalans 1991). One of the most important social psychological reasons for expecting co-operation is reciprocation (see Gouldner 1960, Axelrod 1984, Cialdini 1984, Regan 1971). We distinguish between positive and negative reciprocity. Positive reciprocity is the impulse to be kind to those who have been kind to us. On the other hand *an eye for an eye, a tooth for a tooth* is a principal example of negative reciprocity (Fehr and Gächter 1997). Positive behaviour of the state toward taxpayers will increase the likelihood of compliance. As Smith (1992) argues, cycles of antagonism between the tax administration and the taxpayer might first be broken up by a positive concession of the administrator⁶. Taxpayers are more inclined to comply to the law if the exchange between the paid tax and the performed government services are found to be equitable. Frey and Holler (1998) argue that an increase in deterrence disrupts such a balance based on reciprocity for honest taxpayers. This feeling gets stronger when taxpayers, who consider themselves to pay fair dues, are audited and fined. The balance will also be disrupted when they notice that other taxpayers who are violating the tax law do not get punished.

Tyler's research (1990a, 1990b, 1997) provides support for the importance of legitimacy and allegiance to authority in compliance decisions. The way people are treated by the authorities affects their evaluations of authorities and their willingness to co-operate (see, e.g., Lind and Tyler 1988, Tyler, Casper and Fisher 1989, Tyler and McGraw 1986). Tyler (1997) argues that understanding what people want in a legal procedure helps to explain public dissatisfaction with the law and points towards directions for building public support

⁶ The incentive of enforcement agents to discover violation have not been examined in this article. Polinsky and Shavell (2000) argue that it is an important topic for two reasons: First, the incentive of enforcement agents to discover violations is affected by the structure of their payments. Second, it is possible that enforcement agents are corrupt and might demand payments in exchange for not reporting violations (see, for example, Becker and Stigler 1974, Polinsky and Shavell 1999). The standard models of optimal tax systems assume benevolent bureaucrats, without any thought of using the tax system for their own advantage. Some economic theorists have taken note of the aspect of corruption (see, for example, Chander and Wilde 1992, Chu 1990 and Virmani 1987).

for the law in the future. He proposes to create a moral climate which associates various forms of property law with public morality. To do so, a better understanding of public morality is needed to comprehend what the public views as fair and unfair. This leads to the argument that taxpayers who they are treated fairly and respectfully by the tax authorities, tend to cooperate better. But the question remains how these effects occur. Is personal experience more significant than second-hand information?

Survey findings of Yankelovich, Skelly and White (1984) suggest that there may be a problem with Internal Revenue Service (IRS) status as a credible authority. Only a small majority of 58% of the public agrees that the IRS and its staff are “expert/knowledgeable”, while a large minority of 37% does not. The same results are found for the perceived trustworthiness (59% versus 38%). There seems to be a problem of credibility. This problem appears to stem from the IRS’s association with a tax system, the majority of the public considers as complicated and unfair. Complexity leads to public perception of errors and inconsistencies among IRS personnel in dealing with the public. It also may allow for various tax-loopholes that contribute to the view of a biased and unfair tax system.

Spicer and Lundtstedt (1978) as well as Smith (1992) hypothesise that taxpayers will feel cheated if they believe that their tax burden is not spent well. Smith (1992) analyses the 1987 Taxpayer Opinion Survey in order to study positive incentives which increase citizens’ normative commitment to tax compliance. He calls attention to aspects of reciprocity, legitimacy, and procedural fairness for tax compliance and finds that responsive services and procedural fairness are effective positive incentives to increase the commitment to tax compliance. Alm, Jackson and McKee (1992) use experiments to test this idea. What they find is a greater willingness to comply, when participants perceive that they will receive benefits from a public good funded by the taxes collected. Another examination of the role of taxpayers’ satisfaction with the government was done by Webley et al. (1991). They found that those participants whose responses to a survey were taken several months after the experiment indicated alienation from the government or a negative attitude towards laws and were significantly more likely to have engaged in evasion during the experiments.

To deal with this on a theoretical basis, Pommerehne, Hart and Frey (1994) used a dynamic, recursive analysis of the relationship between government public good provision, government waste, fairness considerations and taxpayer compliance. The message in their simulation is the need of adjusting the output of the political sector to people’s needs. They conclude:

“The less severe the principal agent problems due to appropriate choice of political framework, the better the outlook for survival of the system and the better the performance of the political system under conditions of sustainability” (p. 66).

They further state that tax payments are higher and the performance might be better in a direct than in a representative democracy.

The importance of the institutional aspect for the extent of tax morale has been shown by Pommerehne and Weck-Hannemann (1996). They used Switzerland as a suitable test because the various cantons have different degrees of political participation possibilities, and due to strong fiscal decentralisation considerable variance in the potential determinants of tax evasion⁷. They hypothesised that the more extended political participation possibilities in form of citizens’ meetings (obligatory and optional referenda and initiatives), the higher tax morale and so c.p. tax compliance. Using a cross section/time series multiple regression they find that in cantons with a high degree of direct political control, tax morale is higher. In those cantons tax evasion is – *ceteris paribus* – about SFr 1500 lower as the average of the cantons without such direct influence. Feld and Kirchgässner (2000) pointed out that these results could be seen as an evidence for higher satisfaction⁸ among citizens and therefore for greater efficiency for the provision of public services. The strong link between tax prices, public services and higher tax morale in direct democracy indicates that citizens in direct democracies feel more responsible for their community. Feld and Kirchgässner see this as an indirect evidence for the opinion that self-interested preferences can partially be reversed in the referendum discourse towards the common interest of the community.

Generalising the empirical evidence, Frey (1997) notes that there are two kinds of tax systems which can be compared. The first is based on the premise that citizens are generally responsible persons. This presupposes that citizens are prepared to pay a fair share, in order to contribute to the provision of public goods and the redistribution of income by the state, if the process is considered efficient and fair. Tax laws, in such a system, allow citizens to declare their own income and to make generalised deductions. If the tax authorities doubt the declaration’s correctness, they bear the burden of proof. A lack of taxable income is, first of all, attributed to an error on the taxpayer’s side, rather than a result of tax cheating. The second tax system assumes that citizens want to cheat on taxes. As a consequence tax laws

⁷ Stutzer (1999) compiled an index (varying on a continuum from 1 to 6) to measure voters’ possibility to participate in the different cantons.

⁸ Frey and Stutzer (1999, 2000) present evidence that institutions of direct democracy and federalism systematically affect individual well-being. They note that researches in this field underline the importance of a process rather than an outcome-oriented economic policy.

deduct the taxes directly from gross income. Citizens are then charged to claim back from the government. It is up to the citizens to prove that there are incorrect deductions. Important reactions to such distrustful public laws are tax evasion or efforts to minimise the tax burden by illegal activities. In this case the interaction between individuals and government is characterised by high transaction costs and low productivity. These empirical results suggest that the standard economic approach to tax evasion should be extended by integrating institutions. Pommerehne and Weck-Hannemann (1996) perceive:

“Only when the interaction between citizens and government is fully accounted for and the often-cited aspects of morale are endogenised, can the model provide a proper base for tax compliance policies, possibly by revealing suitable incentive mechanisms” (p. 168).

In a recently published paper Feld and Frey (2002) analyse how tax authorities treat taxpayers. Using a data set of tax authorities' behaviour (26 cantonal tax authorities), they find that tax authorities of cantons with more direct participation rights, compared to cantons with less direct democracy, treat taxpayers more respectfully and are less suspicious if taxpayers report too low incomes⁹. On the other hand, not submitted tax declarations are more heavily fined¹⁰. This empirical evidence indicates the importance of institutional differences (here political participation rights) for explaining the relationship between taxpayers and tax authorities which influences tax morale.

V. CONCLUSIONS

Although a significant body of research has already been accumulated concerning tax compliance and tax morale, there are several topics that can merit further development. The main purpose of this article is to present the work that has been done in analysing tax compliance and tax morale in a systematic and comprehensive way, focusing on three important topics: moral sentiments, fairness and the relationship between taxpayer and government. It can also be seen as an attempt to describe the research that tries to incorporate non-economic factors into the economic analysis of tax compliance. Tax compliance is not

⁹ Feld and Frey argue: “Nobody is perfect, and to cheat a little bit on taxes is a common and minor human weakness and should be considered as such. Such minor violations should not be interpreted as an action intended to breach the psychological contract” (pp. 95-96).

¹⁰ This is important to protect honest taxpayers from crowding out tax morale.

just a function of opportunity, tax rates, probability of detection and so on but of each individual's willingness to comply shaped by tax morale. This means that if tax morale is favourable tax compliance will be relatively high.

This survey has shown that for future analysis of tax morale it can be fruitful to work with a model systematically integrating ideas borrowed from other social sciences. An extension of the economic model of man opens a new working instrument, without losing the main advantages of economic theory, its simpleness and robustness. Frey (1997) proposes the *Homo Oeconomicus Maturus*, endowed with a more refined motivation structure.

If we analyse tax morale and tax compliance we have problems to find data in adequate quality. Experimental techniques could probably provide a good instrument to get new insights. Section II has also shown us that some points remain quite unexplained: i) how do social norms arise in the first place and ii) how can these norms be changed by deliberate government policies? One possibility is to pay more attention to the institutional framework of tax morale. Experimental studies help also isolate the impact of fairness motives. As Fehr and Schmidt (2000) state:

“In experiments real subjects make decisions with real monetary consequences in carefully controlled laboratory settings” (p. 4).

Analysing Section III and IV we can implement another agent besides the *Homo Oeconomicus Maturus*, the *Homo Reciprocans*, which according to Bowles et al. (1997) is:

“neither the selfless altruist of utopian theory, nor the selfish hedonist of neoclassical economics. Rather, he is a conditional cooperator whose penchant for reciprocity can be elicited under the proper circumstances” (p. 5).

Studies show that reciprocity plays an important role as explained first by David Hume (1978). Positive reciprocity signifies that positive behaviour by the state towards taxpayers can increase the likelihood of compliance. On the other hand, tax evasion or tax avoidance can be a reaction of negative reciprocity. Accordingly, the influence of the institutional environment on the dominance of positive and negative reciprocity is an important question. As Fehr and Gächter (1997) state:

“The influence of one type on the behaviour of the other is no “one-way street”. Ultimately, the institutional environment is decisive, too” (p. 4).

Empirical evidence in the tax compliance analysis shows the need of adjusting the output of the political sector to the needs of the population to support tax morale. Rawls (1972) says that we have a

“fundamental natural duty ... to comply with just institutions” (p. 115).

It is clear that governments all over the world wish to increase tax morale and tax compliance. Government policy should take the significance of tax morale into account. The considered topics demonstrate that, despite the many improvements and fascinating insights, much future research can be done for better understanding of tax morale.

REFERENCES

- Adams, J. S. (1965). Inequity in Social Exchange, in: L. Berkowitz (ed.), *Advances in Experimental Social Psychology*. New York: Academic Press: 167-299.
- Aitken, S. and L. Bonneville (1980). A General Taxpayer Opinion Survey. Washington, DC: Internal Revenue Service.
- Akerlof, G. A. (1980). A Theory of Social Custom of Which Unemployment May Be One Consequence, *Quarterly Journal of Economics*. 94: 749-795.
- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Alm, J., B. R. Jackson and M. McKee (1992). Estimating the Determinants of Taxpayer Compliance with Experimental Data, *National Tax Journal*. 45: 107-115.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Alm, J., I. Sanchez and A. De Juan (1995). Economic and Noneconomic Factors in Tax Compliance, *KYKLOS*. 48: 3-18.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Axelrod, R. (1984). *The Evolution of Cooperation*. New York: Basic Books.
- Baumol, W. J. (1986). *Superfairness, Applications and Theory*. Cambridge: MIT Press.
- Beccaria, C. (1767/1995). *On Crimes and Punishment*. New York: Cambridge University Press.
- Becker, G. S. (1968). Crime and Punishment: An Economic Approach, *Journal of Political Economy*. 76: 169-217.
- Becker, G. S. (1976). *The Economic Approach to Human Behavior*. Chicago: Chicago University Press.
- Becker, G. S. (1981). *A Treatise on the Family*. Cambridge: Harvard University Press.
- Becker, G. S. and G. J. Stigler (1974). Law Enforcement, Malfeasance, and Compensation of Enforcers, *Journal of Legal Studies*. 3: 1-18.
- Bentham, J. (1789/1973). *An Introduction to the Principles of Morals and Legislation*. New York: Anchor Books.
- Binmore, K. G. (1998). The Evolution of Fairness Norms, *Rationality and Society*. 10: 275-301.
- Bordignon, M. (1993). A Fairness Approach to Income Tax Evasion, *Journal of Public Economic*. 52: 345-362.
- Bowles, S., R. Boyd, E. Fehr and Herbert Gintis (1997). Homo Reciprocans: A Research Initiative on the Origins, Dimensions, and Policy Implications of Reciprocal Fairness, unpublished paper.

- Buchanan, J. M. (1976). A Hobbesian Interpretation of the Rawlsian Difference Principle, *KYKLOS*. 19: 5-25.
- Chander, P. and L. Wilde (1992). Corruption in Tax Administration, *Journal of Public Economics*. 49: 333-349.
- Chu, C. (1990). Income Tax Evasion With Venal Tax Officials – The Case of Developing Countries, *Public Finance*. 45: 392-408.
- Chung, P. (1976). On Complaints about High Taxes, an Analytical Note, *Public Finance*. 31: 36-47.
- Cialdini, R. B. (1984). *Influence: The Psychology of Modern Persuasion*. New York: Quill.
- Coleman, J. S. (1990). *Foundations of Social Theory*. Cambridge: Harvard University Press.
- Cowell, F. A. (1990). *Cheating the Government. The Economics of Evasion*. Cambridge: MIT Press.
- Cowell, F. A. (1992). Tax Evasion and Inequity, *Journal of Economic Psychology*. 13: 521-543.
- Cowell, F. A. und J. P. F. Gordon (1988). Unwillingness to Pay: Tax Evasion and Public Good Provision, *Journal of Public Economics*. 36: 305-321.
- De Juan, A., M. A. Lasheras and R Mayo (1993). Voluntary Compliance and Behavior of Spanish Taxpayers, Instituto de Estudios Fiscales, Madrid, Spain.
- Downs, A. (1957). *An Economic Theory of Democracy*. Reading, MA: Addison-Wesley.
- Elffers, H., (1991). *Income Tax Evasion: Theory and Measurement*. Amsterdam: Kluwer.
- Elster, J. (1989). *The Cement of Society: A Study of Social Order*. Cambridge: Cambridge University Press.
- Erard, B. and J. S. Feinstein (1994). The Role of Moral Sentiments and Audit Perceptions in Tax Compliance, *Public Finance*. 49: 70-89.
- Falkinger, J. (1988). Tax Evasion and Equity: A Theoretical Analysis, *Public Finance*. 43: 388-395.
- Falkinger, J. (1995). Tax Evasion, Consumption of Public Goods and Fairness, *Journal of Economic Psychology*. 16: 63-72.
- Fehr, E. and G. Kirchsteiger (1994). Insider Power, Wage Discrimination, and Fairness, *Economic Journal*. 104: 571-583.
- Fehr, E. and S. Gächter (1997). Reciprocity and Economics. The Economic Implications of Homo Reciprocans, Working Paper, University of Zurich.
- Fehr, E. and K. M. Schmidt (2000). Theories of Fairness and Reciprocity – Evidence and Economic Applications, CESifo Working Paper Series No. 403.
- Feld, L. P. and B. S. Frey (2002). Trust Breeds Trust: How Taxpayers are Treated, *Economics of Governance*. 3: 87-99.
- Feld L. P. and G. Kirchgässner (2000). Direct Democracy, Political Culture, and the Outcome of Economic Policy: A Report on the Swiss Experience, *European Journal of Political Economy*. 16: 287-306.
- Fiorina, M. P. (1981). *Retrospective Voting in American National Elections*. New Haven: Yale.

- Frey, B. S. (1997). *Not Just for Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.
- Frey, B. S. (1999). *Economics as a Science of Human Behaviour*. Boston/Dordrecht/London: Kluwer Academic Publishers.
- Frey, B. S. (1993). From Economic Imperialism to Social Science Inspiration, *Public Choice*. 77: 95-105.
- Frey, B. S. and K. Foppa (1986). Human Behaviour: Possibilities Explain Action, *Journal of Economic Psychology*. 7: 137-160.
- Frey, B. S. and R. Eichenberger (1989). Anomalies and Institutions, *Journal of Institutional and Theoretical Economics*. 145: 423-437.
- Frey, B. S. and W. W. Pommerehne (1993). On the Fairness of Pricing – An Empirical Survey Among the General Population, *Journal of Economic Behavior and Organization*. 145: 423-437.
- Frey, B. S. and M. J. Holler (1998). Tax Compliance Policy Reconsidered, *Homo Oeconomicus*. 15: 27-44.
- Frey, B. S. and A. Stutzer (1999). Measuring Preferences by Subjective Well-Being, *Journal of Institutional and Theoretical Economics*. 155: 755-778.
- Frey, B. S. and A. Stutzer (2000). Maximising Happiness?, *German Economic Review*. 1: 145-167.
- Frey, B. S. and R. Jegen (2001). Motivation Crowding Theory, *Journal of Economic Surveys*. 15: 589-611.
- Gambetta, D. (1988). *Trust, Making and Breaking Cooperative Relations*. Oxford and New York: Blackwell.
- Gordon, J. P. F. (1989). Individual Morality and Reputation Costs as Deterrents to Tax Evasion, *European Economic Review*. 33: 797-805.
- Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement, *American Sociological Review*. 25: 161-178.
- Graetz, M. J. and L. L. Wilde (1985). The Economics of Tax Compliance: Facts and Fantasy, *National Tax Journal*. 38: 355-363.
- Grasmick, H. G. and R. J. Bursick (1990). Conscience, Significant Others, and Rational Choice: Extending the Deterrence Model, *Law and Society Review*. 24: 837-861.
- Groenland, E. A. G. and G. M. van Veldhoven (1983). Tax Evasion Behavior: A Psychological Framework, *Journal of Economic Psychology*. 3: 129-144.
- Hardin, R. (1993). The Street-Level Epistemology of Trust, *Politics and Society*. 21: 505-531.
- Harris, L. and Associates, Inc (1988). 1987 Taxpayer Opinion Survey. Conducted for the U.S. Internal Revenue Service, Internal Revenue Service Document 7292, Washington, DC.
- Hirschman, A. O. (1965). Obstacles to Development: A Classification and a Quasi-Vanishing Act, *Economic Development and Cultural Change*. 13: 385-393.
- Hirshleifer, J. (1985). The Expanding Domain of Economics, *American Economic Review*. 75: 53-68.

- Homans, G. C. (1961). *Social Behavior: its Elementary Form*. New York: Harcourt, Brace and World.
- Hume, D. (1969). *A Treatise of Human Nature*. London: Penguin.
- Kahneman, D., J. Knetsch and R. Thaler (1986). Fairness as a Constraint on Profit Seeking: Entitlements in the Market, *American Economic Review*. 76: 728-741.
- Kahneman, D. and A. Tversky (1979). Prospect Theory: An Analysis of Decision under Risk, *Econometrica*. 47: 263-291.
- Kahneman, D., P. Slovic and A. Tversky (eds.) (1982). *Judgement Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.
- Kantona, G. (1975). *Psychological Economics*. Amsterdam: Elsevier.
- Kelman, H. (1965). Manipulation of Human Behaviour: An Ethical Dilemma for the Social Scientist, *Journal of Social Issues*. 21: 31-46.
- Knack, S. and P. Keefer (1997). Does Social Capital Have an Economic Payoff? A Cross-Country Investigation, *Quarterly Journal of Economics*. 4: 1251-1288.
- Knight J. (1998). The Bases of Cooperation: Social Norms and the Rule of Law, *Journal of Institutional and Theoretical Economics*. 154: 757-763.
- Laffont, J. J. (1975). Macroeconomic Constraints, Economic Efficiency and Ethics: an Introduction to Kantian Economics, *Economica*. 42: 430-437.
- Lewis, A. (1979). An Empirical Assessment of Tax Mentality, *Public Finance*. 2: 245-257.
- Lewis, H. B. (1971). *Shame and Guilt in Neurosis*. New York: International University Press.
- Lind, E. A. and T. R. Tyler (1988). *The Social Psychology of Procedural Justice*. New York: Plenum Press.
- Montesquieu (1748/1977). *The Spirit of the Laws*. Berkeley: University California Press.
- Myles, G. D. and R. A. Naylor (1996). A Model of Tax Evasion with Group Conformity and Social Custom, *European Journal of Political Economy*. 12: 49-66.
- Naylor, R. A. (1989). Strikes, Free Riders and Social Customs, *Quarterly Journal of Economics*. 104: 771-805.
- Opp, K.-D. (1983). *Die Entstehung sozialer Normen*. Ein Integrationsversuch soziologischer, sozialpsychologischer und ökonomischer Erklärungen. Tübingen: Mohr (Siebeck).
- Payne, J. W., J. R. Bettman and E. J. Johnson (1993). *The Adaptive Decision Maker*. New York: Cambridge University Press.
- Polinsky, M. A. and S. Shavell (1999). Corruption and Optimal Law Enforcement, Working Paper 171, John M. Olin Program in Law and Economics, Stanford Law School.
- Polinsky, M. A. and S. Shavell (2000). The Economic Theory of Public Enforcement of Law, *Journal of Economic Literature*. 38: 45-76.
- Pommerehne, W. W. (1985). Was wissen wir eigentlich über Steuerhinterziehung?, *Rivista Internazionale di Scienze Economiche e Commerciale*. 32: 1155-1186.

- Pommerehne, W. W. and B. S. Frey (1993). The Effects of Tax Administration on Tax Morale, unpublished manuscript, Department of Economics, University of the Saar.
- Pommerehne, W. W. and H. Weck-Hannemann (1996). Tax Rates, Tax Administration and Income Tax Evasion in Switzerland, *Public Choice*. 88: 161-170.
- Pommerehne, W. W. , A. Hart and B. S. Frey (1994). Tax Morale, Tax Evasion and the Choice of Policy Instruments in Different Political Systems, *Public Finance*. 49 (Supplement): 52-69.
- Popkin, S. (1991). *The Reasoning Voter: Communication and Persuasion in Presidential Campaigns*. Chicago: University of Chicago Press.
- Posner, R. A. (1997). Social Norms and the Law: An Economic Approach, *American Economic Review: Papers and Proceedings*. 87: 365-369.
- Putnam, R. (1993). *Making Democracy Work*. Princeton: Princeton University Press.
- Rabin, M. (1993). Incorporating Fairness Into Game Theory and Economics, *American Economic Review*. 83: 1281-1302.
- Rawls, J. (1971). *A Theory of Justice*. Oxford: Oxford University Press.
- Regan, D. T. (1971). Effects of a Favor and Liking on Compliance, *Journal of Experimental Social Psychology*. 7: 627-639.
- Schlicht, E. (1984). Cognitive Dissonance in Economics, in: H. Todt (ed.), *Normengeleitetes Verhalten in den Sozialwissenschaften*. Berlin: Duncker & Humblot: 61-81.
- Schmölders, G. (1951/1952). Finanzpsychologie, *Finanzarchiv*. 13: 1-36.
- Schmölders, G. (1960). *Das Irrationale in der öffentlichen Finanzwissenschaft*. Hamburg: Rowolt.
- Schmölders, G. (1962). *Volkswirtschaftslehre und Psychologie*. Berlin: Reinbek.
- Schmölders, G. (1970a). Survey Research in Public Finance: A Behavioral Approach to Fiscal Theory, *Public Finance*. 25: 300-306.
- Schmölders, G. (1970b). *Finanz- und Steuerpsychologie*. Hamburg: Rowolt.
- Scholz, J. T. and M. Lubell (1998). Adaptive Political Attitudes: Duty, Trust and Fear as Monitors of Tax Policy, *American Journal of Political Science*. 42: 398-417.
- Scholz, J. T. and N. Pinney (1995). Duty, Fear, and Tax Compliance: The Heuristic Basis of Citizenship Behavior, *American Journal of Political Science*. 39: 490-512.
- Sen, A. K. (1977). Rational Fools: A Critique of the Behavioral Foundations of Economic Theory, *Philosophy and Public Affairs*. 6: 317-344.
- Sen, A. K. (1987). *On Ethics and Economics*. Oxford: Blackwell.
- Slemrod, J. (ed.) (1992). *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press.
- Slemrod, J. (1998). On Voluntary Compliance, Voluntary Taxes, and Social Capital, *National Tax Journal*. 51: 485-492.

- Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press: 223-258.
- Smith, K. W. and L. J. Stalans (1991). Encouraging Tax Compliance with Positive Incentives: A Conceptual Framework and Research Directions, *Law and Society Review*. 13: 35-53.
- Song, Y. and Y. E. Yarbrough (1978). Tax Ethics and Taxpayer Attitudes: A Survey, *Public Administration Review*. 38: 442-457.
- Spicer, M. W. (1974). A Behavioral Model of Income Tax Evasion, Dissertation, Ohio State University.
- Spice, M. W. (1986). Civilisation at a Discount: The Problem of Tax Evasion, *Journal of Public Economics*. 46: 13-20.
- Spicer, M. W. and L. A. Becker (1980). Fiscal Inequity and Tax Evasion: An Experimental Approach, *National Tax Journal*. 33: 171-175.
- Spicer, M. W. and S. B. Lundstedt (1976). Understanding Tax Evasion, *Public Finance*. 31: 295-304.
- Stutzer, A. (1999). Demokratieindizes für die Kantone der Schweiz, Working Paper No. 23. Institute for Empirical Research in Economics, University of Zurich.
- Sugden, R., (1984). Reciprocity: the Supply of Public Goods through Voluntary Contributions, *Economic Journal*. 94: 772-787.
- Thaler, R. H. (1992). *The Winner's Curse. Paradoxes and Anomalies of Economic Life*. New York: Free Press.
- Tyler, T. R. (1990a). Justice, Self-Interest, and the Legitimacy of Legal and Political Authority, in: J. J. Mansbridge (ed.), *Beyond Self-Interest*. Chicago: University of Chicago Press: 171-179.
- Tyler, T. R. (1990b). *Why People Obey the Law*. New Haven: Yale.
- Tyler, T. R. (1997). Procedural Fairness and Compliance with the Law, *Swiss Journal of Economics and Statistics*. 133: 219-240.
- Tyler, T. R., J. D. Casper and B. Fisher (1989). Maintaining Allegiance Toward Political Authorities: The Role of Prior Attitudes and the Use of Fair Procedures, *American Journal of Political Science*. 33: 629-652.
- Tyler, T. R. and K. M. McGraw (1986). Ideology and the Interpretation of Personal Experience: Procedural Justice and Political Quiescence, *Journal of Social Issues*. 42: 115-128.
- Virmani, A. (1987). Tax Evasion, Corruption and Administration: Monitoring the People's Agents Under Symmetric Dishonesty, mimeo, the World Bank, Washington D. C.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.
- Walster, E., G. W. Walster and E. Berscheid (1978). *Equity: Theory and Research*. Boston: Allyn and Bacon.

Webley, P., H. Robben, H. Elffers and D. Hessing (1991). *Tax Evasion: An Experimental Approach*.

Cambridge: Cambridge University Press.

Yankelovich, Skelly and White, Inc. (1984). *Taxpayer Attitudes Survey: Final Report, Public Opinion*

Survey Prepared for the Public Affairs Division, Internal Revenue Service, New York.

CHAPTER III

SPEAKING TO THEORISTS AND SEARCHING FOR FACTS:

TAX MORALE AND TAX COMPLIANCE IN EXPERIMENTS*

ABSTRACT

A significant body of research has been accumulated concerning tax morale and tax compliance. This paper takes a stroll through the experimental findings, focusing on personal income. After briefly discussing the traditional topic of deterrence the main focus is on the social and institutional factors which until now have received only limited attention.

JEL classification: H260, C900

Keywords: tax morale, tax compliance, tax evasion, experiments

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I. INTRODUCTION

Tax compliance behaviour can be studied theoretically using field data and laboratory experiments. Laboratory experiments have the advantage that tax reporting institutions (enforcement effort, tax rate, income level) can be controlled¹. Furthermore, measurements of tax evasion and tax compliance involve some problems. It is difficult to obtain information about tax compliance behaviour. Cowell (1991) states:

“Data from official investigation are hardly ever available and data from other sources may be suspect: if you could directly observe and measure a hidden activity, then presumably it could not really have been properly hidden in the first place” (p. 123).

Even if data about tax evaders could be obtained, tax evaders’ behaviour could be affected by specific circumstances, which are difficult to control. An experimental approach circumvents the problem of obtaining honest responses on illegal behaviour. Researchers can use their own data obtained from experiments (Andreoni, Erard and Feinstein 1998).

But a few problems still remain². It is often argued that a shortcoming lies in the artificiality of the laboratory setting which makes it difficult to generalise results into real world (Spicer and Thomas 1982). However, Alm, Jackson and McKee (1992a) argue that:

“there is an extensive – and growing – literature that argues convincingly that experimental results can contribute significantly to policy debates, as long as some conditions are met: the payoffs, and the experimental setting must capture the essential properties of the naturally occurring setting that is the object of investigation. Laboratory methods may offer the only opportunity to investigate the behavioral responses to policy changes” (p. 325).

So in the experimental work it is essential to operationalise the important variables with real-world values to reduce artificiality. Early works in tax compliance did not pay enough attention to this point. According to Aronson and Carlsmith (1968) “experimental realism”

¹ As Wilde (1980) points out, the objective behind a laboratory experiment is to create a “microeconomic environment in the laboratory where adequate control can be maintained and accurate measurement of relevant variables guaranteed” (p. 138).

² See Section IV. Smith (1982, pp. 931 ff.) describes sufficient conditions for an experiment. He states that the control over preferences is the most significant element distinguishing this method from other methods. The following conditions must be established: i) non-satiation: subjects must prefer more to less, ii) saliency: subjects must recognise that actions affect outcomes, thus the received rewards have to be related to the decision, iii) reward dominance: the reward must set off subjective costs or benefits, an amount comparable to the outside earning and iv) privacy: subjects must only know her/his own payoffs.

can be achieved if participants who are involved in it take it seriously and if the experiment evokes processes as in reality.

Roth (1995a) states:

“Experimental evidence appears regularly in the major economics journals, and it has begun to be reflected in the work of economists who do not themselves do experiments – both in research and in teaching” (p. 3).

Tax compliance experiments intend to replicate the structure of a voluntary income reporting. Subjects receive income and pay taxes on the reported income. The tax administration is simulated by defining a probability of audit and tax penalty on tax evasion. The experiments in tax compliance and tax morale research which will be presented can be divided into two categories according to Roth’s (1995a, p. 22) general definition: i) “Speaking to Theorists” and ii) “Searching for Facts”. “Speaking to Theorists” includes experiments designed to test well articulated theories which then feed back into the theoretical literature. As Roth argues, such experiments are part of a dialogue between experimenters and theorists. “Searching for Facts” involves experiments analysing the effects of variables which existing theory has little to say about. Such experiments are motivated by earlier experiments. Experimenters are thus in a dialogue with one another, so that facts begin to accumulate.

After this introduction, Section II focuses upon the traditional tax compliance topics such as threat of detection and punishment and the level of tax rates. Section III and Section IV are the core of the paper. Section III analyses the role of social factors and Section IV the relevance of institutions. Both topics until now have had only limited attention. Therefore, the purpose of this survey is to examine the impact of these alternative factors on tax morale and tax compliance focusing on experiments.

II. TRADITIONAL FOCUS: ECONOMIC AND DETERRENCE VARIABLES

The tax rate, the audit probability and the fine rate seem to be important policy variables. First of all a deeper look into the pioneering simulation study of Friedland, Maital and Rutenberg (1978) is presented.

Friedland, Maital and Rutenberg (1978) conducted an experiment with 15 Israeli undergraduate psychology students. They attempted to find out the effects of fines and audits

on tax evasion behaviour using different tax rates. They found that large fines were more effective deterrents than frequent audits. An increase of the tax rate from 25 percent to 50 percent on the other hand leads to an increase of the probability of underreporting income and to an extension of underreporting income. In rounds where the random check was five out of fifteen and the fine 3 times the sum evaded, tax compliance was less high than in rounds with a random check of one out of fifteen and a fine magnitude of 15 times the sum evaded. The empirical results suggest that the state should use the instrument of fines instead of controls. However, the work of Friedland et al. has some shortcomings, which are also found in other early studies. Subjects were instructed as follows: “Your objective is to maximize your net income (gross income less tax less fines)” (p. 110). The aim of such an instruction is to exclude moral considerations. However, involving the participants in a self-contained “game” might frame participants to follow behavioural rules which are different from those followed in the actual tax declaration process. Thus, it might be useful to tell the subjects not to maximise net income but just to complete their tax return, giving information about the procedures. The fine magnitudes (3 times and 15 times the evaded sum) is too high, compared to reality terms. Furthermore, it should be noted that only 15 students participated in the experiment. A small amount of participants reduces the experiment validation. In a small sample minor mistakes may have a substantial influence on the results. Rubinstein (2001) points out:

“I suspect that the uncertainty surrounding such mistakes is of higher magnitude than that which is put into routinely calculated “significance measures” and render many of the “significance” calculations meaningless” (p. 625).

Thus, small experiments should be replicated and experiments should systematically vary the number of participants as one of the treatments.

New works intend to simulate endogenous audit selection rules (see Alm, Cronshaw and McKee 1993, Alm and McKee 2000). Tax agencies do not select tax returns randomly for audit but use instead information from the returns to determine audit³. So the probability of audit is endogenous, depending on the behaviour of taxpayers and tax agencies. There are different ways to simulate endogenous audit selection rules. For example, taxpayers known to have been noncompliant in the past will be audited more frequently in the future or are faced

³ Internal Revenue Service (IRS), e.g., uses the Discriminant Index Function (DIF, formula) based on items reported on current tax returns in its selection of returns (Alm, Cronshaw and McKee 1993). Other countries follow similar practice (Roth, Scholz and Witte 1989).

with the situation that tax agency goes back in time to previous periods' declarations. A third possibility is a cutoff rule which means that a taxpayer who reports less than some cutoff level of income will be audited with certainty. Experimental results indicate that such endogenous audit rules are able to generate significantly greater compliance than random audit rules. Endogenous audit rules are also able to smooth the level of tax collection over time by reducing the variation in individual compliance rate (Alm, Cronshaw and McKee 1993). Alm and McKee (2000) implemented a treatment where subjects were permitted to discuss their strategies with each others prior to beginning the experiment. This mimics the provision of information within a cohort via tax professionals or publications. According to their findings they argue that in the face of communication, the addition of a random audit rule is useful to the tax authority. Thus, they propose the combination of endogenous audit rules and random audits to generate substantially more compliance than would an endogenous audit rule alone.

Slemrod, Blumenthal and Christian (2001) used a controlled field experiment in Minnesota to analyse taxpayer response to an increased probability of audit. 1724 randomly selected taxpayers were informed by letter that the return they were about to file (state and federal) would be closely examined. They used 2 years' income return data from the same taxpayers which enabled them to compare changes in reported income, deductions and tax liability between those taxpayers who received the treatments and similar groups of taxpayers who were not subject to any treatment. They found that the treatment effect varies depending on the income. In the treatment group, low and middle income taxpayers increased their reported income between 1993 and 1994 relative to the control group. The effect was much stronger for those with a higher opportunity to evade. In 1994, the reported income of high income taxpayers fell sharply in relation to the control group. The perception that tax evasion will not be detected and punished automatically, according to the authors could be a reason for these results and thus they propose that

“heightened audit threat should be carried out simultaneously with a rethinking of how the audits themselves are carried out” (p. 482).

As the authors state, the analysis had a comparably small sample size of high-income taxpayers, which reduces the inference to be drawn. Follow-up experiments should start the field experiment at the beginning of the tax year to analyse avoidance behaviour as well. Such field experiments are a great enrichment in the tax compliance literature. One of the main advantages is that they are implemented by tax authorities and not experimenters, and thereby less artificial.

Generally, early tax compliance experiments tried to test the relevance of the well articulated expected utility theory, influenced by the model of Allingham and Sandmo (1972) and other authors as, e.g., Yitzhaki (1974). These models helped to analyse the change in tax compliance as a response to different deterrence policies. However, experiments mostly report a higher level of income reporting than the expected utility model would predict (see Alm 1998). This motivated tax compliance researchers to expand the traditional expected utility theory and to check the relevance of other theories or to implement new experiments focusing on new variables searching for facts without a clear theory. Thus, we find an intensive dialogue between experimenters and theorists and Baldry (1987), for example, states discussing his findings:

“Rather than question the experimental method, these results suggest that it is perhaps the theory which needs revision ... The question asked here is whether simple and reasonable modifications to the basic theory can explain these observations” (p. 377).

Influenced by the work of Kahneman and Tversky (1979), researchers started to analyse whether people systematically misjudge or misapply the low audit probability. Alm, McClelland and Schulze (1992) show that subjects appear to overweight the probability of an audit, so that there is more compliance than expected utility theory would predict. They designed an experiment structure where according to the expected utility theory the single-period dominant strategy for a risk-neutral individual is to report zero income. However, they found a substantial compliance rate. Furthermore, the authors find some evidence that compliance is not always caused by overweighting the audit probability or an extreme risk aversion. They investigated a treatment where there was no chance of detection. The average compliance rate was of 20 percent, with a variation between 5.3 and 35.8 percent across the groups.

Generally, experimental findings show that the direction of the change in tax compliance as a response to different deterrence policies is not always consistent. However, results tend to suggest that a higher audit rate leads to more compliance and that tax compliance is an increasing function of income and a decreasing function of the tax rate. Experiments which only analyse deterrence effects enable the examination of the interaction between taxpayers and the tax administration's policy instruments. However, they omit the interaction among taxpayers (see Alm 1991). Furthermore, early experiments used higher probability and penalty rates than we observe in reality.

Tax compliance experiments were first strongly motivated by theory. The experimental results which indicate a higher compliance rate than predicted strongly influenced economic theory making as it considers now new factors. In the same time it increased the incentive for researchers to let deterrence parameters constant and to analyse the relevance of social and institutional factors as we are going to see in Section III and IV.

III. SOCIAL FACTORS

Tax compliance seems to depend upon numerous factors and is not only affected by deterrence and economic factors. How can, for example, social norms affect compliance? As we are going to see in this section, experiments in recent years have started to analyse such factors and have given new impulse to incorporate these factors in formal theories of compliance. We are going to see that subjects do not respond only to deterrence factors of a tax evasion game, but also to the context provided to them.

The co-operation observed is not specific to the tax compliance literature. Similar results can be found in the literature on ultimatum and bargaining games. Güth, Schmittberger and Schwarz (1982) first introduced the ultimatum bargaining game. Player 1 proposes a division of a fixed sum. Player 2 can either accept or reject, in which case each player receives 0. In such a situation, the perfect equilibrium would predict that player 1 asks and gets almost 100 percent. However, the results observed were different. The average demand of players 1 was of under 70 percent and about 20 percent of the offers were rejected. Ultimatum experiments have shown that in many experiments the modal offer is (50, 50), the mean offer somewhere around (40, 60), and the smaller the offer the higher the probability that the offer is rejected (see Ochs and Roth 1989, Roth 1995b).

Even in dictator games, where player 1 proposes a division of some resource between the two and player 2 cannot reject this proposal, we find some co-operation. The difference between the ultimatum and the dictator game is that player 2 cannot reject this proposal. Thus, players receive whatever player 1 proposes. Forsythe et al. (1994) studied dictator games with and without monetary rewards and found that 62% of the dictators still gave 2\$ or more out of ten to player 2. Fehr and Schmidt (2000) argue that the attempt to explain results in simple games as the Ultimatum Game assuming selfish preferences is misplaced:

“It is difficult to believe that they make systematic mistakes and reject money or reward generous offers although their true preferences would require them not to do so” (p. 10).

Thus, more recent research efforts in tax compliance research increasingly analysed non traditional economic factors such as social norms. Alm, Sanchez and de Juan (1995) argue that

“a government compliance strategy based only on detection and punishment may well be a reasonable starting point but not a good ending point. Instead, what is needed is a multi-faceted approach ... Put differently, explaining tax compliance requires recognizing the myriad factors that motivate individual behavior, factors that go much beyond the standard economics-of-crime approach to include theories of behavior suggested by psychologists, sociologists, and other social scientists. Until this effort is made, it seems unlikely that we will come much closer to unraveling the puzzle of tax compliance” (p. 15).

1. Social Norms

There is a lack of empirical evidence regarding the effects of social norms or social capital. Paldam (2000) states:

“Social capital is a new field, suffering from a great lack of good, reliable data. Both time series and cross-country evidence are missing. In the meantime much speculation is going on ... it is hopefully clear that social capital is a promising concept, which can be operationalized by relatively simple measurement. However, it will take some time and a lot of work has to be done before it is known if social capital can deliver what it promises” (p. 649).

Alm, McClelland and Schulze (1999) argue that there is a social norm of tax compliance affecting individual reporting decisions. They argue furthermore that this social norm can be affected by voting on different aspects of the fiscal system. Their experimental results show that individual compliance behaviour after the vote’s announcement is different from the pre-vote behaviour under the identical fiscal regime. Surprisingly, when raising the level of enforcement is rejected, compliance always falls. The authors believe that such a group decision on enforcement destroys any pre-vote social norm of tax compliance. They argue:

“When the group rejects stricter sanctions, this outcome sends a signal to each individual that others do not wish to enforce the tax laws, that it is now socially acceptable to evade one’s taxes because others will do the same, and that post-vote individual noncompliance is justified by the actions of others” (p. 162).

Furthermore, Alm, McClelland and Schulze (1999) suggest that the social norm of tax compliance can be influenced by group communication. They find that a subject selects a greater level of enforcement after communicating with others. But communication combined with the vote changes the social norm of tax compliance, so that paying taxes becomes the accepted mode of behaviour. Discussion gives the opportunity to clarify benefits and costs from greater enforcement and increases cooperation among group members. As Bohnet and Frey (1994) argue, communication transforms a group decision into a private one. The information requirements can be fulfilled with institutions such as elections that enforce the incentive to produce information. The pre-election process involves individuals in face-to-face⁴ interactions and so induces them to demand information, which clarifies

“the order and ranking of their preferences, to build commensurable scales and to take care of the effect of differences in time and place” (Bohnet and Frey 1994, p. 345).

And Frey and Eichenberger (1999) argue:

“The market is a discovery mechanism. The same could be said about discourse. By talking to one another, people discover the means of fulfilling their preferences. By relating to other people’s positions, they find out where they stand. In economic terms, it could be said that communication changes the production function to fulfil individuals’ preferences” (p. 22).

Bosco and Mittone (1997) conducted an experiment to test the hypotheses whether feelings of collective blame influence the decision to evade taxes and whether the awareness of damaging others by reducing social welfare reduces tax evasion. To test the existence and effectiveness of the moral constraints, one group (collective moral constraints) was informed in advance that the audit process would be public. In another group (subjective moral constraint) a system of partial redistribution of the tax money among the participants was introduced. Participants could dislike the idea that a participant might suffer because of tax evasion, which reduces the

⁴ Experimental studies have shown that face-to-face communication significantly increases cooperation in public good games (see, e.g., Bohnet 1997, Sally 1995).

total yield and so leaves less money for redistribution. The results of their experiment seem to confirm that moral constraint worked as a powerful disincentive to evade. A serious limitation is the nature of their experiment, which was static (only one round). The decision to evade or not is rather a dynamic than a static problem, because taxes are paid regularly every year. To analyse the dynamic process, Mittone (1997) designed a dynamic, repeated experiment. He finds that tax yield redistribution (subjective moral constraint) reduces tax evasion.

Cummings, Martinez-Vazquez and McKee (2001) argue that laboratory experiments have the advantage to hold the tax reporting institutions constant, in order to investigate compliance behaviour across various cultural settings. Thus, it is possible to isolate cultural effects as a factor in tax compliance. For this, the authors used experiments in three different countries (U.S., South Africa, and Botswana) using the same tax reporting setting. The observed difference in tax compliance behaviour can be explained by differences in institutional features and by differences in social norms across those countries. They found that compliance rates vary between the states. It could be argued that differences in the behaviour between the subjects are due to differences in risk attitudes. Therefore, the authors conducted a risk experiment. According to their findings, the observed differences in behaviour are not due to differences in risk attitudes across the pools. The authors state that observed differences in compliance are related to the differences in tax institutions and government behaviour. Alm, Sanchez, and De Juan (1995) find in their experimental results strong evidence for social norms being a very important determinant of compliance. They compared compliance experiments, conducted in Spain and the United States, two countries with different cultures and histories of compliance and found differences in the level of and the change in compliance (response to policy innovations). The authors conclude that societal attitudes toward tax compliance have exerted a significant impact and argue:

“Both sets of results suggest that there may well be different factors at work in the compliance decisions in the two countries. As implied by Frey and Weck-Hannemann (1984), perhaps the tax morality – or the social norm of compliance – differs in the two countries, a difference that becomes evident in behavior under controlled laboratory conditions” (p. 14).

However, there are some problems which arise when conducting a cross-culture experiment. Roth (1995b) points out three main problems (pp. 282- 284):

1. *Experimenter effect*: If different experimenters are involved between the countries, differences arise because of uncontrolled procedural differences or uncontrolled personal differences among the experimenters.
2. *Language effects*: If instructions for the experiment are presented in different languages, systematic differences between countries might be observed because of the way the instructions are translated.
3. *Currency effects*: If subjects are paid in different currencies, systematic differences between countries might be observed because of different incentives the potential payments give to the subjects, or because of the different numerical payment scale.

In both studies it is not really clear why they choose to compare these particular countries. It would be interesting, for example, to do cross-country tax compliance experiments in eastern and western Germany, as Ockenfels (1999) has already done with public good and solidarity experiments (see also Ockenfels and Weimann 1999). As eastern subjects grew up in a socialist planned economy and western subjects in a market-oriented environment, social differences can be compared. This would help to control for many factors and would reduce methodical problems as language and currency effects. Future research should expand the number of observed countries to get more reliable cross-country comparisons. In a recent paper Heinrich et al. (2001) undertook a large cross-cultural study of behaviour using ultimatum, public good and dictator games. Subjects were recruited from 15 small-scale societies. The authors found a large variation across the different cultural groups and argue that preferences and/or expectations are affected by group-specific conditions such as institutions or cultural fairness norms.

2. *Positive Inducements*

Rewards could be more effective than punishments for eliminating undesired behaviour or for motivating (see, e.g., Nuttin and Greenwald 1968). Falkinger and Walther (1991) have theoretically analysed the impact of rewards on tax compliance. Alm, Jackson and McKee (1992a) have used experiments to analyse the effects of four alternative forms of positive inducements upon tax compliance behaviour: i) a lottery treatment where subjects who were checked and found to be fully compliant for the current and the previous four rounds could enter in a lottery in which the chances of winning were 1 in 25, ii) a fixed reward session

where fully compliant participants received a reward of 2 token, iii) an audit reduction and iv) a public good. The results indicate that positive inducements have a significant and positive impact on compliance. However, although i) and ii) have the same expected value, the lottery session had the largest effect on compliance. In the public good session, compliance was not as high as in the lottery or in the fixed reward session, even when the expected value was higher. Audit rate reduction also increased compliance, but less than other rewards. The authors finally conclude that rewards must be immediate and salient to have a numerically significant effect. What the paper disregards is a clear comparison between enforcement and positive inducement. The analysis of positive rewards in tax compliance research is an important topic and just at its beginning. Future efforts could, for example, examine if some sorts of taxpayer subgroups, e.g., honest taxpayers, crowd out their intrinsic motivation when positive inducements are implemented.

3. Equity

Spicer and Becker (1980) examined the relationship between perceived fiscal inequity and tax evasion. Survey findings have already reported this relationship (see, e.g., Spicer and Lundstedt 1976, Song and Yarbrough 1978). Experiments help to better analyse the causal relationship between inequity and tax evasion. The experiment of Spicer and Becker (1980) is based on the theoretical background of the equity theory. The relationship between taxpayers and the government can be viewed as an exchange relationship. Tyler and Smith (1998) state that the equity theory is important because it hypothesises that satisfaction and behaviour are linked not only to the objective outcome levels, but also to the relation of the own outcome to what would be judged fair. Furthermore, lacking equity between taxpayer's own and others' exchange creates a sense of distress. Disadvantage in such a situation creates anger, advantage feelings of guilt (see Adams 1965, Homans 1961). People will engage in behaviours, as tax evasion, designed to restore equity. The experiment procedure of Spicer and Becker closely followed the experiment by Friedland, Maital and Rutenberg (1978). Fifty-seven students were told that their own tax tables were based on a tax of 40 percent. To test the equity theory 19 participants were told that the average tax rate was 65 percent, 19 were told that the average tax rate was 15 percent and the others were told that all participants had the same tax rate. On average, 23.13 percent of total taxes payable were evaded. The group with the high tax evaded 32 percent, the group with the low tax 12.26 percent and the group with the

medium taxation 24.50 percent. Furthermore, perceived relative tax rates were positive and significant at a 95 percent confidence level. The results seem to support the hypothesis developed from the equity theory. However, the experiment took only horizontal equity into account, because all participants at start-up received the same amount of money. Furthermore, the instructions may have produced a bias towards a higher noncompliance rate, because participants were asked to maximise their net income.

Webley, Morris and Amstutz (1985) used a similar design to investigate equity. They manipulated equity by altering the information about taxation : “Your tax rate is 30% and the average tax rate is x ”. The variable x had the values 15%, 30% and 45%. Contrarily to Spicer and Becker (1980), equity did not have a significant effect on tax evasion (see also Webley, Robben and Morris 1988). Thus, the effect of equity on tax compliance does not seem to be clear according to the work presented here. However, in some points the study of Webley et al. (1985) was different. First, the difference of tax rates was only 15% and second, the information about the tax rates was just a part of the initial instructions. However, it should be noted that the series of experiments by Paul Webley and his co-authors did not pay the subjects real money, instead, for example, the “most successful volunteers” got a prize (Webley and Halstead 1986). Such a payment method may induce the subjects to compete against each others and not against the tax authority. Furthermore, experimental questions showed that many subjects were not well aware of the different equity treatments, which might be an indicator that inequity was not well implemented into the design (see Webley et al. 1991).

Tax compliance researchers have started to use cross-country studies. These developments are in line with experiments in other areas. A further step forward in tax compliance literature has been made integrating “cheap talk” and democratic elements as voting into the experimental design. The findings show that cheap talk raises tax compliance. This is a wide open area for additional experiments. Experiments further present a mixed result on how equity manipulations influence tax compliance. However, these experiments have only analysed the effect of horizontal equity, which means a different treatment of particular taxpayers relative to others, without analysing the perceived fairness of a taxpayer’s exchange with the government. This topic will be treated in the next section.

IV. INSTITUTIONAL VARIABLES

This section focuses on the relevance information transparency, individuals' participation in the decision process, and output adjustments to the needs of the taxpayers have in supporting tax morale and tax compliance.

1. Institutional Uncertainty

Influenced by the theoretical analysis, experiments started to analyse institutional uncertainty and thus the relevance of information available. Experiments analyse the role of fiscal uncertainty by comparing the compliance behaviour when key fiscal parameters are known with certainty with situations in which these parameters are made uncertain.

Spicer and Thomas (1982) examine whether a more precise information leads to more responses to changes in the audit probability. 18 participants out of 54 were given precise information regarding the audit probabilities in each round (first round 1/20, second 5/20 and 3/20 in the third round). 18 participants received imprecise information (audit probabilities are low, high and medium). The remaining participants were given no information about the audit probability. The results indicate that the percentage of taxes evaded was negatively and significantly correlated with the audit probabilities only if respondents received precise information regarding the probabilities. Spicer and Thomas state that in the absence of precise information, taxpayers pay far less attention to the amount evaded:

“The taxpayer can be viewed here as using rules of thumb or heuristics to help his tax evasion decision” (p. 245).

As a consequence, Spicer and Hero (1985) examine the rules of thumb or heuristics. They implemented a deception. Although there had not been a previous game, 12 participants out of 36 were told that in the previous game participants paid only 10 percent of taxes due, 12 were told 50 percent, and the rest 90 percent. However, the results indicate that the amount of taxes evaded was not affected significantly by the information provided. So, contrary to survey findings, taxpayers did not use the behaviour of others as a guide to their own evasion. The results seem to suggest that despite the deception, taxpayers use rules of thumb or heuristics.

But it should be mentioned that the experiment was not specially designed to clearly identify these rules.

Alm, Jackson and McKee (1992c) analyse the role of fiscal uncertainty by comparing the compliance behaviour of individuals when the fiscal parameters are known with certainty with the compliance when these parameters are in the “veil of uncertainty”. The results indicate that introducing uncertainty in the fiscal parameters tax rate, fine rate and probability of detection increases tax compliance, when the decision is made independently, which means that individuals receive nothing for their tax payments. Compliance is affected in the opposite way, when individuals receive a benefit from the government for their tax payments (see next subsection). The authors finally state that:

“a policy, intentional or not, of increasing the level of fiscal uncertainty is a risky tool for generating increased compliance. Individuals may well respond by reducing their compliance. If that occurs, then not only are individuals made worse off by the uncertainty, but the government may also lose tax revenues” (p. 1025).

2. Public Services

Mackscheidt (1984) stresses the relevance of personal benefit derived from public expenditure. The degree of taxpayers’ satisfaction with government seems to play an important role. Taxpayers are more inclined to comply with the law if the exchange between the paid tax and the performed government services are found to be equitable. Alm, Jackson and McKee (1992) argue that theoretical and experimental work ignores much evidence that tax compliance depends in part upon the use of tax revenue and stress that:

“Ignoring government expenditures means that individual compliance decision can be treated as independent across individuals, so that each individual need take only his or her own behavior into account when deciding to report income. In practice, however, an individual’s choice may not be independent of the choices of others” (p. 1019).

Güth and Mackscheidt (1985) designed an experiment which took public transfer expenditures into consideration. Public transfer depended on the actual total revenue of taxes and fines and was paid according to individual transfer coefficients. With this, Güth and Mackscheidt intend to investigate vertical equity. The results indicate that subjects were

constantly honest or not (93 percent). Becker, Büchner and Slesking (1987) analyse the effect of transfer payments. Students received transfers which were independent of the amount of their personal income. They were not informed of the auditing probability. Furthermore, the earned income was based on a test, in which they were confronted with 25 numerical series. Individuals were informed about their individual share of total transfer payments but not about the amount. The results of the study indicate that individual transfer payment received from the public sector plays an important role. Evasion rises if taxpayers suppose that they receive less than others. Generally, experiments show that compliance is greater with public goods than without⁵. Many earlier experiments have not paid attention to the dynamic process of paying taxes. They used only one or relatively few rounds. Treatments without an adequate number of rounds reduce the possibility that subjects reach an equilibrium decision strategy. There is some evidence in public good games that behaviour changes over the rounds (see, e.g., Isaac and Walker 1988, Andreoni 1988, Dawes and Thaler 1988).

It could be interesting also to consider the effect of an inefficient state. In order to treat this, Güth and Mackscheidt (1985) propose to introduce an efficiency parameter e . The amount e of the tax revenues which is utilised for the transfer payments, can be interpreted as an indicator of the state's efficiency. Thus, the hypothesis that state's inefficiency leads to a reduction of tax morale can be tested.

Alm, Jackson and McKee (1992) implemented treatments in which public good is provided. Taxes paid in a round were multiplied by 2, and the resulting amount was then redistributed in equal shares to the members of the group. The data indicates that the average compliance is always higher in the presence of the public good. However, the introduction of fiscal uncertainty in the presence of a public good lowers the average compliance rate relatively to the base case.

Alm, McClelland and Schulze (1991) analysed the recognition of government services. They changed consumers' surplus derived from government provision of the public good by changing the group surplus multiplier (0, 2, and 6). In the treatment where the subjects received nothing for their tax payments, the average group compliance rate was of 43.5 percent. The compliance rate of the treatment with the multiplier 2 was 53.7 percent. Increasing the multiplier to 6 increases compliance to 59.2 percent. Although compliance increases with the surplus multiplier, the increase is non-linear. The authors conclude that

⁵ For exceptions, see Alm, Sanchez and de Juan (1995). They did not find evidence that public goods increase compliance.

there appear to be limits to how much governments can influence compliance by increasing the individual payoff to tax payments, and point out that

“government can increase compliance by providing goods that their citizens prefer more, by providing these goods in a more efficient manner, or by more effectively emphasising that taxes are necessary for receipt of government services” (p. 34).

However, a problem of such designs is the separation between the effect of public goods and the effect of taxpayers’ interaction. One way to deal with this problem is to build an experimental design with fixed public transfers treatment, regardless of how much taxes subjects pay, and a treatment where public transfers depend on the amount of paid taxes, where subjects take the others’ compliance into account (see Kim 1994).

If taxpayers can vote on the way taxes will be spent, they may feel more inclined to pay their taxes. Furthermore, the outcome of the vote gives the taxpayers information about the level of group support for the collective decision and this information can be useful in building expectations about the tax compliance behaviour of other taxpayers (Alm, Jackson and McKee 1993). Kidder and McEwen (1989) argue that the more people are involved in establishing rules, the stronger is their sense of obligation. Tyran and Feld (2001) analyse under which circumstances the enactment of mild law induces law-abiding behaviour. For this, they compared exogenously imposed law (enacted by the experimenter) and endogenously chosen law (participants could vote in a referendum). The results show that mild law imposed by an exogenous authority does not induce widespread law-abiding behaviour. But mild law induces voluntary compliance if it is accepted in a referendum. The authors state that voting for mild law can be interpreted as a signal for cooperation and so induces expectations of cooperation which increases cooperation. Furthermore, if mild law is accepted endogenously, individuals expect others to be committed not to free-ride.

Alm, Jackson and McKee (1993) analyse the effects of fiscal institutions on compliance by varying the process by which tax collection becomes a public good (voting versus imposition). Donations given to a campus organisation were taken as public good. So, the public good was not distributed directly to the subjects, but sent to a specific organisation. The experimental results provide evidence that tax compliance is higher when individuals can vote on the use of their taxes than when there is no voting over alternatives. Furthermore, if individuals know that the group is strongly in favour of a particular expenditure, compliance is enhanced. However, compliance falls if the vote count is not revealed. The authors conclude that

“government can generate greater compliance by ensuring that individuals feel that citizens are well-informed of the outcome of the vote, and that taxes are spent in ways consistent with the preferences of the citizens” (p. 302).

The studies presented here have enriched tax compliance research, expanding the experiments based on a game between taxpayers and the tax authority to situations in which taxpayers’ interactions are considered. The findings show that taxpayers report more income when they receive public goods than when they do not.

V. FUTURE RESEARCH AND CONCLUSIONS

This section analyses the limits and possibilities of experiments on tax morale and tax compliance and mentions some topic for future research endeavours which could shed some new light into the tax compliance puzzle. The section concludes with some final remarks.

1. Sophistication of the Design

Webley et al. (1991) argue that a tax-evasion experiment might be a good instrument to study factors that affect optimising or cheating. But they doubt that psychological processes can be captured well enough. They argue that

“unless these experiments are carefully designed, the results may reflect a person’s understanding of economics rather than the behaviour that would be displayed in the real situation” (p. 46).

To obtain experimental results from a more general setting, Webley, Morris and Amstutz (1985) constructed a more sophisticated design and conducted two experiments. The authors intended the tax aspect to be less obvious. In a small business simulation, income tax purpose was just one of a series of decisions (advertising, service charges, market research) that a subject had to make. Interestingly, compared to previous studies, evading tax was less common. Subjects rarely declared zero income.

In other recent studies income distribution is not endowed exogenously by the experimenter but endogenously. In Maciejovsky, Kirchler and Schwarzenberger (2001), participants had to earn their income on an experimental asset market (see also Anderhub, Giese, Güth, Hoffmann and Otto 2002, Giese and Hoffmann 2000). Another way of treating the income endogenously is to use a test, where participants are confronted with, for example, numerical series following certain numerical patterns. Thus, income distribution is based on individual's test results (see Becker, Büchner and Slesking 1987).

Should experiments use a neutral language? Alm (1998) argues that neutral terms allow to mask the context of the experiment and increase the control over subject preferences and avoid making subjects invoke different mental scripts. However, some investigations conclude that there is no difference in behaviour between experiments using neutral terminology and experiments that use tax specific language (see, e.g., Alm, McClelland and Schulze 1992). Wartick, Madio and Vines (1998) found behavioural differences with adult subjects but not with students.

Alm (1998) argues that the income declaration is not a single choice decision, but consists of a number of other decisions as, e.g., deductions. He stresses that more analysis of the multidimensional nature of the reporting decision is needed. Webley and Halstead (1986) point out that participants must have the possibility to evade in many ways. However, Cowell (1991) criticises that making experiments more complicated can make them harder to interpret. He argues:

“It is tempting to think that experimental design can be made richer and more lifelike by switching from a game of draughts to a game of chess; but this may not be of much practical advantage if, in real life, people just kick over the chessboard” (p. 127).

2. Limitations?

Many tax compliance games use students as participants. Do students have enough experience of filling in tax forms? Are students a satisfactory sample for studies on tax behaviour? It can be argued that students are not useless but the results should be interpreted carefully (see Webley et al. 1991). However, there is evidence that students' responses are not different from those of other subjects (see, e.g., Baldry 1987). Alm (1998) states:

“There is also no reason to believe that the cognitive processes of students are different from those of “real” people” (p. 43).

Future research could check this point by using old designs with mixed subjects. This helps also to check another important concern: the design sensitivity. Experiment replication and small design changes are essential to analyse robustness.

And what about the sanctions? Severe punishments, such as jail, are not possible to implement in tax compliance games. The absence of social pressures could inhibit the psychological processes which in the real world are important. Recent experiments aim to capture social stigma as a factor (see, e.g., Bosco and Mittone 1997). Quite a lot of experiments in tax compliance research are computer simulations. It could be argued that the real-life situation of taxation does not involve the use of computers. Furthermore, if the computer is seen as a gaming machine, the results could be biased. However, Webley et al. (1991) point out:

“We feel that it is not the computer per se that conveys the message that the situation is a game but the content of the program” (p. 52).

Moreover, in some countries tax forms can be filled out with the computer.

Experiments should not be too long or complicated, the instruction should be understandable, so that subjects don't become bored or confused. Furthermore, according to Alm (1998) experiments should be administered in a uniform and consistent manner to allow replicability. This allows testing the robustness of the design and to avoid erroneous conclusions. However, Rubinstein (2001) stresses that the current incentive system does not reward replications. He brings an appropriate example:

“Let us say you are a researcher who is interested in a paper by Prof. X who claims to have found something quite interesting. Let us say that you find the results plausible but you are not sure that the experiment was done properly and that indeed conclusion is valid. Do you have any incentive to repeat the experiment? No, because no one would publish it. Yet, you are interested in the subject matter and you probably think that Prof. X's finding is sensitive to a certain key detail of the experiment. Now you are quite eager to demonstrate your point and to publish a paper. In order to do that you have to first confirm Prof. X's basic claim. If you fail to repeat Prof. X's result, your point is lost. Thus, you approach the experiment with a desire to confirm the published result” (p. 626).

3. Possibilities

In recent years, experimental research has helped to our understanding of tax morale and tax compliance by, for example, analysing the response of individuals to changes in policy instruments such as the tax rate, audit rate and fine rate etc. Furthermore, experiments have illuminated aspects where other methods, such as empirical or survey investigations, have difficulties. Experiments can be used to analyse relatively unexplored areas, such as moral and social sentiments, social norms etc. In the early stages, Schwartz and Orleans (1967) carried out an interesting field experiment. The approach was to determine the effects of moral appeals and threats of punishment on behavioural compliance with tax laws. They found that moral appeals had a much stronger influence than punishment threats. These findings were important in focusing the attention on different potential compliance factors. However, since then, little work has been done to analyse the relevance of moral appeals.

Cowell (1991) argues that it would be useful if the

“set-up of future experiments and the processing of the results could be set up in such a way as to clarify (1) the factors which predispose individuals as to whether they will obey or break the rules about paying taxes, and (2) amongst those who do break the rules the (possibly different) factors which influence by how much they underreport or overclaim” (p. 127).

Future research could pay more attention to inter-temporal components of tax evasion and tax compliance. Hessing et al. (1992) argue, following their observations, that there are probably three groups of taxpayers: i) taxpayers who never evade taxes, ii) taxpayers who will try to evade now and then and iii) habitual tax evaders. These interesting findings could be looked over more closely. However, an individual's willingness to comply could change over time. Can we observe a crowding-out of honest taxpayers by changing policy instruments? And if there is crowding-out, can tax morale be recovered with or without any policy influence? Is the process of recovery symmetric or asymmetric to the crowding out? The first steps towards taking into account the inter-temporal aspect have been made, for example, by using endogenous audit rules. Alm, McKee and Beck (1990) analysed tax amnesty, which has a long run impact on voluntary tax compliance. Honest taxpayers may perceive the amnesty as a “special” treatment for tax cheaters and could conclude that the amnesty is unfair to them. In response to this, their compliance may decline. In one treatment the authors introduced an amnesty in the middle of the experiment with no previous warning. In other treatments individuals were told at the beginning that there might be an amnesty at some point in the

experiment. Their results indicate that the average level of compliance generally falls after an amnesty is given. Interestingly, participants who either complied completely or not at all were unaffected by the amnesty. Furthermore, according to the authors, the decline in compliance stems from those participants who engaged in moderate levels of compliance prior to the amnesty.

Besides the two categories “Speaking to Theories” and “Searching for Facts” Roth (1995, p. 22) mentioned a third one: “Whispering in Ears of Princes”. “Whispering in the Ears of Princes” deals with the dialogue between experimenters and policymakers. As already mentioned, most experiments on tax compliance and tax morale fall into the first two categories. However, future research could change this picture. As Roth states, “Whispering in the Ears of Princes” offers the possibility of bringing scientific methods to formulate advice on questions of policy. Tax compliance and tax morale research should be qualified for this, because an experimental environment can be designed to mirror the naturally occurring environment working with policy instruments such as tax rate, audit rate, fine rate etc. Nevertheless, researchers should be careful to take into consideration the limitations and problems of experiments, especially the design sensitivity. Furthermore, the question remains how policy makers classify the ability of experiments to analyse tax compliance and tax morale.

4. Conclusions

A significant body of research using experiments on tax compliance and tax morale has been accumulated. However, much work has concentrated on traditional topics as audit, penalty and tax rate. There are several other issues which would merit further development. The main purpose of this article is to present the work that has been done on issues treated less intensively than the traditional ones and which could merit further development. The focus was on social and institutional factors.

Tax compliance experiments show that it is difficult to test the predictions of the level of tax compliance models. In most cases the level of tax compliance was higher than predicted. Experiments that analysed the effect of deterrence determinants have given mixed insights into the changes in tax compliance as a response to different policies. However, despite the mixed results, the findings tend to suggest that a higher audit rate leads to more

compliance and that tax compliance is an increasing function of income and a decreasing function of the tax rate.

This survey indicates that holding the probability of penalty, the fine rate and taxpayer's risk aversion constant, social and institutional factors systematically matter. Experiments which consider the interaction between subjects indicate that moral constraint works as a disincentive to evade taxes. Furthermore, cheap talk raises compliance. It would be an enrichment to develop a model incorporating the thesis of Bohnet and Frey (1994) that information created in a discussion helps individuals to clarify the order and ranking of their preferences, instead of starting from the assumption that individuals do have well defined preferences.

Cross-country studies show that differences in the tax compliance behaviour can be explained by differences in social and institutional factors. Experiments also show that tax compliance increases when individuals receive public goods. The analysis of horizontal equity has produced mixed results. More experiments should be done to get better insights. It would be interesting to expand the cross-country studies to analyse equity considerations.

The experimental findings have given new impulse to the theoretical analysis aiming at developing tax compliance models. However, the observed level of compliance still cannot really be predicted by the models. One approach tries to incorporate such findings into a more sophisticated expected utility theory. Another approach moves beyond classical expected utility theory into the direction of social psychology or sociology theories such as the prospect theory. Alm (1998) points out that research should recognise the "full house" (p. 49) of theories, each explaining the behaviour of different taxpayers. Based on the concept of different taxpayers, future research should give more structure to the findings. The challenge is to identify the basic themes of other social sciences and include them in a sophisticated manner without giving up economic foundations. Tax morale and tax compliance experiments have impressively shown that many taxpayers seem to have a more refined motivation structure than that assumed by traditional economics.

REFERENCES

- Adams, J. S. (1965). Inequity in Social Exchange, in: L. Berkowitz (ed.), *Advances in Experimental Social Psychology*. New York: Academic Press: 167-299.
- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Alm, J. (1991). A Perspective on the Experimental Analysis of Taxpayer Reporting, *The Accounting Review*. 66: 577-593.
- Alm, J. (1998). Tax Compliance and Administration, Working Paper, University of Colorado at Boulder.
- Alm, J. and M. McKee (2000). Tax Compliance as a Coordinated Game, Working Paper, University of Colorado at Boulder.
- Alm, J., M. B. Cronshaw and M. McKee (1993). Tax Compliance with Endogenous Audit Selection Rules, *KYKLOS*. 1: 27-45.
- Alm, J., B. Jackson and M. McKee (1992a). Deterrence and Beyond: Toward a Kinder, Gentler IRS, in: J. Slemrod (ed.), *Why People Pay Taxes*. Ann Arbor: University of Michigan Press: 311-329.
- Alm, J., B. R. Jackson and M. McKee (1992b). Estimating the Determinants of Taxpayer Compliance with Experimental Data, *National Tax Journal*. 45: 107-115.
- Alm, J., B. R. Jackson and M. McKee (1992c). Institutional Uncertainty and Taxpayer Compliance, *American Economic Review*. 82: 1018-1026.
- Alm, J., B. R. Jackson and M. McKee (1993). Fiscal Exchange, Collective Decision Institutions, and Tax Compliance, *Journal of Economic Behavior and Organization*. 22: 285-303.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Alm, J., G. H. McKee and W. Beck (1990). Amazing Grace: Tax Amnesties and Tax Compliance, *National Tax Journal*. 43: 23-37.
- Alm, J., I. Sanchez and A. De Juan (1995). Economic and Noneconomic Factors in Tax Compliance, *KYKLOS*. 48: 3-18.
- Anderhub, V., S. Giese, W. Güth, A. Hoffmann and T. Otto (2002). Tax Evasion with Earned Income – An Experimental Study, *FinanzArchiv*. 58: 188-206.
- Andreoni, J. (1988). Why free ride? Strategies and Learning in Public Goods Experiments, *Journal of Public Economics*. 37: 291-304.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.

- Aronson, E. and J. Carlsmith (1968). Experimentation in Social Psychology, in: G. Lindzey and E. Aronson (eds.), *Handbook of Social Psychology*. Reading, MA: Addison-Wesley: 99-142.
- Baldry, J. C. (1987). Income Tax Evasion and the Tax Schedule: Some Experimental Results, *Public Finance*. 42: 357-383.
- Becker, W., H. J. Büchner and S. Sleeking (1987). The Impact of Public Transfer Expenditures on Tax Evasion: An Experimental Approach, *Journal of Public Economics*. 34: 243-263.
- Bohnet, I. (1997). *Kommunikation und Kooperation*. Tübingen: Mohr.
- Bohnet, I. and B. S. Frey (1994). Direct-Democratic Rules: The Role of Discussion, *KYKLOS*. 47: 341-354.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Cowell, F. A. (1990). *Cheating the Government*. The Economics of Evasion. Cambridge: MIT Press.
- Cowell, F. A. (1991). Tax-Evasion Experiments: An Economist's View, in: P. Webley, H. Robben, H. Elffers and D. Hessing, *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press: 123-127.
- Cummings, R. G., J. Martinez-Vazquez and M. McKee (2001). Cross Cultural Comparisons of Tax Compliance Behavior, Working Paper No. 01-03. George State University. School of Policy Studies.
- Dawes, R. M. and R. H. Thaler (1988). Anomalies: Cooperation, *Journal of Economic Perspectives*. 2: 187-197.
- Falkinger, J. and H. Walther (1991). Rewards versus Penalties: On a New Policy Against Tax Evasion, *Public Finance Quarterly*. 19: 67-79.
- Fehr, E. and K. M. Schmidt (1999). A Theory of Fairness, Competition, and Cooperation, *Quarterly Journal of Economics*. 114: 817-868.
- Fischer, C. M., M. Wartick and M. M. Mark (1992). Detection Probability and Taxpayer Compliance: A Review of the Literature, *Journal of Accounting Literature*. 11: 1-46.
- Forsythe, R., J. Horowitz, N. E. Savin and M. Sefton (1994). Replicability, Fairness and Pay in Experiments with Simple Bargaining Games, *Games and Economic Behavior*. 6: 347-367.
- Frey, B. S. and R. Eichenberger (1999). *The New Democratic Federalism for Europe*. Cheltenham, UK: Edward Elgar.
- Frey, B. S. and H. Weck-Hannemann (1984). The Hidden Economy as an 'Unobserved' Variable, *European Economic Review*. 26: 33-53.
- Friedland, N. (1982). A Note on Tax Evasion as a Function of the Quality of Information about the Credibility of Threatened Fines: Some Preliminary Research, *Journal of Applied Social Psychology*. 12: 54-59.
- Friedland, N., S. Maital and A. Rutenberg (1978). A Simulation Study of Income Tax Evasion, *Journal of Public Economics*. 10: 107-116.

- Giese, S. and A. Hoffmann (2000). Tax Evasion and Risky Investments in an Intertemporal Context: An Experimental Study, Discussion Paper No. 30, Humboldt-Universität zu Berlin.
- Güth, W. and K. Mackscheidt (1985). Die Erforschung der Steuermoral, mimeo, Universität zu Köln.
- Güth, W., R. Schmittberger and B. Schwarz (1982). An Experimental Analysis of Ultimatum Bargaining, *Journal of Economic Behavior and Organization*. 3: 367-388.
- Heinrich, J., R. Boyd, S. Bowles, C. Camerer, E. Fehr, H. Gintis and R. McElreath (2001). In Search of Homo Economicus: Behavioral Experiments in 15 Small-Scale Societies, *American Economic Review*. 91: 73-78.
- Homans, G. C.(1961). *Social Behavior: its Elementary Form*. NewYork: Harcourt.
- Isaac, M., J. M. Walker and A. W. Williams (1994). Group Size and the Voluntary Provision of Public Goods: Experimental Evidence Utilizing Large Groups, *Journal of Public Economics*. 54: 1-36.
- Kahneman, D. and A. Tversky (1979). Prospect Theory: An Analysis of Decision Under Risk, *Econometrica*. 47: 263-291.
- Kidder, R. and C. McEwen (1989). Taxpaying Behavior in Social Context: A Tentative Typology of Tax Compliance and Noncompliance, in: J. A. Roth and J. T. Scholz (eds.), *Taxpayer Compliance*, Vol. 2. Philadelphia: University of Pennsylvania: 46-75.
- Kim, C. K. (1994). The Effects of Public Transfers and Tax Rate Changes on Reported Income: Experimental Evidence, Ph.D. dissertation, University of Pittsburgh.
- Maciejovsky, B., E. Kirchler and H. Schwarzenberger (2001). Mental Accounting and the Impact of Tax Penalty and Audit Frequency on the Declaration of Income: An Experimental Analysis, Discussion Paper No. 16, Humboldt-Universität zu Berlin.
- Mackscheidt, K. (1984). Konsolidierung durch Erhöhung von Steuern und Abgaben?, in: H. H. v. Arnim and Konrad Littmann (eds.), *Finanzpolitik im Umbruch: Zur Konsolidierung öffentlicher Haushalte*. Berlin: Duncker & Humblot: 145-161.
- Mittone, L. (1997). Subjective versus Objective Probability: Results from Seven Experiments on Fiscal Evasion, CEEL Working Papers, n.4.
- Nutin, J. and A. G. Greenwald (1968). *Reward and Punishment in Human Learning*. New York: Academic Press.
- Ockenfels, A. (1999). *Fairness, Reziprozität und Eigennutz*. Tübingen, Mohr Siebeck.
- Ockenfels, A. and J. Weimann (1999). Types and Patterns: An Experimental East-West-German Comparison of Cooperation and Solidarity, *Journal of Public Economics*.71: 275-287.
- Ochs, J. and A. E. Roth (1989). An Experimental Study of Sequential Bargaining, *American Economic Review*. 79: 355-384.
- Paldam, M. (2000). Social Capital: One or Many? Definition and Measurement, *Journal of Economic Surveys*. 14: 629-653.

- Roth, A. E. (1995a). Introduction to Experimental Economics, in: J. H. Kagel and A. E. Roth (eds.), *The Handbook of Experimental Economics*. Princeton: Princeton University Press: 1-98.
- Roth, A. E. (1995b). Bargaining Experiments, in: J. H. Kagel and A. E. Roth (eds.), *The Handbook of Experimental Economics*. Princeton: Princeton University Press: 253-342.
- Roth, J. A., J. T. Scholz and A. D. Witte (eds.) (1989). *Taxpayer Compliance*, Vol. 1 and Vol. 2. Philadelphia: University of Pennsylvania Press.
- Rubinstein, A. (2001). A Theorist's View of Experiments. Joseph Schumpeter Lecture, *European Economic Review*. 45: 615-628.
- Sally, D. (1995). Conversation and Cooperation in Social Dilemmas, *Rationality and Society*. 7: 58-92.
- Schwartz, R. and S. Orleans (1967). On Legal Sanctions. *University of Chicago Law Review*. 34: 282-300.
- Slemrod, J., M. Blumenthal and C. Christian (2001). Taxpayer Response to an Increase Probability of Audit: Evidence from a Controlled Experiment in Minnesota, *Journal of Public Economics*. 79: 455-483.
- Smith, V. L. (1982). Microeconomic Systems as an Experimental Science, *American Economic Review*. 72: 923-955.
- Song, Y. and Y. E. Yarbrough (1978). Tax Ethics and Taxpayer Attitudes: A Survey, *Public Administration Review*. 38: 442-457.
- Spicer, M. W. and L. A. Becker (1980). Fiscal Inequity and Tax Evasion: An Experimental Approach, *National Tax Journal*. 33: 171-175.
- Spicer, M. W. and S. B. Lundstedt (1976). Understanding Tax Evasion, *Public Finance*. 31: 295-304.
- Spicer, M. W. and R. E. Hero (1985). Tax Evasion and Heuristics. A Research Note, *Journal of Public Economics*. 26: 263-267.
- Spicer, M. W. and J. E. Thomas (1982). Audit Probabilities and the Tax Evasion Decision: An Experimental Approach, *Journal of Economic Psychology*. 2: 241-245.
- Tyler, T. R. and H. J. Smith (1998). Social Justice and Social Movements, in: D. T. Gilbert, S. T. Fiske and G. Lindzey (eds.), *The Handbook of Social Psychology*, Vol. 3. Boston: McGraw-Hill: 595-629.
- Tyran, J.-R. and L. P. Feld (2001). Why People Obey the Law. Experimental Evidence from the Provision of Public Goods, Working Paper, University of St. Gallen.
- Wartick, M. L., B. Madio and C. Vines (1998). Reward Dominance in Tax Reporting Experiments: The Role of Context, Working Paper University of Kentucky.
- Webley, P. (1987). Audit Probabilities and Tax Evasion in a Business Simulation, *Economics Letters*. 25: 267-270.
- Webley, P. and S. Halstead (1986). Tax Evasion on the Micro: Significant Simulations or Expedient Experiments?, *Journal of Interdisciplinary Economics*. 1: 87-100.

- Webley, P., I. Morris and F. Amstutz (1985). Tax Evasion During a Small Business Simulation, in: H. Brandstätter and E. Kirchler (eds.), *Economic Psychology*. Linz: Trauner: 233-242.
- Webley, P., H. Robben and I. Morris (1988). Social Comparison, Attitudes and Tax Evasion in a Shop Simulation, *Social Behaviour*. 3: 219-228.
- Webley, P., H. Robben, H. Elffers and D. Hessing (1991). *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press.
- Wilde, L. (1980). On the Use of Laboratory Experiments in Economics, in J. Pitt (ed.), *The Philosophy of Economics*. Dordrecht: Reidel: 137-148.
- Yancey, W. (1988). *Effect of Penalties on Underreporting of Taxable Income*. Working Paper, University of Texas at Austin.
- Yitzhaki, S. (1974). A Note on Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 3: 201-202.

CHAPTER IV

THE ECONOMIC ANALYSIS OF “CREATIVE” COMPLIANCE*

ABSTRACT

Taxpayers have different possibilities to express their attitudes towards a tax system. While tax compliance literature has mostly focused on the illegal strategy of tax evasion, another possibility would be to avoid taxes. The intention of this survey paper is to show the relevance of tax avoidance and thus to analyse the related topics as complexity and tax knowledge. Furthermore, tax practitioners, key players in the tax avoidance strategy, are analysed.

JEL classification: H260, K420

Keywords: tax avoidance, tax compliance, tax morale, tax practitioners

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I. INTRODUCTION

The heavy taxation in ancient Egypt led to workers and farmers losing their desire to work. As a consequence, agricultural land fell into disuse, workers fled and businessmen moved away (Adams 1993, p. 24). This might be a reason for the decay of Egypt and Caesar Augustus' easy conquest.

Taxpayers have different possibilities to express their attitudes towards a tax system. Research commonly treats tax evasion as an important reaction. However, there are other possibilities as, e.g., British tax negotiations, where someone negotiates with those enforcing the law over the meaning or applicability of the law and tries to make a deal on how the enforcement is taking place (see McBarnet 1992). Tax avoidance would be a further legal strategy to escape from tax payments¹. Tax avoidance and tax evasion often are not distinguished in economic studies. While tax evasion might produce moral costs, tax avoidance reduces such moral costs but increases information or advice costs. Tax avoidance seems to be more broadly accepted than tax evasion. With the tax practitioner, the focus on tax avoidance brings a new important "player" on the stage of analysis. Furthermore, the topic which is presented in this paper is only in its infancy. Researchers have just started in the 90s to examine theoretically and empirically the influence of tax preparers, tax knowledge and information on tax compliance. McBarnet (1992) states:

"Noncompliance raises many major issues for policy and for theory. But there is a real danger: in concentrating attention on noncompliance, the constructed and problematic nature of compliance will be overlooked, and wider issues – the role of tax practitioners in undermining declared tax policy; the different routes available to rich and poor, individuals and corporations, for escaping tax; the possible limits of the law – will be ignored. Legal tax avoidance, taking us into just these issues, should therefore be recognized as a key topic for research and analysis too" (p. 343).

The objective of this paper is to review a portion of the tax compliance literature with an eye toward distinguishing between the act of illegal tax evasion (Section II) and (potentially) legal tax avoidance. The purpose of this analysis is also to bring the literature together in a way that provides a starting point for new ideas in future tax compliance research. Towards this end,

¹ Another possibility would be tax shifting. This topic is not going to be treated in this paper.

the paper focuses on the role of information and knowledge (Section III), tax complexity (Section IV) and the role of the tax advisor (Section V) in the compliance process.

II. TAX AVOIDANCE AND TAX LAW

Long and Gwartney (1987) defines income tax avoidance as

“taxpayer actions designed to (a) move reported income into lower taxed categories and (b) reduce the personal costs of consumption” (p. 517).

The main argument is that tax evasion and tax avoidance have the target to reduce the tax burden (see Cross and Shaw 1982). However, as already mentioned, the costs of these two actions are different. While tax evasion might be coupled with a possible disutility and thus creates moral costs, tax avoidance is stamped by information or advice costs to find legal reductions in tax liabilities and thus to take advantage of the tax law. It allows to reduce the risk of penalty and gives the feeling to comply with the tax law. As McBarnet (1992) states when distinguishing tax evasion and tax avoidance:

“it’s not what you do but the way that you do it” (p. 341).

Searching an active strategy for “preemption” strategy helps to reduce moral feelings as guilt and shame. The sentiments guilt and shame may influence reporting behaviour, reducing the perceived benefits of cheating². Tax avoidance being in line with the law, citizens’ sense of duty might remain intact. “Tax avoiders” use the possibilities offered by the law to neutralise their moral cost of acting illegally. In a study of Kirchler, Maciejovsky and Schneider (2001) 252 participants (fiscal officers, business lawyers, entrepreneurs and students) had to read one of three scenarios, produce spontaneous associations and evaluate them. According to their findings, participants clearly distinguished between tax avoidance and tax evasion. Tax avoidance was associated with “legal, the intention to save taxes, cleverness, a good idea, and costs” (p. 8) and was perceived as “moral” and associated with “the acceptance of tax reduction, to make use of tax allowances, legal tax reduction, horizontal justice, and tax loophole” (p. 9). Contrary to avoidance, tax evasion was associated with “illegal, fraud,

² For a survey on the role of moral feelings on tax compliance see Torgler (2001).

criminal prosecution, risk, tax-audit, punishable, penalty, and the risk of getting caught” (p. 8) and was seen as “immoral” and associated with “risk tendency, peccadillo, intentional evasion, audit and sanction, opportunity, black money, inacceptance, unintentional errors, and vertical justice” (p. 9).

Analysing tax avoidance helps to explore the incentives tax laws can create. To illustrate this point let us turn back the time. We find illustrative examples of tax avoidance in history (see Adams 1993). In Rome, Diocletian strongly expanded the bureaucracy and the army. Thus, the demand for taxes increased. People created tax avoidance strategies. They abandoned farmlands or transferred their lands to the next military chief or large landowners. A similar picture can be found in Russia. During the epoch of the tsars, taxes were paid on plowed land. Thus, there was little incentive to acquire new farming equipment and old and unproductive lands were abandoned. Furthermore, a tax on each farming family made peasants share a common dwelling by building duplexes and triplexes. The tsar’s tax collectors responded and considered each outside door as a separate household, which created incentives to board up doors. Peasants accepted bondage to large landowners as a way to avoid taxes. Landowners also developed tax avoidance schemes. Poll taxes were levied about every five years. New serfs were not on the census rolls and thus were not taxed. Thus, new landlords paid off a peasant’s debt and refinanced the peasant on his own land. Peter the Great tried to reform the tax system and created a single poll tax on all males. As a consequence, many peasants avoided registration.

Tax avoidance is possible because tax laws in many countries give the opportunity to make adjustments in form of deductions, exclusions and allowance for income losses (Long and Gwartney 1987). If taxpayers have a positive attitude towards tax evasion, they could reduce their moral costs being for a tax constitution which helps to reduce tax in a legal manner, to have a higher opportunity to evade taxes.

Complicated tax laws may generate higher incentives for tax evasion. On the other hand, it may increase the costs to act in avoidance schemes. Alm and McCallin (1990) use the portfolio theory to analyse the avoidance-evasion decision. They found that a decrease in the rate of return on risky income, or an increase in its variance, increases the amount of declared income. Furthermore, individuals substitute from evasion to avoidance if the return from avoidance increases or the riskiness of avoidance decreases in relation to tax evasion.

Tax evasion depends on how tax laws define illegal activities. Tax laws define the opportunities for tax avoidance and therefore the relative price of tax avoidance. Law can be used by the taxpayers and tax preparers in a “creative” way, seeing it as a material to work on

and possibly able to transform taxpayers' own interest. Tax avoidance is in general accepted as lawful. However, the line between tax evasion and tax avoidance cannot be taken as clearly defined (see McBarnet 1992).

Slemrod and Sorum (1984) estimated the tax compliance costs based on a survey of 2000 Minnesota taxpayers. They conclude that the costs are approximately between five to seven percent of the revenue raised by the federal and state income tax systems combined. Compliance cost was measured by the time spent and the expenditures. They found a strong positive relationship between self-employment and compliance costs, holding other demographic factors equal. Furthermore, being in the lowest and highest income class is associated with relatively high compliance costs. Thus, their results show that costs as a fraction of income take a U-shaped form. Sandford (1973) reports compliance costs between 1.9 and 3.4 percent of the tax revenue collected in the United Kingdom. In a survey, Sandford, Godwin and Hardwick (1989) find similar results. The costs of 3.6 percent of the tax revenue was equally divided between the value of taxpayers' time and the monetary expenditures. For Australia, Pope and Fayle (1990) found costs between 6.8 to 10.8 percent of the tax revenue, with the highest compliance costs for the taxpayers with the lowest income.

III. KNOWLEDGE AND INFORMATION

Standard models of tax compliance assume that taxpayers are fully informed of all the aspects that cover the tax reporting process (see Andreoni et al. 1998). However, this is a strong assumption. The degree of knowledge and information might be an important factor in the way taxpayers behave. Better educated taxpayers are supposed to know more about tax law and fiscal connections and thus would be in a better position to assess the degree of compliance (see Lewis 1982). However, it should be noticed that there might be people with a lower education who have acquired a high knowledge about taxation (see Eriksen and Fallan 1996). Some taxpayers might find the complexity of tax information more difficult to understand than others (see Pinney 1993). On the other hand, Vogel's (1974, p. 500) survey findings indicate that less educated taxpayers are less exposed to tax compliance information and less informed about relevant tax regulations and need assistance more often. Braithwaite (2001) from a survey of 1000 Australians in 1998 reports that only 15% believed that "the Tax Office does a good job stopping tax avoidance by very wealthy people" (p. 1).

More educated people may be less compliant because they better understand the opportunities for avoiding taxes. Fiscal knowledge may positively influence the practice of avoidance (see Gereroms and Wilmots 1985). Witte and Woodbury (1985) found that compliance is higher in established, but growing areas, which are populated largely by middle class native born whites. Areas with a better educated population and areas with large student populations have low levels of compliance. Furthermore, areas with high levels of poverty and unemployment have a low level of compliance for all groups. An important factor which influences the incentive to seek tax information is the relevance of information. Such an incentive might depend on taxpayers' financial situation. Complex financial situations involve taxpayers in tax-related issues. Self-employed taxpayers, for example, have higher opportunities to evade or avoid taxes and thus have an incentive to get informed about the tax law (see Pinney 1993).

Fiscal ignorance might be an important contributor to the development of negative feelings towards taxation. Lewis (1982) after reviewing the literature of the 70s reports that more educated taxpayers have in general more sympathetic fiscal preferences than those with a lower education. They are better aware of the benefits and services the state provides for the citizens from the revenues.

Experiments in the tax compliance literature have just started to pay attention to the effects of information on tax compliance. They have analysed, for example, the role of fiscal uncertainty by comparing the compliance behaviour in situations when key fiscal parameters are known with certainty to situations in which these parameters are made uncertain (for a survey see Torgler 2002).

A rather new branch of research has started to analyse how computers might influence tax compliance decision. In many countries, the tax administration tries to develop computerised tax decision support systems (for example, the United States or Switzerland). Computer tax packages might reduce the demand for tax specialists. The main advantages are that they provide technical knowledge, especially concerning the tax law, and help to warn taxpayers if they commit certain types of errors (see Masselli et al. 2000). Masselli et al. (2000) analysed the impact of computerised audit flags (information about specific audit risks) on taxpayers' compliance behaviour using experiments, where people had to complete individual income tax returns. Their findings suggest that "novice taxpayers" who are shown audit flags report significantly more income than taxpayers without audit flags. However, the problem is that novices may not properly use the software and thus over-report the taxable

income. The authors argue that individuals with low tax task experience will tend to over-rely on decision aid out of a lack of knowledge.

IV. COMPLEXITY

Complexity may result in unintentional non-compliance if taxpayers have problems with filling the tax form. Furthermore, complexity can reduce the moral costs of evading taxes. Such noncompliance differs from other crimes, because it can be argued that the errors occurred unintentionally due to misinterpretation of the rules. People who are honest will have higher filling costs and thus higher compliance costs. On the other hand, individuals who want to reduce these costs may either fail to take legitimate credits or may even claim credits without ascertaining eligibility. Results from a survey show that only 55% of the taxpayers were certain that they had neither overstated a deduction nor understated taxable income on their return (see Harris and Associates 1987). Thus, by enhancing complexity, it is difficult to distinguish honest from dishonest taxpayers. Krause (2000) states that when rules are complex, compliance and enforcement will be imperfect. It imposes costs on the taxpayers and the tax administration and undermines the effectiveness of the tax policies. Tax examiners in the tax administration will have greater problems to identify a case of noncompliance and comparing whether the violation was deliberate or unintentional (Erard 1997). This can increase tax collection costs. Furthermore, complicated tax laws are sensitive to a broad variety of interpretations (Krause 2000). However, other studies have failed to document a negative relation between complexity and compliance (e.g., Yankelovich, Skelly and White 1984).

One of the main objectives of the US tax reform movements in the 80s was simplification. These movements resulted in the Tax Reform Act of 1986. However, the results of these reforms are treated controversially in the literature. Blumenthal and Slemrod (1992) conducted a survey evaluating the compliance costs after the tax reform, in line with the one done by Slemrod and Sorum (1984) before the tax reform. Their findings suggest that low to middle income taxpayers have compliance costs below average, high income taxpayers pay more for professional assistance and have on average much higher total costs. Furthermore, self-employed taxpayers spend significantly more time and money. The authors conclude that there has been an upward drift in the compliance cost of individual income taxation and there seems to be no evidence that the tax reform controlled or even reduced the growth of the compliance costs.

Complexity may affect taxpayers' perceptions of tax system equity. It can be argued that tax complexity and equity are positively related. A more complex tax law is able to better determine taxpayers' ability to pay and could stop those who would be able to exploit tax rules. On the other hand, additional compliance and administration costs are higher (see Kaplow 1996) and taxpayers could be frustrated. A simplification would reduce taxpayers' expenditures in time and money to comply with the tax law (see Blumenthal and Slemrod 1992). Increasing tax complexity may shift taxpayers' trade-off between costly compliance by using either own effort or external help (tax practitioners) and evading taxes towards the "exit" decision. Smith (1992) used data from a national survey of taxpayers conducted by Louis Harris and Associates, Inc. to analyse, among other variables, the influence of tax system complexity on the IRS procedural fairness (Taxpayer Opinion Survey 1987)³. The results show that complexity significantly reduces the perceived IRS procedural fairness. Furthermore, individuals believed that simplifying the whole tax collection system is the most effective way to better collect tax money. On the other hand, Forest and Sheffrin (2002) did not find a systematic link between perception of complexity and perception of unfairness, using data from the 1990 Taxpayer Opinion Survey with similar questions.

Schmidtchen (1994) argues that tax authority have the possibility to increase tax compliance by creating a more complex tax system as imperfect actors might behave more honestly and follow certain rules when uncertainty increases. This conclusion stands, e.g., in contrast to some survey results (see, for example, Harris and Associates 1987, Vogel 1974). The results from Harris and Associates (1987) suggest that a substantial fraction of *imperfect* compliance behaviour can be attributed to tax complexity. Studies that used TCMP data show that complexity is associated with higher underreporting among nonbusiness returns, but not among business returns (Clotfelter 1983, Witte and Woodbury 1985).

Masselli et al. (2000) stress the problem that an increased technology dominance and sophisticated tax return preparation programs might increase the incentive for tax policy-makers to incorporate additional complexity into the laws, assuming that such a technology will help taxpayers to better comply. They argue that such a strategy will place those taxpayers at a disadvantage who do not wish such a computerised support system. Furthermore, there remains the problem of the proper use of the software.

³ The dependent variable IRS procedural fairness was based on four items answered on a six-point scale from strongly disagree to strongly agree: 1) I am confident that the IRS would never try to take more money from me than they should, 2) IRS procedures and practices are fair and reasonable ones that respect the rights of taxpayers, 3) IRS employees have an unusual amount of honesty and integrity, and 4) You can depend on the IRS to keep accurate tax records (see p. 231).

One could argue that a possibility to react to tax complexity is to deduct the taxes directly from the gross income. However, a system without self-declaration does in some way assume that tax authorities doubt the correctness of taxpayers' declaration. Frey (1997) notes that such a system can have a counter-productive effect. If taxpayers are not seen as responsible persons with the intrinsic motivation to pay taxes they get the feeling that they can as well be opportunistic. Important reactions to such distrustful public laws might be tax evasion or efforts to minimise tax burden by tax avoidance. In this case the interaction between individuals and government is characterised by high transaction costs and low productivity. Sakurai and Braithwaite (2001) show that taxpayers in Australia are comfortable with the self-assessment system and that the majority of taxpayers report confidence in the legitimacy of the claimed deductions. Furthermore, the highest priority for taxpayers was to have a honest tax agent who was able to help taxpayers comply with the law.

In general, not very much empirical evidence is available regarding the effects of a simplification of the tax system on tax compliance. Experiments might be a good instrument to analyse the effects of simplicity on tax compliance, controlling for other factors. Future research could experimentally analyse, e.g., the hypothesis whether tax simplification can increase tax compliance. Such an experimental analysis might be innovative as it would mean to expand the experimental designs from a single choice decision most tax experiments use to a multiple decision process, including, e.g., deductions. Experiment participants must have the possibility to evade in many ways.

V. TAX PRACTITIONERS

Tax practitioners might play a key role in the analysis of tax avoidance. Roth, Scholz and Witte (1989) state:

“Great knowledge about the relationships between tax practitioners and taxpayer compliance could offer one of the most promising areas for improving compliance” (p. 178).

Researchers in the 90s have intensively begun to examine theoretically and empirically the influence of preparers in the tax compliance literature. People need a minimum fiscal knowledge to practice tax avoidance. Otherwise they can use tax practitioners as paid assistance to devise strategies to exploit legal ambiguities. On the other hand it could be

argued that experts reduce compliance costs by reducing legal uncertainties (Beck et al. 1994, Scotchmer 1989) and time or even anxiety costs (Reinganum and Wilde 1991). Therefore, tax practitioners provide services and information and might be

“guardians against unequivocal breaches of the legal code and, on the other hand, exploiters of legally ambiguous features of the tax code to the advantage of the taxpayers” (p. 207).

Generally, a rational taxpayer will compare the marginal benefits which can be acquired with the use of tax preparers with the marginal cost. Long and Caudill (1987) have been among the first to empirically analyse the benefits of a professional tax return. They state that benefits would include such matters as, e.g., time saving, reduction in tax liability based on a tax preparer’s better understanding of the tax law:

“However, the age and growth of the tax return preparation “industry” is probably the strongest evidence of its ability to provide beneficial services to taxpayer-consumers, and it is doubtful that anything except “radical” tax reduction and simplification will seriously threaten its existence” (p. 43).

The empirical analysis indicates that income tax liability is relatively lower when a tax preparer is consulted, holding factors as, e.g., income and filing status constant.

After the introduction of the self-assessment system in Australia in 1986 Sakurai and Braithwaite (2001) report that the number of taxpayers seeking advice from tax practitioners has strongly increased (1980, approximately 20% of the taxpayers compared to 72% in 1992). In the United States approximately half of all federal individual income tax returns are prepared by professional tax return preparers (see, e.g., Blumenthal and Slemrod 1992, Erard 1993).

Scotchmer (1989) points out that the relationship between tax preparers and taxpayers is based on a two-side information asymmetry. Taxpayers have less information about the tax law and the tax liabilities. Furthermore, it is difficult for them to distinguish between high-quality and low-quality tax preparers. Market mechanism might drive low-quality tax preparers out of the supply side. High-quality preparers have an incentive to build up reputation and to signalise their knowledge and ability. Scotchmer describes one possible way: the willingness to offer insurance against wrong advice by guaranteeing free representation of the taxpayer in a legal process and to pay possible fines. On the other hand, tax preparers cannot fully verify the financial information they receive from the taxpayers.

Scotchmer stresses this moral hazard problem, which exists in an insurance contract between tax practitioners and taxpayers:

“If the tax advisor insures the taxpayer against losses due to audit and fine, the taxpayer would withhold from the tax advisor (and from the IRS, at least before audit) information about true taxable income, since, once the advisor becomes liable for fines, the taxpayer is better off underreporting income” (p. 193).

This would imply, as Scotchmer states, to fix the contract only if the tax agent can verify the taxpayers' information. Thus, such a contract will only cover specific points which are relatively easy to control. Markets might create such insurance strategies in an evolutionary way, without state's intervention. The state could intervene in such a market increasing preparers' penalty. The advantage of such a strategy is that taxpayers have an increased incentive to inform tax agents, as they can also be penalised for underreporting. However, there still remains the question how high the penalties should be fixed and how well the tax administration can detect tax agents' avoiding strategies.

Tax agents have the restriction that successful audits result in a penalty that even reduces client's "good" (Kaplan et al. 1988). Such good loss has a substantial influence on tax agents' reputation. It can be argued that experiences with the tax administrations might influence their behaviour. With more experience, tax agents will obtain a higher knowledge on how to deal with tax administrations (see Kaplan et al. 1988).

Many studies show that the average level of noncompliance is higher for returns prepared with paid assistance. Erard (1993) found that the use of a tax practitioner significantly increases tax cheating. Generally, taxpayers with professional help tend to have more complex tax forms, which opens the possibility to cheat or to avoid. Similar results have been found in experiments (see Ayres et al. 1989). Some studies report that preparer's penalty and the importance of the client influence preparer's willingness to recommend aggressive positions (see, e.g., Reckers et al. 1991 and McGill 1988). Tax professionals are more aggressive when audit and penalty risks are low (see McGill 1988). On the other hand, Ducan et al. (1989) did not find that the perceived probability of audit influences tax agents' willingness to encourage aggressive reporting behaviour, but the perceived likelihood of success. Schmidt (2001) found that taxpayers who received aggressive advice from a professional tax preparer (certified public accountant CPA⁴) were more likely to agree to

⁴ Erard (1993) stresses that IRS allows CPAs more freedom than other tax practitioners according to the tax services. They are, for example, permitted to represent clients at IRS hearings and meetings. Furthermore, they

aggressive advices than taxpayers who had such advices from a person without a certified public accountant education (see also Hite and McGill 1992). Other studies indicate that CPA preparers are more aggressive than unregulated preparers (e.g., Ayres et al. 1989), especially in high ambiguity situations (Carnes et al. 1996). The empirical findings of Klepper et al. (1991) indicate that the lower income classes compared to the high income class have a lower amount of ambiguous income. Only around 10 percent of the low income taxpayers use a CPA or lawyer to prepare the return, where high income groups have a much higher percentage of individuals that use lawyers and CPA's.

Based on panel data, Christian et al. (1993) report that paid-prepared returns have larger refunds and smaller total prepayments. Furthermore, time costs are significantly and positively associated with a preparer's usage. The probability of using tax agents is significantly higher for self-employed, married and older taxpayers and increases with complexity (see also Erard 1993). On the other hand, third party assistance decreases with the level of education (see Dubin et al. 1992). Furthermore, Dubin et al. (1992) found that an increase in the IRS audit rate, the frequency of penalties and state, local or real estate taxes significantly increases the demand for practitioners. Long and Caudill's (1987) empirical results show that the probability of using professional tax return preparation is positively related to the income and the marginal tax rate. Erard's (1993) findings, based on an unweighted 25 percent random subsample of the 1979 Internal Revenue Service TCMP Phase III data files, show that income does not significantly influence tax assistance. Tax assistance is rather determined by the kind of sources than by the income level. Erard (1993) also analysed the influences on tax compliance. He found that in self-preparation forms, the presence of business or farm income has a significant positive influence on the unconditional level of non-compliance and people over the age of 65 are more compliant. Furthermore, in the CPA and lawyer category, the presence of capital gains, rents, royalties, business income, or farm income has a significant positive impact on the unconditional level of non-compliance. With data from an unweighted subsample of the 1982 Internal Revenue Service, he shows that a high amount of all observed tax reporting violations can be attributed to unintentional errors. Tax preparers reduce the amount of unintentional reporting errors but increase problems with intentional noncompliance. Interestingly, a prior audit experience is negatively associated with noncompliance for self-preparation and positively for paid-prepared tax declarations.

are mostly better organised and members of the American Institute of Certified Public Accountants and the American Bar Association, which provide access to information about court rulings and legal issues which reduces the costs of using strategies to reduce tax payments.

Martinez-Vazquez and McNab (1997) report the problems of compliance costs in Transition Economies. Taxpayers in Russia and in other countries are required, for example, to file balance sheets and income statements on a quarterly basis. Interestingly, as the need for professional skills had increased, tax officials acted in the market of tax advice. Thus, such a development has the disadvantage that tax officials create their own demand. In other countries as, e.g., in Kazakhstan, the new tax code prohibits such an occupation for tax administration staff.

Sakurai and Braithwaite (2001) show that tax practitioners (taxpayers) are quite successful in finding their suitable client (practitioner). They observe a certain market segmentation. Taxpayers who intend to minimise their taxes and who are high risk takers find tax agents who are good at finding loopholes. On the other hand, risk averse taxpayers find tax agents who fit in their demand. Furthermore, results from Sakura and Braithwaite (2001) show that taxpayers in general trust tax practitioners. Similarly, Hite and McGill (1992) found in an experiment that taxpayers can formulate their preferences for conservative advice. Subjects reported the desire to disengage tax agents when they disagreed, especially with aggressive advice. In general, the results indicate that tax agent users have a strong motivation that the tax returns are filled out accurately. On the other hand, Schmidt (2001) argues that under specific conditions taxpayers have the tendency to agree with aggressive advice. Taxpayers in a balance-due prepayment position are more likely to agree with aggressive advice than taxpayers in a refund position. This finding is consistent with the prospect theory that predicts that individuals will exhibit a higher risk disposition in loss (prepayment) situations and act risk averse in gain (refund) situations (see Kahneman and Tversky 1979). However, despite the analysis has controlled for factors as, e.g., economic sanctions and risk propensity, subjects' response rate (19%) is pretty low which might produce a certain bias.

The tax compliance literature that has analysed the role of tax practitioners has strongly focused on, e.g., the compliance level of taxpayers who engaged tax agents, on the demand for tax preparation and on factors that affect tax preparers' behaviour (see Hite and McGill 1992). Generally, future research steps might stronger focus on the question to which extent or under which condition tax practitioners (taxpayers) encourage taxpayers (tax practitioners) to take more risk finding possibilities to act in the grey areas of tax law.

VI. CONCLUSIONS

The intention in this paper is to show the general relevance of tax avoidance and thus to analyse the related topics tax complexity, tax knowledge and information and tax practitioners. It was not the aim to present or to develop theoretical models of tax avoidance. That has already been done in other works as, e.g., Slemrod and Yitzhaki (1998). As researchers have just started to analyse the role of tax practitioners, we rarely find a survey on this topic. As a high number of taxpayers employ paid tax return preparers, more empirical work might be helpful to understand the interaction between taxpayers and tax agents and the effect of the interaction on tax compliance and tax morale. Especially the dynamic component of tax avoidance and the relationship between tax agents and taxpayers should be interesting to analyse. One possibility would be to use laboratory experiments based on more than one round. Another strategy would be to conduct panel studies that include taxpayers and their agents. Furthermore, previous studies have only analysed traditional economic factors such as perceived probability of losing their clients, risk attitudes or preparers' penalties. Further studies could also analyse other aspects as, e.g., the influence of social norms or equity considerations on tax agents' behaviour⁵. There are not many studies that analyse moral considerations in the relationship between tax agent and taxpayer. Cruz et al. (2000) found that tax agents' ethical judgements and self-reported behaviour intentions are impacted by moral equity considerations. However, the main restriction in their regression analysis is the low number of observations (67). Furthermore, the findings of LaRue and Reckers (1989) suggest that ethical considerations such as fairness, perceived morality or cultural acceptability of their behaviour influences tax agents' decision making.

One way to analyse such components is to conduct experiments, which can, for example, analyse the influence of social norms, without defining precisely what social norms are but just looking at the tax compliance behaviour. Similar to the bargaining literature, cross-country experiments could be done. Laboratory experiments have the advantage to hold many factors constant, in order to investigate compliance behaviour across various cultural settings. Thus, it is possible to isolate cultural effects. The observed behaviour difference can be explained by differences in institutional features and by differences in social norms across these countries.

⁵ For a general survey on the tax compliance literature that outline alternative theories and empirical findings see Torgler (2001).

A step forward in the tax compliance literature could be made integrating “cheap talk” and democratic elements as voting into the analysis. How do institutions as, e.g., democratic rights or local autonomy affect tax law complexity, tax avoidance, tax practitioners’ behaviour or even the interaction between taxpayers and tax agents.

Table 1

Future Research Possibilities

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| <ol style="list-style-type: none"> 1. More empirical studies (e.g., surveys, panels, experiments from different countries).
- There is a lack of empirical evidence outside the United States. 2. Consideration of dynamic aspects (e.g., the relationship between taxpayer and tax agent). 3. Analysis whether tax simplification has a positive effect on tax compliance. 4. Extension of the economic analysis with psychological elements (e.g., social norms, equity, fairness, ethical considerations). 5. Integration of the effects of institutions as, e.g., democratic rights or local autonomy on taxpayers’, tax preparers’ and tax administrations’ behaviour. |
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As we can see there still remain quite underdeveloped areas of research in the analysis of tax avoidance, tax complexity, tax knowledge and information and tax practitioners which would merit more attention. Tax compliance research in the 90s has shown that taxpayers are not independent decision makers, but interact with other actors as tax practitioners, tax administration and government.

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Alm, J. and N. J. McCallin (1990). Tax Avoidance and Tax Evasion as a Joint Portfolio Choice, *Public Finance*. 45: 193-200.
- Ayres, F., L. Betty, R. Jackson and P. Hite (1989). The Economic Benefits of Regulation: Evidence from Professional Tax Preparers, *The Accounting Review*. 64: 300-312.
- Beck, P. J. Davis and W. Jung (1994). Tax Advise and Reporting Under Uncertainty: Theory and A. Experimental Evidence. Working Paper, University of Illinois.
- Blumenthal, M. and J. Slemrod (1992). The Compliance Cost of the U.S. Individual Income Tax System: A Second Look After Tax Reform, *National Tax Journal*. 45: 185-2002.
- Braithwaite, J. (2001). Through the Eyes of the Advisers: A Fresh Look at Tax Compliance of High Wealth Individuals, Working Paper No 21, Centre for Tax System Integrity, Canberra.
- Carnes, G. A., G. Harwood and R. Sawyers (1996). The Determinants of Tax Professionals' Aggressiveness in Ambiguous Situations, *Advances in Taxation*. 8: 1-26.
- Christian, C. W., S. Gupta and S. Lin (1993). Determinants of Tax Preparer Usage: Evidence From Panel Data, *National Tax Journal*. 46: 487-503.
- Clotfelter, C. T. (1983). Tax Evasion and Tax Rate: An Analysis of Individual Return, *The Review of Economics and Statistics*. 65: 363-373.
- Cross, R. and G. K. Shaw (1982). On the Economics of Tax Aversion, *Public Finance*. 37: 36-37.
- Cruz, C. A., W. E. Shaker and J. R. Strawser (2000). A Multidimensional Analysis of Tax Practitioners' Ethical Judgements, *Journal of Business Ethics*. 24: 223-244.
- Dubin, J. A., M. J. Graetz, M. A. Udell and L. L. Wilde (1992). The Demand for Tax Return Preparation Services, *Review of Economics and Statistics*. 74: 75-82.
- Duncan, W. A., D. W. LaRue and P. M. J. Reckers (1989). An Empirical Examination of the Influence of Selected Economic and Noneconomic Variables in Decision Making by Tax Professionals, *Advances in Taxation*. 2: 91-106.
- Erard, B. (1993). Taxation with Representation: An Analysis of the Role of Tax Practitioners in Tax Compliance, *Journal of Public Economics*. 52: 163-197.
- Erard, B. (1997). Self-Selection with Measurement Errors: A Microeconomic Analysis of the Decision to Seek Tax Assistance and its Implication for Tax Compliance, *Journal of Econometrics*. 81: 319-356.
- Eriksen, K. and L. Fallan (1996). Tax Knowledge and Attitudes Towards Taxation; A Report on a Quasi-Experiment, *Journal of Economic Psychology*. 17: 387-402.
- Forest, A. and S. M. Sheffrin (2002). Complexity and Compliance: An Empirical Investigation, *National Tax Journal*. 55: 75-88.

- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.
- Geeroms, H. and H. Wilmots (1985). An Empirical Model of Tax Evasion and Tax Avoidance, *Public Finance*. 40: 190-209.
- Harris and Associates, Inc. (1987). Taxpayer Opinion Survey, conducted for the U.S. Internal Revenue Service, Internal Revenue Service Document 7292, Washington, DC.
- Hite, P. A. and G. McGill (1992). An Examination of Taxpayer Preference for Aggressive Tax Advice, *National Tax Journal*. 45: 389-403.
- Kahneman, D. and A. Tversky (1979) Prospect Theory: An Analysis of Decision Under Risk, *Econometrica*. 47: 263-291.
- Kaplan, E. S., P. M. J. Reckers, S. G. West and J. C. Boyd (1988). An Examination of Tax Reporting Recommendations of Professional Tax Preparers, *Journal of Economic Psychology*. 9: 427-443.
- Kaplow, L. (1996). How Tax Complexity and Enforcement Affect the Equity and Efficiency of the Income Tax, *National Tax Journal*. 49: 135-50.
- Kirchler, E., B. Maciejovsky and F. Schneider (2001). Mental Accounting and the Impact of Tax Penalty and Audit Frequency on the Declaration of Income: An Experimental Analysis, Discussion Paper 182. Humboldt-University of Berlin, 2001.
- Klepper, S. ., M. Mazur and D. Nagin (1991). Expert Intermediaries and Legal Compliance: The Case of Tax Preparers, *Journal of Law and Economics*. 34: 205-229.
- Krause, K. (2000). Tax Complexity: Problem or Opportunity, *Public Finance Review*. 28: 395-414.
- LaRue, D. and P. M. J. Reckers (1989). An Empirical Examination of the Influence of Selected Factors on Professional Tax Preparers' Decision Process, *Advances in Taxation*. 7: 37-50.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Long, J. E. and S. B. Caudill (1987). The Usage and Benefits of Paid Tax Return Preparation, *National Tax Journal*. 40: 35-46.
- Long, J. E. and J. D. Gwartney (1987). Income Tax Avoidance: Evidence from Individual Tax Return, *National Tax Journal*. 40: 517-532.
- Martinez-Vazquez, J. and R. McNab (1997). Tax Systems in Transition Economics, Working Paper 97-1, Georgia State University.
- Masselli, J., R. Ricketts, V. Arnold and S. G. Sutton (2000). The Impact of Embedded Intelligent Agents of Tax Compliance Decisions, unpublished manuscript, Texas Tech University.
- McBarnet, D. (1992). The Construction of Compliance and the Challenge for Control: The Limits of Noncompliance Research, in: J. Slemrod (ed.), *Why People Pay Taxes*. Ann Arbor: The University of Michigan Press: 333-348.
- McGill, G. A. (1988). The CPA's Role in Income Tax Compliance: An Empirical Study of Variability in Recommending Aggressive Tax Positions, Ph.D. Dissertation, Texas Tech University.

- Pinney, N. A. (1993). Will I Be Audited? Rational Versus Cognitive Theories of the Informed Citizen, Ph.D. thesis, University of New York.
- Pope, J. and R. Fayle (1990). The Compliance Cost of Personal Income Taxation in Australia 1986/87: Empirical Results, *Australian Tax Forum*. 7: 85-126.
- Reckers, P. M. J., D. L. Sanders and R. W. Wyndels (1991). An Empirical Investigation of Factors Influencing Tax Practitioner Compliance, *Journal of the American Taxation Association*. 13: 30-46.
- Reinganum, J. F. and L. L. Wilde (1991). Equilibrium Enforcement and Compliance in the Presence of Tax Practitioners, *Journal of Law Economics and Organization*. 7: 163-181.
- Roth, J., J. Scholz and A. D. Witte (1989). *Taxpayer Compliance*. Philadelphia: University of Pennsylvania Press.
- Sakurai, Y. and V. Braithwaite (2001). Taxpayers' Perceptions of the Ideal Tax Adviser: Playing Safe or Saving Dollars?, Working Paper No 5, The Australian National University, Centre of Tax System Integrity.
- Sandford, C. (1973). *The Hidden Costs of Taxation*. London: The Institute for Fiscal Studies.
- Sandford, C., M. Godwin and P. Hardwick (1989). Administrative and Compliance Costs of Taxation, Fiscal Publications. Bath.
- Schmidt, D. R. (2001). The Prospects of Taxpayer Agreement with Aggressive Tax Advice, *Journal of Economic Psychology*. 22: 157-172.
- Schmidtchen, D. (1994). Vom nichtmarginalen Charakter der Steuermoral, in: C. Smekal und E. Theurl (eds.), *Stand und Entwicklung der Finanzpsychologie*, Baden-Baden: Nomos: 185-211.
- Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement, Ann Arbor: University of Michigan Press: 223-258.
- Scotchmer, S. (1989). The Effect of Tax Advisors on Tax Compliance, in: J. A. Roth and J. T. Scholz (eds.), *Taxpayer Compliance: Social Science Perspective*, Vol. 2. University of Pennsylvania Press: 182-199.
- Slemrod, J. and S. Yitzhaki (1998). Tax Avoidance, Evasion, and Administration, NBER Working Paper 7473.
- Slemrod, J. and N. Sorum (1984). The Compliance Cost of the U.S. Individual Income Tax System, *National Tax Journal*. 37: 461-474.
- Torgler, B. (2001). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-683.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.

Witte, A. D. and D. F. Woodbury (1985). The Effect of Tax Laws and Tax Administration on Tax Compliance, *National Tax Journal*. 38: 1-14.

Yankelovich, Skelly and White, Inc. (1984). Taxpayer Attitudes Survey: Final Report, Public Opinion Survey Prepared for the Public Affairs Division, Internal Revenue Service, New York

CHAPTER V

IS TAX EVASION NEVER JUSTIFIABLE?*

ABSTRACT

Discussions about tax evasion often assume that tax evasion is not desirable. Thus, this paper analyses people's value regarding tax evasion using the World Values Surveys. Our data analysis shows that tax morale did not fall significantly in the OECD and developing countries. On the other hand, there is a decline in tax morale for the former Soviet Union and Central and Eastern European countries. Furthermore, we find a significant negative correlation between tax morale and the size of shadow economy. Finally, we focus on constitutions, showing the importance of a legitimated political process.

JEL classification: H260

Keywords: tax morale, tax compliance and tax evasion

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I. INTRODUCTION

Discussions about tax evasion are often based on the assumption that tax evasion is not desirable. Economists see the problem as one of rational decision made under uncertainty. This means that cheating on taxes is a gamble paying off in lower taxes or, with the probability of detection, ending in sanctions. This view of taxpayer behaviour was first presented in a formal model by Allingham and Sandmo (1972), influenced by the economics-of-crime approach (see Becker 1968).

It is often argued that tax evasion results in a loss of tax revenues which causes the government to find ways to recoup the lost revenues by, e.g., raising tax rates, increasing the audit probability or fine rates (see, for example, Hansson 1982).

In this paper we analyse people's value regarding tax evasion, which we simply define as tax morale. There is a lack of cross-country studies on tax morale. Therefore, we are going to analyse data between 1981 and 1997 from the World Values Survey (WVS). Our findings show that there is a broad variation of tax morale around different countries. However, compared to the 70s and early 80s, when tax revolts were quite frequent, tax morale seems not to decrease. The only exception are transition countries, where tax morale on average decreased between 1990 and 1997. Furthermore, we find a significant negative correlation between tax morale and the size of shadow economy. We also try to evaluate under which conditions tax evasion might be seen as "desirable" or not.

After the discussion of some often neglected or not discussed thoughts about tax evasion in Section II, Section III analyses the values regarding tax evasion using the World Values Survey (WVS). Section IV uses a constitutional approach to show situations in which taxpayers have a strong incentive to evade taxes and stresses the importance of institutions to resolve such incentives to evade taxes. The article concludes with some final remarks.

II. EARLY THOUGHTS ABOUT TAX EVASION

The Roman asked Christ the following question: "Is it right to pay taxes to Caesar or not?". Christ responds: "Give to Caesar what is Caesar's, and to God, what is God's" (Matthew 22:17-21).

We first take a look back upon the way early thoughts valued tax evasion. Those thoughts have a strong ethical and religious background. Generally, there are not many economic studies which focus on the moral obligation of paying taxes. Tax evasion was strongly discussed, for example, among monks. Therefore, a short insight, without being extensive, is given into early thoughts on tax evasion.

Martin T. Crowe (1944, pp. 42-88) analysed the morality of tax evasion focusing on the question to what extent and under what virtue a just law does bind in conscience. Crowe (1944) gives a good overview of relevant views between the 15th and 19th century. Angelus of Clavasio (1411-1495) was among the first to argue that tax laws do not oblige in conscience to pay taxes. He claims that when tax money is misused, subjects do not have to pay taxes. Antoninus (1389-1449) had the opinion that those are excused who evade an unjust tax. But if people do not pay lawful taxes, they commit a crime of rapine or theft and thus are bound to make restitution and have to do penance for the sin they committed. Genicot-Salsmans (1856-1900) stated that there is no obligation to pay taxes before the amount to be paid is determined by the state. Generally, he condoned partial evasion as the state does not have the right to unjustly burden “conscientious men” with heavier taxes. Other authors as Molina (1536-1600) argued that the tax law determines a debt in justice and people must pay taxes (similar views by, e.g., Suarez 1548-1617, Bonacina around 1631, Laymann 1574-1635). According to these authors there is an obligation to pay taxes even if officials do not ask for payment through error or similar reasons. Billuart (1685-1757) argued that the duty of paying taxes is a duty of natural law, despite the exact amount to be paid is determined by the civil law. Waffelaert (1847-1931) stated that the amount of money to be spent and the way it is collected are determined by deputies which were elected by the people. Thus, people are obligated to give the deputies whatever is necessary. Once the state has determined the taxes to be paid, it had the right to take penal and civil actions against evaders.

The morality of disobedience to religious rules and constitutions was widely discussed among monks. For example, while St. Bernard saw that all the rules and constitutions bind under the pain of sin, the Dominican Order had an opposed view. Thomas Aquinas argued that not every violation of a religious rule is *per se* sinful. Laws, which are framed by individuals, are either just or unjust. Only if they are just they have the power of binding (see Crowe 1944). According to Crowe (p. 22-26) just tax must be: 1) placed by a legitimated legislative authority, 2) for just cause and not for hindering or helping business in any individual state and 3) in line with a just distribution of the tax burden. He states:

“Fiscal taxes may not be imposed unless there is a real public need” (p. 23).

Gronbacher (1998) analyses Church’s attitude towards taxation. He argues that the Church had similar concerns with taxation as classical liberal writers, who often criticise the use of revenue by the state. However, the Church’s concern was less to limit state’s ability to impose taxes than to stress people’s and business’ liberty. Taxation was, for example, a topic in the epoch of Leo XIII (papal encyclical *Rerum Novarum*) and Pius XI (papal encyclical, *Quadragesimo Anno*). According to Leo XIII, taxes could not be levied for reasons other than the requirements of the common good. Pius XI states in 1931 a less extreme opinion, not claiming or denying the state’s right to taxation but exhorting it to avoid extremes. There must be a harmony between common good and private ownership. Interestingly, in the 30s American bishops defended private ownership and encouraged people to become informed on issues of taxation and thus to be “tax-conscious” (see Gronbacher 1998).

Other religions also deny the obligation to pay taxes under certain circumstances. McGee (1998), for example, states that Muslims are not obligated to pay all taxes. If the government engages in activities that are not legitimated, tax evasion might not be immoral (for a list of possible immoral state activities see Yusuf 1971). It would, e.g., not be immoral for a Muslim not to pay indirect taxes, evade paying tariffs, evading income taxes or not complying with a law that causes prices to rise. However, evading property taxes might be immoral (McGee 1998).

III. TAX MORALE AROUND THE WORLD

We now turn to the question how individuals around the world evaluate tax evasion. Many years ago, Spicer and Lundstedt (1974) argued that the choice between tax compliance and evasion does not result only from sanctions but also from a set of attitudes and norms. We now focus on the value regarding tax evasion which we define as tax morale.

As attitudes refer to several beliefs on a specific topic (e.g., Likert scale), a value refers to a single belief on a very specific topic. According to Rokeach (1973), the concept of values is more dynamic than the one of attitudes, having a more immediate link to human motivations. Looking at the literature he notes that attitudes are seen as a function of values. Furthermore, presenting a broad variety of empirical evidence he points out that values often significantly predict behaviour. According to Ajzen and Fishbein (1980) and Lewis (1982),

behaviour can be predicted from behavioural intentions and those from attitudes and subjective norms, which can be predicted from beliefs. However, Bagozzi et al. (1989) after reviewing the literature concerning the direct path from attitudes to behaviour state, that the existing findings give a mixed picture, where some studies found a significant direct effect and others did not.

We do not find many cross-country studies which analyse tax morale. Strümpel (1969) analysed tax morale and the tax systems on the basis of an international comparative survey research in Europe. In Germany, tax morale was comparatively low. In the 60s a relatively coercive tax-enforcement technique was used. Strümpel argues that such an alienation negatively influences tax morale, measured by attitudes toward the tax offender and the tax system and by the perception of equity. On the other hand, in England taxpayers were treated with great caution. The British tax system

“dispenses with every form of administrative auditing, offers a rich reservoir of loopholes, and imposes much less obligatory accounting procedures than the German law” (p. 29).

Such a cautious administrative behaviour helps to cultivate tax morale and reduces tax compliance costs (see also Section IV). However, Strümpel states that such a system offers easy opportunities for avoidance and evasion. Strümpel criticised the French, Italian, and the Spanish tax systems:

“They are at the same time “inefficient” and “expensive”; inefficient, because only an extremely crude procedure of income-tax assessment can be enforced and because the revenue is insufficient for meeting the needs of a modern industrial nation; expensive, because the chance to realise at least this primitive system without provoking tax resistance has been sacrificed” (Strümpel 1969, p. 30).

Weck (1983), Weck, Pommerehne and Frey (1984), and Frey and Weck-Hannemann (1984) developed a “tax immorality” index, based on survey questions for the years 1960, 1965, 1970, 1975 and 1978 (see *Table 1*) and attributed in numbers to get a ranking for the purpose of cardinal measurement. For lack of comparable data, the United States, Canada, Japan and Ireland are attributed a median rank, lying between the Scandinavian countries and including Britain, Netherlands and the German speaking countries.

It can be observed that there is great variance of tax immorality between the countries. Romanic countries as France, Italy and Spain have a higher tax immorality than the other

countries. Italy has the highest values (between 10.4 and 20.4) and Switzerland the lowest (between 0.6 and 1.2). Generally, according to this data, there is a strong tendency towards a higher tax immorality (see last column in *Table 1*).

Table 1
Development of Tax Immorality

<i>country</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1978</i>	<i>1960-1978</i>
Austria	5.5	6.7	9.0	10.6	10.9	5.4
Belgium	7.1	8.6	11.6	13.7	14.0	6.9
Denmark	2.2	2.7	3.6	4.2	4.4	2.2
West Germany	5.5	6.7	9.0	10.6	10.9	5.4
Finland	2.2	2.7	3.6	4.2	4.4	2.2
France	8.7	10.6	14.3	16.9	17.3	8.6
Great Britain	2.2	2.7	3.6	4.2	4.4	2.2
Ireland	3.8	4.7	6.3	7.4	7.6	3.8
Italy	10.4	12.6	17.0	20.1	20.6	10.2
Japan	3.8	4.7	6.3	7.4	7.6	3.8
Canada	3.8	4.7	6.3	7.4	7.6	3.8
Netherlands	5.5	6.7	9.0	10.6	10.9	5.4
Norway	2.2	2.7	3.6	4.2	4.4	2.2
Sweden	2.2	2.7	3.6	4.2	4.4	2.2
Switzerland	0.6	0.7	1.0	1.2	1.2	0.6
Spain	7.1	8.6	11.6	13.7	14.0	6.9
USA	3.8	4.7	6.3	7.4	7.6	3.8

Source: Weck (1983, p. 134).

However, the developed index is based on strong assumptions. For example, it assumes that the same decline of tax morale as in the United States took place in all other countries. Thus, the ranking of the countries is unchanged over time. The United States development is based on the following questions (Frey and Weck-Hannemann 1984, p. 37): “Do you consider the amount of federal income tax which you have to pay too high?”, “Do you think that governments waste a lot of money?”, “Do you think that the government is untrustworthy?” and finally “Do you think that the government does not care much what people like you think?”. The authors took the average share of affirmative answers and developed an index.

In our analysis we expand the number of countries integrating also developing countries (Africa, Asia and Central and South America), transition countries in Central and

Eastern Europe and the states of the former Soviet Union. Furthermore, we do not assume similar developments over time. We use data from the World Values Survey (WVS, 1981-1984, 1990-1993 and 1995-1997). The WVS permits to make cross-country comparison of people's tax morale in more than 40 societies around the world, which represents about 70 percent of the world population, based on representative national samples. Thus, the WVS has the advantage to cover a wide variety of religious and cultural traditions and helps to analyse value changes over time.

The general question to assess the level of tax morale in a society is:

Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (...) Cheating on tax if you have the chance (% "never justified" – code 1 from a ten-point scale where 1=never and 10=always).

According to Bosco and Mittone (1997), the decision to evade can be seen as a sort of two-step process, where people first decide to evade or to pay taxes and then decide how much money to evade. The important factor is not the amount of money evaded but the decision to evade. Thus, in order to present a descriptive cross-cultural comparison, we dichotomised the responses, and compare only the percentage of individuals who argued that tax evasion is "never justified".

Table 2 presents the results from 23 OECD countries. Among these, Japan has the highest tax morale rate throughout the fifteen years. Generally, tax morale varies between 38.5% (Ireland 1981-1984) and 81.9% (Japan 1990-1993). The average rate varies between 54.5 in the years 1990-1993 and 58.8% in 1995-1997. The main disadvantage of the WVS Survey is the fact that only 7 countries participated in all three surveys over the time. Thus, the average values must be treated with caution. While there are countries as Spain, Australia, USA, Northern Ireland with a tendency to a higher tax morale rate over time, other countries as Sweden, West and East Germany, Italy, Switzerland, Great Britain, Canada, East Germany or Belgium have a decreasing rate.

The results are comparable with the findings of Weck (1983). In both analyses, Belgium, West Germany, France, Netherlands are examples for a low tax morale, and countries as Switzerland, USA, Canada, Japan for a relatively high morality. Our results do not confirm a great difference between Northern Europe and Romanic states. Furthermore, we do not see a decrease of tax morale in the 80s and the 90s. This findings are in line with the argument of Buchanan (1999) who states that the "temperature of taxpayers" in the 1980s and the 1990s is quite low after the years of taxpayers' revolts in the late 1970s:

“Yet, in place of revolt and threatened revolution, we now observe taxpayers, generally, in some apparent state of apathy. They seem quite willing to acquiesce in the heavy burden of current taxation, and even, on occasion, to support increases that are tied directly to popular spending initiatives” (p. 3).

Table 2
Tax Morale in OECD Countries (in %)

Countries	1981-1984	1990-1993	1995-1997
Australia	47.7		62.1
Austria		62.3	
Belgium	43.3	33.9	
Canada	66.9	59.2	
Denmark	58.5	57.3	
Finland	58.7	40.3	57.4
France	48.9	46.5	
West-Germany	52.7	40.4	40.1
East-Germany		67.2	53.7
Great Britain	58.2	53.9	
Iceland	56.9	56.0	
Ireland	38.5	48.8	
North-Ireland	52.8	69.7	
Italy	74.7	55.2	
Japan	81.8	81.9	80.6
Netherlands	37.9	42.9	
Norway	40.3	43.1	47.5
Portugal		39.9	
Spain	49.9	58.4	69.5
Sweden	68.8	56.4	49.3
Switzerland		63.8	53.5
USA	67.0	66.7	73.6
Average	55.8	54.5	58.7

Source: author's calculations from the WVS.

Table 3 shows the results of the developing countries. There is a clear difference between countries in Africa or Middle and South America and Asia in the years 1990-1993. However, five years later, the differences have decreased. Tax morale varies between 37.3 (Mexico 1990-1993) and 96.3% Bangladesh (1995-1997). Similar to the OECD countries, the problem is that there are not many observations throughout all the years. Generally, tax morale in Asia

is pretty high and similar to the observations in Japan. Similar to the OECD countries there is a strong variance in tax morale over time and regions. Thus, it seems that tax morale is not really stable over time. This might indicate, that exogenous changes and institutional structures influence tax morale (e.g., real growth, policy shifts, tax reforms).

Table 3
Tax Morale in Developing Countries (in %)

Countries	1981-1984	1990-1993	1995-1997
<i>Africa</i>			
Ghana			74.2
Nigeria		62.5	65.9
South Africa	52.5	62.5	65.4
Average	52.5	62.5	68.5
<i>Central, South Africa and Caribic</i>			
Argentina	64.4	80.5	72.1
Brazil		60.8	46.8
Chile		75.7	64.2
Colombia			72.2
Dominican Republic			70.4
Mexico	48.9	37.3	54.7
Peru			62.7
Puerto Rico			74.4
Uruguay			80.3
Venezuela			70.6
Average	56.65	63.6	66.8
<i>Asia</i>			
Bangladesh			96.3
China		78.7	79
India		82.9	77
Philippines			38.2
South Korea	76.4	89.9	71.6
Taiwan			63.7
Average	76.4	83.8	71.0

Source: author's calculations from the WVS.

Finally, *Table 4* covers the periods 1990-1993 to 1995-1997 for transition countries in Central and Eastern Europe and states of the former Soviet Union. While the average tax morale rate in the years 1990-1993 are similar to the OECD and developing countries, the picture changes for the years 1995-1997. There is a decay of tax morale to observe. This effect is much

stronger for former Soviet Union countries than for Central and Eastern Europe countries. The rate varies between 31.3% (Latvia 1995-1997) and Slovenia 68.5% (1990-1993).

Table 4
Tax Morale in Transition Countries (in %)

Countries	1990-1993	1995-1997
<i>Former Soviet Union</i>		
Azerbaijan		47.8
Belarus	44.4	40.7
Estonia	64.6	42.4
Georgia		49.7
Latvia	64.4	31.3
Lithuania	57.0	46.1
Moldova		39.0
Russia	54.2	46.4
Ukraine		41.4
Average	56.9	42.8
<i>Central and Eastern Europe</i>		
Armenia		41.1
Bulgaria	57.4	65.3
Bosnia		56.4
Croatia		36.6
Hungary	56.3	
Macedonia		61.4
Montenegro		48.4
Poland	49.3	55.2
Romania	67.7	
Slovenia	68.5	53.9
Serbia		56.0
Average	59.8	52.7

Source: author's calculations from the WVS.

There are different methods to directly measure tax evasion. Two major methods can be used to quantify the extent of tax evasion: a micro- and a macroeconomic approach (Bayar and Frank 1987). Measuring the underground economy is one method to measure the extent of tax evasion. Schneider and Enste (2000) have estimated the size of shadow economy for quite a broad list of countries. Therefore, it could be interesting to analyse the relationship between tax morale and the size of shadow economy. However, such comparisons should be interpreted carefully. There remains the question how aggregated survey findings can be

compared to macroeconomic indicators as the size of shadow economy. And it should be considered that we use only one question to measure tax morale, which may reduce predictive reliability. Other factors could also influence the answers. It is possible, for example, that in some areas it is common or not common for individuals to give an own statement about tax evasion (Lewis 1982).

We only analyse whether there is a correlation between tax morale and the size of shadow economy. However, simple correlations do not per se tell us anything about causes and effects. For a deeper analysis, a multivariate regressions should be done.

Table 5 illustrates the relationship between tax morale and the size of shadow economy as % of GDP for the years 1994-1997. Africa, Central and South America and Asia were not estimated by Schneider and Enste (1998) and thus are not taken into account. So, we can only consider 22 countries, 8 OECD countries and 14 countries from the former Soviet Union and Central and Eastern Europe. To estimate the size of shadow economy for the OECD countries, Schneider and Enste (1998) applied the currency demand method¹. The values for the former Soviet Union and Central and Eastern Europe countries were estimated with the physical input method². As there are often vast differences in quantitative magnitude due to different methodologies, we used the average of the resulting estimations³.

Figure 1 shows a scatterplot of “tax morale” and the average size of shadow economy in 1994-1997. Each country represents a single dot in the figure. The negative relationship is statistically and economically significant. The correlation is -0.458 with a significance at the 0.05 level (p-value = 0.032).

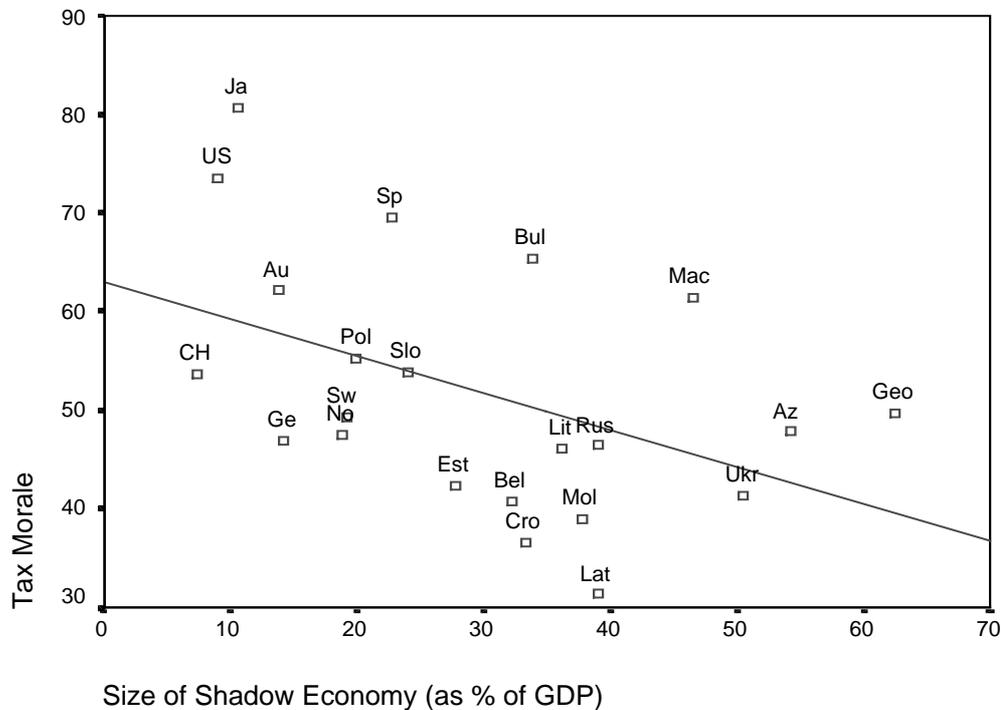
¹ The currency demand approach focuses on the cash payments in the shadow economy. A higher shadow economy increases the demand for currency (for deep discussion see Schneider and Enste 1998).

² The physical input method argues that electricity consumption is an indicator of economic activity. The estimated shadow economy can be reached by subtracting this indicator from the estimated GDP (see also Schneider and Enste 1998).

³ The strong variance according to the estimation method has made many authors sceptical. Tanzi (1999) states: “the estimates of the underground economy obtained applying different methods to the same country have continued to be uncomfortably divergent. In fact, rather than decreasing, the range of these estimates has increased” (p. 339).

Figure 1

Correlation between Tax Morale and the Size of Shadow Economy (1994-1997)



We have seen that in this data evaluation we could only integrate 8 OECD countries. One possibility would be to consider also the previous World Values Survey (1990-1993), where we can find much more OECD countries. However, in these years, there are less observations for the former Soviet Union, Central and Eastern Europe countries. Furthermore, in the beginning of the 1990s, the transition economies were confronted with unusual circumstances, which may reduce the possibility to take useful comparison statistical analysis. To increase the amount of observations and to test the robustness of the negative relationship, we changed the OECD's country values (tax morale and the size of shadow economy) of the years 1994-1997 with the ones of the years 1991-1993. It should be noted that the average rate of tax morale in OECD countries is quite stable over the years. *Table 6* presents the data of the implemented OECD countries and *Figure 2* the scatterplot.

Table 5
Tax Morale and the Size of Shadow Economy (1994-1997)

	<i>Tax Morale (%)</i>	<i>Size of Shadow Economy (%)</i>
	<i>1995-1997</i>	<i>Average 1994-1997</i>
Japan (Ja)	80.6	10.6
US	73.6	9.0
Spain (Sp)	69.5	22.7
Bulgaria (Bul)	65.3	33.9
Austria (Au)	62.1	13.9
Macedonia (Mac)	61.4	46.5
Poland (Pol)	55.2	19.9
Slovenia (Slo)	53.9	24.0
Switzerland (CH)	53.7	7.3
Georgia (Geo)	49.7	62.6
Sweden (Sw)	49.3	19.1
Azerbaijan (Az)	47.8	54.2
Norway (No)	47.5	18.8
Germany (Ge)	46.9	14.2
Russia (Rus)	46.4	39.0
Lithuania	46.1	36.1
Estonia (Est)	42.4	27.8
Ukraine (Ukr)	41.4	50.5
Belarus (Bel)	40.7	32.3
Moldova (Mol)	39.0	37.7
Croatia (Cro)	36.6	33.4
Latvia (Lat)	31.3	39.1

Source: author's calculations from the WVS and average calculation using the data by Schneider and Enste (1998, pp. 101-102).

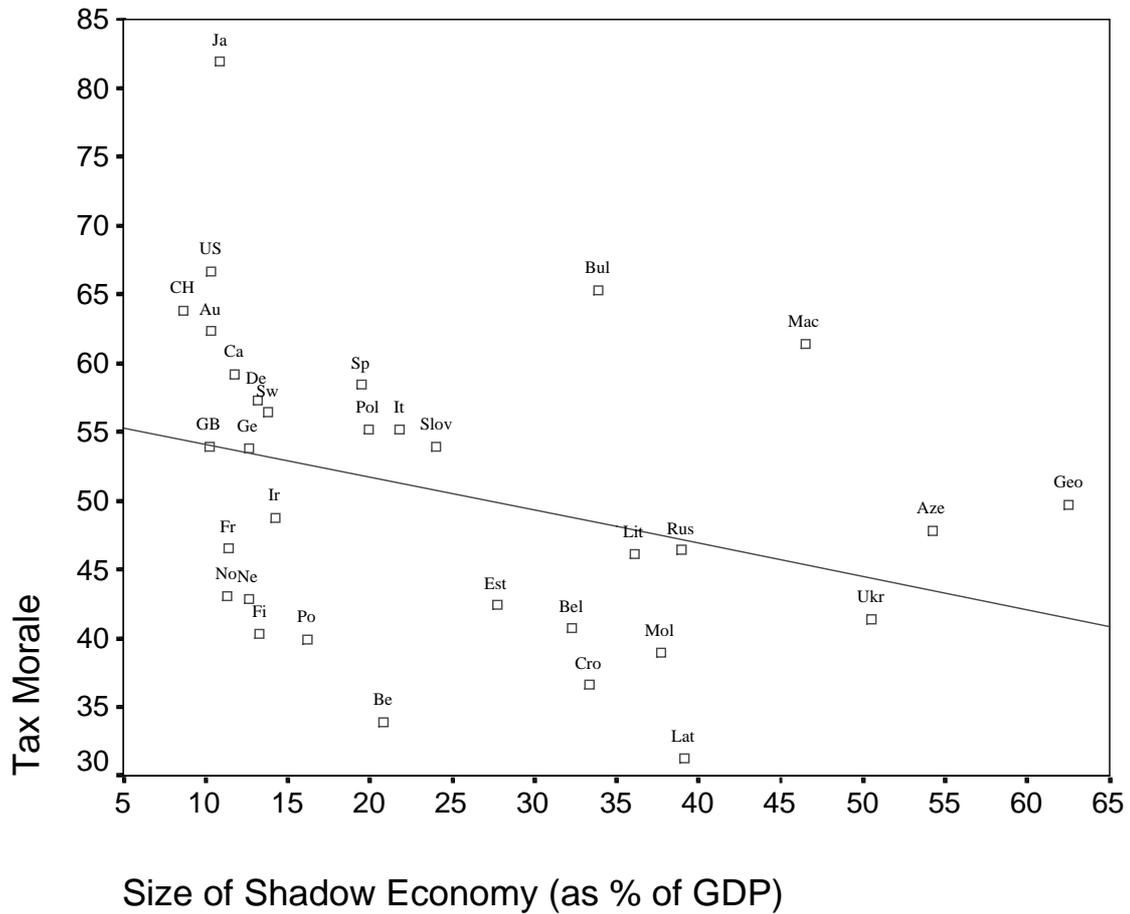
Notes: To calculate tax morale in Germany, the average between West and East Germany has been taken.

To measure the size of the shadow economy, the average of the two extreme values of four studies is taken, one using the physical input method and three the currency demand method (see Schneider and Enste 1998).

As *Figure 2* shows, there still remains a negative relationship between tax morale and the size of shadow economy. The correlation is -0.325 with a significance at the 0.10 level (p-value = 0.070).

Figure 2

Correlation between Tax Morale and the Size of Shadow Economy (1990-1997)



Despite the fact that we have used only a single value which defines the degree of tax morale, the results show that there is a significant relationship between tax morale and the size of shadow economy.

IV. A CONSTITUTIONAL APPROACH

Spicer (1990) argues to the point that:

“ A constitutional perspective on the desirability or undesirability of tax evasion provides an advantage over conventional models of evasion in that it avoids making unrealistic assumptions both about government and taxpayers. It furthermore avoids the difficulty in including certain types of preferences while excluding others. It does, of course leave open the difficult question as to whether or not constitutional checks on taxing powers are adequate and, therefore, one cannot per se assert that tax evasion is undesirable or desirable on the basis of such an analysis. It does at least direct us to the question which should be addressed, rather than side-stepped, in attempting to assess the normative consequences of tax evasion” (pp. 124-125).

Tax evasion depends on how governments define illegal activities. Therefore, it is important to analyse how tax rules have been implemented. There is a difference between those tax rules which have been implemented by a democratically legitimated political process and those forced by a dictator or by a not legitimated process or government. Brennan and Buchanan (1977) analysed constitutional choice among tax institutions. Central to their analysis is the question how taxpayers can secure and insure

“the benefits of governmentally-provided goods and services (including the enforcement of contracts and claims to property titles, without which market trading would hardly be feasible), while avoiding vulnerability to exploitation by the Leviathan-like institutions that may be uncontrollable once they are established” (p. 259).

There is a difference between those who violate the rules they have agreed to and those who were not integrated in the constitutional design of the tax structure and the tax law, because they were born after the constitutional process. McGee (1996) gives the example of the United States, where 1913 individual income tax had been given voters' consent. Many of those who expressed their consent now are not alive anymore. He points out:

“so even if consenting to be taxed is viewed as a contract between citizens and the state, the contract is null and void as far as those who did not consent are concerned” (p. 18).

While the former can be defined as free riders, the latter might be seen as reformers (Eusepi 1999). However, if on the constitutional level decision makers are enwrapped in a “veil of ignorance” regarding their future position, they might vote for a fair tax system (see Rawls 1971 and Buchanan 1987). Nevertheless, the factor time makes explicit that the tax law is revised in order to guarantee intergenerational contractual equality.

Generally, many government expenditures are used to benefit special interests, as, e.g., tariffs, import quotas and thus protection of domestic firms from foreign competition. As a consequence consumers pay more for protected goods. And what if the government provides benefits but people did not ask for them? How big is the deadweight loss because of administrative costs of government?

Kirchgässner (1994) compares the control possibilities between direct (progressive) and indirect taxes (proportional). The usual way to increase indirect taxes is to change the law, which imposes the parliamentary process or in some countries even taxpayers’ participation via a referendum. As a consequence, public discussion is ensured and politicians will act carefully under the re-election restriction. On the other hand, as Kirchgässner (1994) states, tax revenue with progressive direct taxes not only increases when private income increases but also as long as inflation prevails and there is no inflation index adjustment. A higher revenue is collected without tax law modulations. Thus, as Kirchgässner concludes, government has a stronger incentive to behave as a Leviathan and taxpayers’ control possibilities must be higher. He proposes to use progressive taxes where taxpayers have more influence, for example, at the lower governmental levels.

1. Authoritarian Systems

McGee (1996) argues that there is nothing immoral about tax evasion, if tax revenues are collected to finance a Dictator’s war machine. There could even be a moral duty not to pay taxes. There might be situations in which tax-evaders are not per se thieves, but taxation is theft and tax evasion an attempt to prevent a theft from taking place:

“If a robber wants to raise \$1’000 and forces you and your friends to empty your pockets, is it unethical not to tell the thief that you have \$20 in your shoe, even if the failure to declare the \$20 results in having your friends pay a larger share, because you are paying less?” (McGee 1996, pp. 17-18).

In authoritarian political systems elections play a lesser role than in democracies. People will search for other “voice” or “exit” mechanisms as, e.g., demonstrations, protests or leaving the country etc. to express their preferences. However, such instruments are quite costly. Thus, people’s preferences are less integrated in the political system. Mueller (2001) points out that in a totalitarian state:

“There is no need for democratic institutions, since there is no need to consult individual citizens as to what state policies should be. The holy books of the state religion define what is right and wrong” (p. 162).

An authoritarian system takes many decisions for the citizens they could take themselves. Should individuals pay taxes without a doubt in such a system, which does not put into account their preferences? It can be hardly assumed that all citizens have the same preferences and these preferences match with the authoritarian state’s goal. On the contrary, one would predict that such systems would transfer more benefits to specific groups. Thus, the authoritarian government appropriates more resources for its own use. High resources will be used to seek group support by bribing or by suppressing specific groups (see Frey and Eichenberger 2001).

2. Developing Countries

There are situations in some developing countries where law-breaking helps to survive. If people want to open a business, to acquire land or build homes they are confronted with high transaction costs. Hernando de Soto (2000) tested this and wanted to create a new and perfectly legal small business in Lima. His team spent six hours a day at it and registered the business 289 days later. The cost of legal registration was \$1’231, thirty-one times the monthly minimum wage. To obtain the authorisation to build a house on state-owned land took six years and 11 months, with 207 administrative steps in 52 government offices and for a legal title to that piece of land even 728 steps. Similar experiences have been made, e.g., in the Philippines, Egypt and Haiti. Furthermore, de Soto argues that it is nearly as difficult to *stay* legal as it is to *become* legal. In Venezuela, the share of employees working in legal enterprises decreased from two third in 1976 to less than half in our days. Thus, people have created new business illegally to fill the gaps in the legal economy. The informal businesses are measured in Mexico (1994) with a total of 2.65 million. De Soto argues that the only real

choice for such governments is to integrate those resources into an orderly and coherent legal framework or continue to live in anarchy.

Frey and Eichenberger (1999) argue that developing countries have often the situation of “over-government” and “under-government” (p. 89). There is a strong combination of interventionism and bureaucracy. On the other hand, property rights are not sufficiently secured and there is a high degree of uncertainty which reduces the incentive for investment. The government has a strong discretionary power over the allocation of resources which enhances corruption. Thus, corruption affects the pattern of resource allocation and income distribution (see Jain 2001). Corrupt bureaucracy will not award the services to the most efficient producers, but to the producer which offers the larger bribes. Further, bureaucrats have an incentive to delay transactions in order to extract higher payments (see Rose-Ackerman 1997). Frey and Eichenberger (1999) point out:

“The state has to be strong enough to enforce legal rules and especially property rights which are prerequisites for economic development. At the same time government institutions have to be ‘weak’ in the sense of not exploiting the citizens, for example, by expropriating them without compensation or taxing them excessively” (p. 91).

Generally, tax evasion can be seen as an “exit” option, a signal through which taxpayers can express their disagreement. Tax evasion restricts government’s ability to act as a Leviathan by maximising the own preferences. Thus, tax evasion might reduce the tax revenues and therefore the size of government. It could be argued that the government rises the tax rate and thus increases the tax revenue. However, Spicer (1987) shows in a model that tax evasion can lead to lower tax rates. He argues that the tax rate can be seen as a “price” of the tax base to taxpayers. Similar to the market price, a reduced demand lowers the price a monopoly can charge for its products. Therefore, a reduction in taxpayers’ demand for tax base reduces the tax rate the government can charge.

Looking back in history, it is interesting to notice that the Jews’ exodus from ancient Egypt is said to have been caused by the ruthless taxation by the Pharaohs. Furthermore, heavy taxation on everyday necessities of life before the French Revolution did favour its outbreak (see Adams 1993).

3. Possibilities

One way to reduce the problem is to put the authorities in more direct contact with reality and the problems to be solved. Hernando de Soto (2000) states that if informality results from a lack of communication between government and the people, the local level helps to be closer to the individuals. Many issues can be handled and resolved efficiently on a small scale. A local power imposing taxes which is independent from the central government develops incentives to adequately fulfil local preferences. For this, political and fiscal autonomy is one of the most important elements. Furthermore, the “exit” option is an effective mechanism for expressing individual preferences for public goods. Citizens reveal their preferences by choosing to live in the community with the adequate public goods. In analogy with market competition, there is a competition among mobile citizens.

In direct democracies voters have the possibility to influence tax law indirectly or directly. It offers the possibility to control the “classe politique”. In a direct democracy, taxpayers might be aware that constitutions which strongly limit the taxing power also limit the power of the government to respond to the taxpayers’ demand. Thus, a rational taxpayer, as Spicer (1990) argues, will weight benefits against the costs of a tax constitution and would only approve if the benefits are greater than the costs:

“Such reasoning will lead the individual, if free to choose, to develop an ‘optimal’ tax constitution such that additional or marginal limitations on the taxing power of government would be expected to yield a net cost to the individual. Given such an optimal tax constitution, tax evasion would then be undesirable because it would overly restrict the power of government to collect tax revenues and finance desired goods and services” (p. 123).

V. CONCLUSIONS

The intention of this paper is to analyse the attitudes regarding tax evasion. First some value judgements of older thoughts have been presented. There seems to be a certain consensus that tax evasion is rather allowed when taxes are unfair, the government acts inappropriately or the government is not legitimated. The important part was to present broad data on how individuals in around 60 countries judge tax evasion, which we simply defined as tax morale. Furthermore, to get a certain idea about the development of tax morale, we analyse the three

cross-country surveys between the years 1981 and 1997 of the World Values Survey. This analysis can be seen as an extension of the work that has been done in the 1960s by researchers as Strümpel (1969) and Schmolders (1960, 1970a, 1970b) and in the beginning of the 1980s by Weck (1983), Weck, Pommerehne and Frey (1984) and Frey and Weck-Hannemann (1984). We have seen that there is quite a range of variation of tax morale among different countries and regions. Furthermore, our data show that tax morale did not fall significantly between the years 1981-1984 and 1995-1997 in OECD and developing countries. On the other hand, there is a decline in tax morale for the former Soviet Union and Central and Eastern Europe countries. These findings are contrary to those of the 70s, a time with many tax revolts, where a decline in tax morale has been observed. We saw a significant negative correlation between tax morale and the size of shadow economy. However, such simple correlations do not per se tell us anything about the causes and the effects. A multivariate regression analysis would help to get further insights.

The constitutional analysis shows the importance of legitimated political processes which develop the tax law. As Spicer (1990) states, constitutional political economy gives a

“basis for normative evaluation of tax rules and institutions by establishing a legitimate link between the individual and the state” (p. 122).

Focusing on the political process, we have seen that it is not always necessary to restrict the governments' and taxpayers' possibility set to increase the incentives to comply with the tax law. It is important to include taxpayers' preferences into the political process and thus to decide how a government should be restricted. This allows to accumulate social capital which helps to enforce the relational or psychological contract between taxpayers and tax authorities.

APPENDIX

Table A1
Sampling for the 1995-1997 World Values Survey

<i>country</i>	<i>N</i>	<i>country</i>	<i>N</i>
Argentina	1079	Mexico	1510
Armenia	2000	Moldova	984
Australia	2048	Montenegro	240
Azerbaijan	2002	Nigeria	2769
Bangladesh	1525	Norway	1127
Belarus	2092	Peru	1211
Bosnia-Hercegovina	1200	Philippines	1200
Brazil	1149	Poland	1153
Bulgaria	1072	Russia	2040
Chile	1000	Serbia	1280
China	1500	Slovenia	1007
Colombia	6025	South Africa	2935
Croatia	1196	South Korea	1249
Dominican Republic	417	Spain	1211
East Germany	1009	Sweden	1009
Estonia	1021	Switzerland	1212
Finland	987	Taiwan	1452
Georgia	2593	Turkey	1907
Ghana	96	Ukraine	2811
Great Britain	1093	Puerto Rico	1164
India	2040	Uruguay	1000
Japan	1054	USA	1542
Latvia	1200	Venezuela	1200
Lithuania	1009	West Germany	1017
Macedonia	995		

Source: Inglehart et al. (2000).

Table A2
Sampling for the 1990-1993 World Values Survey

<i>country</i>	<i>N</i>	<i>country</i>	<i>N</i>
Argentina	1002	Japan	1011
Austria	1460	Latvia	903
Belarus	1015	Lithuania	1000
Belgium	2792	Mexico	1531
Brazil	1782	Netherlands	1017
Bulgaria	1034	Nigeria	1001
Canada	1730	Northern Ireland	304
Chile	1500	Norway	1239
China	1000	Poland	938
Denmark	1030	Portugal	1185
East Germany	1336	Romania	1103
Estonia	1008	Russia	1961
Finland	588	Slovenia	1035
France	1002	South Africa	2736
Great Britain	1484	South Korea	1251
Hungary	999	Spain	2637
Iceland	702	Sweden	1510
India	2500	Switzerland	1400
Ireland	1000	USA	1839
Italy	2018	West Germany	2101

Source: Inglehart et al. (2000).

Table A3
Sampling for the 1990-1993 World Values Survey

<i>country</i>	<i>N</i>	<i>country</i>	<i>N</i>
Argentina	1005	Ireland	1217
Australia	1228	Italy	1348
Belgium	1145	Mexico	1837
Canada	1254	Netherlands	1221
Denmark	1182	Northern Ireland	312
Japan	1204	Norway	1246
Finland	1003	South Africa	1596
France	1200	South Korea	970
West Germany	1305	Spain	2303
Great Britain	1231	Sweden	954
Iceland	927	USA	2325

Source: Inglehart et al. (2000).

REFERENCES

- Adams, C. (1993). *For Good and Evil. The Impact of Taxes on the Course of Civilization*. London: Madison Brooks.
- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Ajzen, I. and M. Fishbein (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs: Prentice-Hall.
- Becker, G. S. (1968). Crime and Punishment: An Economic Approach, *Journal of Political Economy*. 76: 169-217.
- Bagozzi, R., J. Baumgartner and Y. Yi (1989). An Investigation into the Role of Intentions as Mediators of the Attitude-Behavior Relationship, *Journal of Economic Psychology*. 10: 35-62.
- Bayar, A. and M. Frank (1987). The Erosion of the Different Tax Bases, *Public Finance*. 42: 341-356.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Brennan, G. and J. M. Buchanan (1977). Towards a Tax Constitution for Leviathan, *Journal of Public Economics*. 8: 255-273.
- Buchanan, J. M. (1987). The Constitutions of Economic Policy, *American Economic Review*. 77: 243-250.
- Buchanan, J. M. (1999). Taxpayer Apathy, Institutional Inertia, and Economic Growth, *Journal of Public Finance and Public Choice*. 17: 3-10.
- Crowe, M. T. (1944). *The Moral Obligation of Paying Just Taxes*. Washington D. C.: The Catholic University of America Studies in Sacred Theology, No. 84.
- de Soto, H. (2000). *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Eusepi, G. (1999). Wolves, Knaves or Citizens? Changing Rules by Changing Rulers, Paper prepared for the Annual Meeting of the European Public Choice Society, Lisbon (Portugal), April 7-10.
- Frey, B. S. and R. Eichenberger (1999). *The New Democratic Federalism for Europe*. Cheltenham, UK: Edward Elgar.
- Frey, B. S. and R. Eichenberger (2001). The Political Economy of Stabilization Programmes in Developing Countries, in B. S. Frey (eds.), *Inspiring Economics. Human Motivation in Political Economy*. Cheltenham, UK: Edward Elgar: 163-183.
- Frey, B. S. and H. Weck-Hannemann (1984). The Hidden Economy as an 'Unobserved' Variable, *European Economic Review*. 26: 33-53.
- Gronbacher, G. M. A. (1998). Taxation: Catholic Social Thought and Classical Liberalism, in: R. W. McGee (ed.), *The Ethics of Tax Evasion*. South Orange: The Dumont Institute for Public Policy: 158-167.

- Hansson, I (1982). The Underground Economy in a High Tax Country: The Case of Sweden, in: V. Tanzi (ed.), *The Underground Economy in the United States and Abroad*. Toronto: Lexington Books: 233-243.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Jain, A. K. (2001). Corruption: A Review, *Journal of Economic Surveys*. 15: 71-121.
- Kirchgässner, G. (1994). Constitutional Economics and its Relevance for the Evolution of Rules, *KYKLOS*. 47: 321-340.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- McGee, R. W. (1996). When Is Tax Evasion Unethical?, Working Paper, Policy Analysis No. 11. International Business & Technical Consultants, Inc.
- McGee, R. W. (1998). The Ethics of Tax Evasion in Islam, in: R. W. McGee (ed.), *The Ethics of Tax Evasion*. South Orange: The Dumont Institute for Public Policy Research: 214-219.
- Mueller, D. S. (2001). Centralism, Federalism, and the Nature of Individual Preferences, *Constitutional Political Economy*. 12: 161-172.
- Peacock, A. and G. K. Shaw (1982). Tax Evasion and Tax Revenue Loss, *Public Finance*. 37: 269-278.
- Rawls, J. (1971). *A Theory of Justice*. Cambridge: Harvard University Press.
- Rokeach, M. (1973). *The Nature of Human Values*. New York: The Free Press.
- Rose-Ackerman (1997). The Political Economy of Corruption, in: K. A. Elliott (ed.). *Corruption and the Global Economy*. Washington D.C.: Institute for International Economics: 31-60.
- Schmölders, G. (1960). *Das Irrationale in der öffentlichen Finanzwissenschaft*. Hamburg: Rowolt.
- Schmölders, G. (1970a). Survey Research in Public Finance: A Behavioral Approach to Fiscal Theory, *Public Finance*. 25: 300-306.
- Schmölders, G. (1970b). *Finanz- und Steuerpsychologie*. Hamburg: Rowolt.
- Schneider, F. and D. Enste (1998). Shadow Economies: Size, Causes, and Consequences, *Journal of Economic Literature*. 38: 77-114.
- Sen, A. (1977). Rational Fools: A Critique of the Behavioural Foundation of Economic Theory, *Philosophy and Public Affairs*. 6: 317-344.
- Sen, A. (1992). *Inequality Reexamined*. Oxford: Blackwell.
- Spicer, M. W. (1987). The Effect of Tax Evasion on Tax Rates Under Leviathan, *National Tax Journal*. 40: 625-628.
- Spicer, M. W. (1990). On the Desirability of Tax Evasion: Conventional Versus Constitutional Economic Perspectives, *Public Finance*. 45: 118:126.
- Spicer, M. W. and S. B. Lundstedt (1976). Understanding Tax Evasion, *Public Finance*. 31: 295-304.
- Strümpel, B. (1969). The Contribution of Survey Research to Public Finance, in: A. T. Peacock (ed.), *Quantitative Analysis in Public Finance*. New York: Praeger Publishers: 14-32.

- Tanzi, V. (1999). Uses and Abuses of Estimates of the Underground Economy, *Economic Journal*. 109:338-347.
- Weck, H. (1983). *Schattenwirtschaft: Eine Möglichkeit zur Einschränkung der öffentlichen Verwaltung?* Eine ökonomische Analyse. Finanzwissenschaftliche Schriften 22. Bern: Lang.
- Weck, H., W. W. Pommerehne and B. S. Frey (1984). *Schattenwirtschaft*. München: Franz Vahlen.
- Yusuf, S. M. (1971). *Economic Justice in Islam*. Lahore: Sh. Muhammad Ashraf.

PART TWO:

WHAT SHAPES TAX MORALE?

Most studies treat “tax morale” as a black box without discussing or even considering how it might arise or how it might be maintained. It is usually perceived as being part of the meta-preferences of taxpayers and used as the residuum in the analysis capturing unknown influences to tax evasion. The more interesting question then is which factors shape the emergence and maintenance of tax morale” (pp. 88-89).

Lars P. Feld and Bruno S. Frey (2002). Trust Breeds Trust: How Taxpayers Are Treated, *Economics of Governance*. 3: 87-99.

I. TRUST AND INSTITUTIONS

That taxation is a boring topic is demonstrably rubbish. In reality, it appears boring only to those who are uninterested in human nature and the institutions that have been designed to channel human nature to build productive civilizations. Taxation is about the relationship between individuals and the state, about how a society overcomes the free-rider impulse that threatens to undermine beneficial collective action, and about honesty and trust (p. 145).

Joel Slemrod (2003). Tax from Any Angle: Reflections on Multi-Disciplinary Tax Research, *National Tax Journal*. 56: 145-151.

CHAPTER VI

TAX MORALE, RULE-GOVERNED BEHAVIOUR AND TRUST*

ABSTRACT

This paper outlines the relevance of rules to understand tax morale. It tries to find explanations why taxpayers obey, rather than simply evade taxes. The development of a typology of taxpayers shows that the same tax rules can have different compliance effects. Furthermore, the paper provides evidence with two data sets, the World Values Survey and the Taxpayers Opinion Survey that trust in public officials and the legal system have a significant positive effect on tax morale.

JEL classification: H260, K420

Keywords: tax morale, tax compliance, rule-governed behaviour, trust

* Forthcoming: Benno Torgler (2003). Tax Morale, Rule-Governed Behaviour and Trust, *Constitutional Political Economy*.

I. INTRODUCTION

There is almost no civilization that did not tax. Six thousand years ago, tax history started with records on clay cones in Sumer with the inscription “There were the tax collectors” (Adams 1993, p. 2).

This paper intends to outline the relevance of rules to understand tax morale and tax compliance. Focusing on rules means that we analyse the process of tax honesty and not just the outcome. The paper also intends to find explanations of why taxpayers obey, rather than simply evade taxes. Thus, we are going to analyse tax morale empirically as dependent variable and not as a residual explanation, as it is mostly done in the tax compliance literature.

After this short introduction, Section II focuses on the theory of rule-governed behaviour and tries to outline its significance and its limitation for understanding tax morale and tax compliance. Section III develops different taxpayer typologies. Section IV analyses with simple models how different taxpayers behave regarding a variation of factors. Section V analyses the relevance of an alternative factor, namely trust in government, to increase tax morale and tax compliance. Thus, Section VI conducts an empirical analysis using two data sets, the World Values Survey and the Taxpayers Opinion Survey, to check the correlation between tax morale and trust in government. The article concludes with some final remarks.

II. RULE-GOVERNED BEHAVIOUR

What are the reasons why people are more co-operative than seems to be rational given the enforcement structure? One reason might be that taxpayers have the tendency to follow specific rules rather than acting in the line of standard economic rational choice theory of cheating. Rules might be an explanation why taxpayers behave co-operatively. Taxpayers may follow rules they know or trust to produce good results. Thus, rules are chosen according to past experience. Filling out the tax form is an activity repeated every year. The latest tax forms are often taken as a reference point. There is a kind of routine in filling it out. Uninformed taxpayers without such personal experience may rely on second-hand knowledge, e.g., what they are told by friends. Thus, a taxpayer resorts to backward-looking or roundabout procedures of rule following, instead of optimising case by case. Tax-filling behaviour is guided by a certain routine, a collection of rules and procedures that guide behaviour in the regular tax filling procedure. This process has a personal component and is

done separately from other individuals. Thus, the typology of a person plays an important role in determining which routines are followed and which are not. Routine helps define the possibility set in which individuals act. Davis (2001) points out that an

“important dimension of routines is that the rules and procedures they involve typically possess an element of obligatoriness. Following a routine means one *ought* to follow certain rules and adopt certain procedures in the circumstances in which the routine applies” (p. 125).

However, we are going to see that not only personal factors play a relevant role in determining individuals’ setting but also institutional structures.

Let us look at a famous paragraph from Descartes’ *Discours de la méthode*:

“imitating in this the example of travelers who, when they have lost their way in a forest, ought not to wander from side to side, far less remain in one place, but proceed constantly towards the same side in as straight a line as possible, without changing their direction for slight reasons, although perhaps it might be chance alone which at first determined the selection; for in this way, if they do not exactly reach the point they desire, they will come at least in the end to some place that will probably be preferable to the middle of a forest” (translation, 1897-1910: 24).

Continuous evaluation and re-evaluation requires so much time that costs can be reduced (time gained) by following the first direction (see Elster 1986). The traveller will get more quickly out of the forest if she/he constantly follows a perhaps randomly (arbitrarily) chosen path (rule of thumb). Adjustments of direction can have the disadvantage of walking around in a circle. Elster (1986) states:

“The decision to follow a straight line is a *genuine* decision; an act of commission, not of omission. It is made before the event, and is not a mere rationalization made up (or imputed to the actor) after the event, and having the occurrence of the event as its sole or main evidence” (p. 58).

This interpretation is near to Herbert Simon’s (1955) theory of satisficing. In decisive situations, where someone does not know much about the possibilities of action and their consequences, the concept of the “bounded rationality” gains importance. Following such a rule helps economise on the cost of information. Simon focuses on the process rather than the outcome of decision making. According to Simon the process of selective search was

characterised by procedures such as heuristics for evaluating consequences, and strategies such as satisficing for making choices. Thus, individuals behave as “satisficers” and not as optimisers. They seek among the alternatives within their reach until they find an acceptable option. If they do not find any acceptable solution, they reduce their ambitions and seek on a lower level. Thus, the criteria are specified by aspiration levels which are adapted in response to search outcome. Simon’s research program was closely connected with the existence of external, social constraints. In a world characterised by scarce resources and information it is rational to take rules as guidelines in standard situations.

Heiner (1983, 1990) studied the behavioural implications of imperfect choice. People may not always react optimally to information. In his analysis Heiner starts with imperfect decisions and ends with systematic behaviour. There is a systematic incentive to regulate choices with rules in order to make behaviour more predictable. It is an attempt to understand the dynamic processes rather than the observed behaviour. Rules restrict the flexibility to choose potential actions and thus simplify the prediction of behaviour. Thus, imperfect choice can provide a theoretical foundation for constitutional economics. Heiner assumes that there is a gap between an agent’s competence and the difficulty of the decision problem (C-D gap). He stresses that it is its presence which conditions a certain regularity in the behaviour. The C-D gap is influenced by two variables: environmental variables (e), which determine the complexity of the decision problem, and perceptual variables (p), which characterise an agent’s competence. According to Heiner, uncertainty is negatively related to the perceptual abilities and positively to the complexity of the environment. He uses the probability concept to define an agent’s reliability (ρ) at deciding when to follow a set of rules and when to deviate from it. ρ is the ratio of the conditional probability of rightly decide to deviate from a set of rules when it is genuinely preferred to do so (r_d), and of the conditional probability of wrongly decide to deviate (w_d , thus, $\rho_d = r_d / w_d$, reliability ratio). If r_d is 1 and $w_d = 0$ and thus $\rho = \infty$, than a person would always rightly deviate and never wrongly deviate from a set of rules (perfect agent). However, this situation is the limiting extreme, because agents would not benefit from always following the rules. Therefore, Heiner argues that such an analysis enables a broader understanding of rationality, defined as a range of behavioural possibilities. He states:

“In so doing, the analysis also shows how traditional modelling tools can be modified with reliability concepts in order to explicitly investigate imperfect choice, even though such tools were originally motivated from the assumption of optimal decisions” (Heiner 1990, p. 31).

Furthermore, the probability of the right situation to select an action (π) may also be unknown to an agent. π is correctly recognised with probability r . Heiner (1983) analyses when the selection of a new action is sufficiently reliable for an agent to benefit from the flexibility. For this, he determines when the gains (g) from selecting the action under the right conditions will cumulate faster than the losses (l) from selecting it under the wrong conditions. Thus, the expected gain from allowing flexibility is $g * r * \pi$, and the expected loss $l * w * (1 - \pi)$. We obtain the *reliability condition* (p. 566) when the expected gain is higher than the loss.

$$\rho = \frac{r}{w} > \frac{l}{g} * \frac{1-\pi}{\pi} = T \quad (1)$$

where ρ (reliability ratio) measures the probability of correctly responding under the right circumstances in relation to the probability of mistakenly responding under the wrong circumstances and T is the tolerance limit. The right hand side represents a tolerance limit which ρ must satisfy. Heiner (1983) gives the following answer on when to allow *flexibility*:

“do so if the actual reliability in selecting the action exceeds the minimum required reliability necessary to improve performance” (p. 566).

Schmidtchen (1994) has applied Heiner’s approach to analysing tax compliance. As seen above, a perfect actor will only evade if he/she never gets caught. On the contrary, an imperfect actor behaves honestly and follows certain rules ($\rho < \infty$). The higher the uncertainty, the lower ρ . Imagine that the flexibility is defined as tax evasion. Schmidtchen assumes that r and w are functions of the frequency of evasion (h). h is a unconditional probability of choosing tax evasion (a). If we assume that T increases, r and w also increase, with the consequence that tax evasion is less often chosen. Furthermore, if $\rho \leq T$ and h is between 0 and 1, tax evasion will never be done. Thus, according to Schmidtchen, tax morale is the optimal choice for an imperfect taxpayer acting rationally in his/her view putting into account the limited evaluation abilities.

The policy consequences of that explanation of tax morale is not unproblematic. Tax authorities have the possibility to increase tax compliance by creating a more complex tax system. This conclusion is in contrast to some survey results (for an overview see Torgler 2002). The analysis of Schmidtchen neglected the role of institutions and their impact on tax morale and tax compliance. Introducing institutions leads to a contrary hypothesis. Institutions can help reduce uncertainty without reducing tax compliance and tax morale. They define the

possibility set and thus provide the area of taxpayers' action and interaction with other actors as, e.g., tax administration, government, other taxpayers, or tax advisors. Institutions establish trust and reflect useful procedures from the past and are thus "storehouses of knowledge" (Kasper and Streit 1999). Uncertainty about others' actions is a problem when we believe that the others are not going to contribute to the public good evading taxes. Institutions provide a reduction of uncertainty by designing the provided structure of interaction. As a consequence, greater certainty in the political process is gained. Ensley and Munger (2001) point out that

"if rules are not formalized, the players may spend too much time arguing over the rules and less time competing in productive activities" (p. 116).

Institutions taxpayers perceive as fair and efficient might have a positive effect on tax morale (see Torgler 2001a for a survey).

III. TAXPAYERS' TYPOLOGY

Schlicht (1990) argues that emotions play an important part in keeping routines or rules intact. They are stabilised by norms of justice, fairness, and appropriateness. However, if there are different typologies of taxpayers, different rules and factors may affect behaviour differently and perhaps cause a movement away from the previous rules. Contrary to the fully rational actor, each type of taxpayer has already made a decision before filling out the tax forms. S/he has decided or internalised which behavioural rules to follow. Thus, each type of taxpayer systematically disregards or considers specific information.

There are already projects aiming at this direction (see, e.g, Hessing et al. 1992). Kelman's (1965) work, which was adapted to tax compliance by Vogel (1974), illustrates how people can comply for different reasons. Compliance, identification and internalisation are Kelman's tripartite typology. "Compliers" pay their taxes because people are required to do so and fear the consequences if they do not. "Identifiers" are influenced by social norms and the beliefs and behaviours of people close or of importance to them. "Internalisers" have a consistency between their beliefs and their behaviour.

Similar to the work of Vogel (1974), we develop different kinds of taxpayers. We are going to define four types of taxpayers:

1. Social Taxpayer

“Social Taxpayers” are influenced by social norms, feel guilty when they under-report and escape detection and feel ashamed when they under-report and get caught. Furthermore, they are very sensitive to people’s belief, especially of those close to them. They react emotionally and very strongly to perceived changes next to them. They can be seen as conditional co-operators. If they perceive that others pay taxes they tend to pay them too. On the other hand, a reduction of others’ contribution reduces their willingness to contribute. Satisfaction and behaviour are linked not only to the objective outcome levels, but also to outcomes received in relation to those which were judged to be fair. Furthermore, a perceived inequity between one’s own exchange and the exchanges others get creates a sense of distress. Disadvantage in such a situation causes anger, advantage, feelings of guilt (see Adams 1965 and Homans 1961). Anger reduces the moral costs of evasion. People will engage in behaviours, as tax evasion, intended to restore equity (see, e.g., Webley et al. 1991).

2. Intrinsic Taxpayer

Another type of taxpayer is the “Intrinsic Taxpayer”. The motivation of the “Intrinsic Taxpayers” includes among others, the feeling of obligation, which motivates a person without being forced¹. “Intrinsic Taxpayers” are sensitive to institutional factors, as e.g., the behaviour of governments or tax administrations. Positive actions by the state are intended to increase taxpayers’ positive attitudes and commitment to the tax system, tax-payment, and thus compliant behaviour. The way people are treated by the authorities affects their evaluations of authorities and their willingness to co-operate. They have a certain intrinsic motivation to pay taxes. However, if the intrinsic motivation is not recognised, intrinsic taxpayers get the feeling that they can as well be opportunistic. When monitoring and penalties for noncompliance increase, individuals notice that extrinsic motivation has increased, which on the other hand crowds out intrinsic motivation to comply with taxes (see, e.g., Frey 1997, 2001). Their willingness to co-operate does not depend on the amount others contribute to the public good. Thus, they are not conditional regarding the others’ contribution, but they depend on the institutional conditions under which they must pay their taxes.

¹ For a broad discussion of the intrinsic motivation see Frey (2001).

3. *Honest Taxpayer*

A third type of taxpayers is called “Honest Taxpayer”. These taxpayers do not even search for ways to cheat at taxes. Their behaviour does not respond to changes in the tax policy parameters, as taxes, fine rates, or audit frequency. Thus, their behaviour is not subject to a marginal but rather an absolute evaluation (see Frey 1997). Long and Swingen (1991) point out that “some individuals are simply predisposed NOT to evade” (p. 130). Experiments show that a certain number of taxpayers behave honestly throughout all rounds.

4. *Tax Evader*

At the other extreme, there are the “Tax Evaders”. Relative price changes due to higher punishment or higher audit probability are considered. In general they have a low tax morale. It can be argued that for these taxpayers the standard economic rational choice theory comes into play. They compare the expected value of evading taxes with the value of being honest.

IV. TAXPAYERS’ BEHAVIOUR

First we are going to analyse how these different taxpayers behave regarding a variation of main factors. It makes sense to visualise the different groups with graphics and simple models. For this, we assume the following simple general conditions (see Schmidtchen 1994). The individual’s goal is to maximise the expected value. It is assumed that people are risk-neutral.

1. *Tax Evader*

The expected value from the choice of how much income to report is:

$$EV = (1-p) ((Y - tDY) + p (Y - tDY - f(Y - DY)) \quad (2)$$

where:

Y is income before taxation

DY is the declared income

t is the tax rate

p is the probability of detection and

f the fine rate on unpaid taxes.

If we maximise *equation* by the declared income DY , we receive:

$$p * f = t \quad (3)$$

Figure 2
Tax Evaders

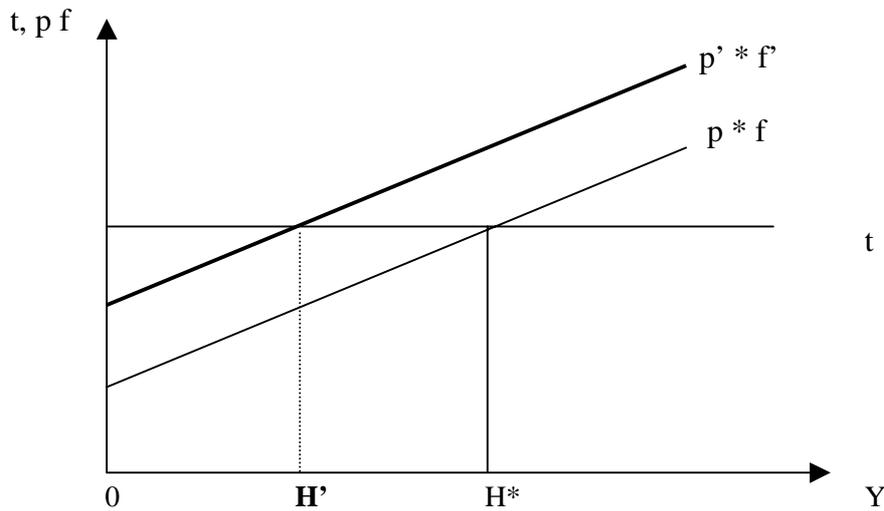


Figure 2 shows how “Tax Evaders” behave. H^* is the non declared income, defined as $Y-DY$. Changes in the audit parameters p and f change their behaviour. Thus, a higher probability of detection and higher fines move the curve upwards and reduce H (from H^* to H').

2. Social Taxpayer

Equation 7 shows the difference between “Tax Evaders” and “Social Taxpayers”.

$$EV = (1-p) ((Y - tDY) + p (Y - tDY - f (Y - DY)) - d(Y-DY) \quad (4)$$

where :

d is the disutility from evading (social factor), depending on how much taxes someone evades

Instead of equation (3) we have the following condition:

$$p * f = t - d \quad (5)$$

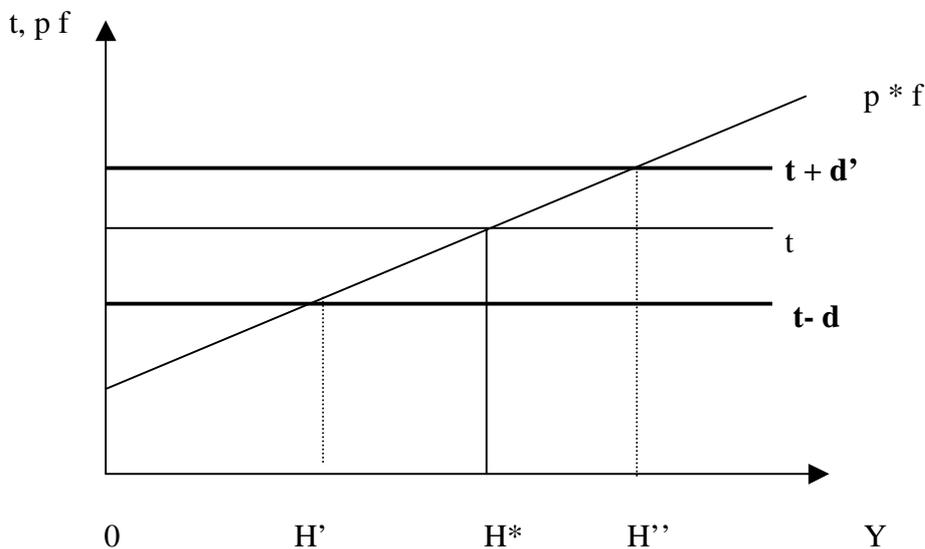
Figure 3 shows the difference between “Tax Evaders” and “Social Taxpayers”. “Social Taxpayers” are influenced by the social factor d (see equation 5), which reduces the non declared income (from H^* to H'). However, a lack of equity between the taxpayer’s own exchange and that of others causes a sense of distress. In such a situation, disadvantage provokes anger. The “Social Taxpayer” will engage in tax evasion to restore equity. In this case d can even be negative and thus equation (5) can be transformed to:

$$p * f = t - (-d') \quad (6)$$

$$p * f = t + d' \quad (6')$$

As a result, the non declared income increases (from H^* to H'').

Figure 3
Social Taxpayer

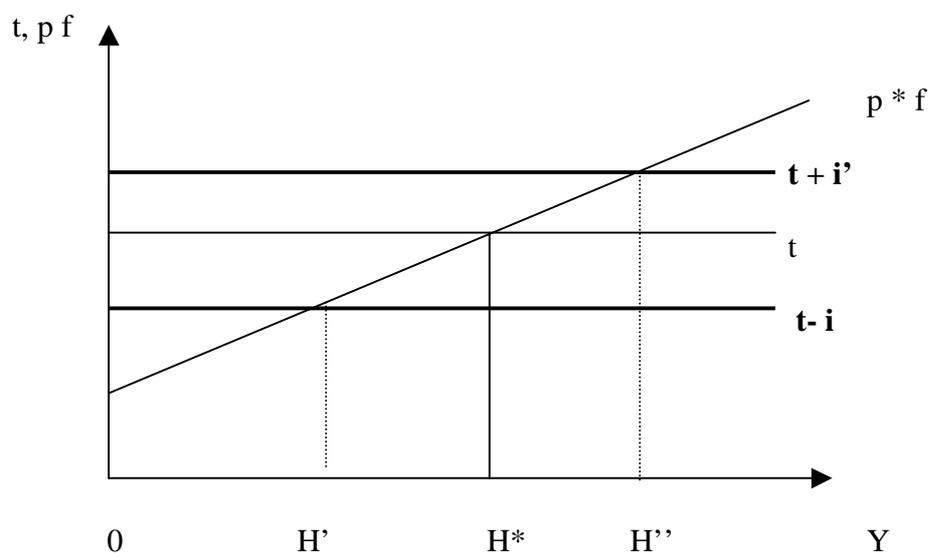


3. Intrinsic Taxpayer

Figure 4 presents the “Intrinsic Taxpayer”. One important factor is the institutional setting. It could be hypothesised that the more extended political participation possibilities, the higher tax morale and thus the factor i . Thus, the behaviour of “Intrinsic Taxpayers” depends strongly on the extent of trust they have in the political system. The factor i is a kind of institution trust factor. If a taxpayer thinks that she/he is not treated fairly by the political process, i gets smaller or can even be negative (i').

Treating an “Intrinsic Taxpayer” with increased punishment and audit rate can be taken for an indication that the government does not honour the compliance behaviour. As a consequence she/he reduces tax morale. Increasing deterrence disrupts a balance based on reciprocity between tax payments and received government services. This causes negative feelings which get stronger when “Intrinsic Taxpayers” are more heavily audited, because they think they pay fair dues².

Figure 4
Intrinsic Taxpayer



² However, Frey (1997) claims that tax morale is not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations which prevent free riding by others and establish fairness and equity help preserve tax morale.

4. *Honest Taxpayer*

As already mentioned, “Honest Taxpayers” are not affected by a marginal evaluation. They are taxpayers who do not even search for ways to cheat at taxes while others act contrarily. Thus, in all the figures they are at point 0. In general, all types of taxpayers follow a certain rule, but for different reasons. How can hard-core non-evaders be asserted empirically? Webley et al. (1991) point out that to determine honest taxpayers in experiments it is necessary to test the same people repeatedly. In general, more empirical research is necessary to obtain a general idea of the number of hard-core honest taxpayers.

In this typology it is unclear whether individuals learn or change their rules and switch into another taxpayer class. The most persistent group of taxpayers seem to be the honest ones, while the honesty persistence of the “Social and Intrinsic Taxpayer” is unclear. They are more sensitive to changes in the environment. Factors that influence the “Social” and the “Intrinsic Taxpayer”, as justice, fairness, and especially equality compared to other taxpayers are not based on objective standards but on subjective perceptions. This suggests that subjective rules are adapted according to the actual situation. On the other hand, an “Intrinsic Taxpayer’s” commitment to the institutional rules reflects a high level of internalised acceptance. As institutions are relatively stable, “Intrinsic Taxpayer’s” rules are less fluid than those of the “Social Taxpayer”.

It might be interesting to evaluate conducted tax compliance experiments in the literature to have an idea of quantitative data regarding taxpayers’ typologies. We have such information regarding public good experiments. Fischbacher, Gächter and Fehr (2001) identified roughly 50 percent of the subjects as conditional co-operators, meaning that their co-operation increased the more others contributed to the public good. On the other hand, one third of the subjects acted as free riders. Frey and Meier (2002) analysed individuals’ behaviour in a non-reciprocal giving situation using field data. With a panel data set of 98’000 observations (around 28’000 persons) they observed the students’ decision to contribute to two Social Funds at the University of Zurich. In this “non reciprocity” situation a large share of students made their contributions. The percentage of individuals who contributed to at least one fund varied between 57.61 and 76.88 percent, depending their study discipline. These data were matched with a survey to find out whether the students were conditioned by each others’ behaviour. The results indicate that only around every fifth student knew how his/her fellows had behaved, so that co-operative behaviour was not exclusively conditional. What

about the effects of institutional conditions? The authors observed an exogenous variation of the institutional conditions regarding the donation process, due to a restructuring of the administration. This change had the effect that the share of people contributing to the social fund increased from 44 to 61 percentage points. The findings in this study are insofar interesting as the authors' analysis focuses directly on individuals' behaviour in a real situation and is based on a high quantity of observations.

V. TRUST IN THE POLITICAL AND LEGAL SYSTEM

If we assume that we have different types of taxpayers, tax policies might have different effects on them. Thus, the question whether we can find strategies having a positive effect on virtually all types of taxpayers is very interesting. In general, government and tax administration have a variety of strategies to increase tax morale and tax compliance. Instead of focusing on traditional deterrence factors, we are going to analyse to which extent trust in the political and legal system has a positive effect on tax morale.

Given taxpayers' rule governed behaviour, stable and easily knowable institutions help create reliability. A government based on a well-functioning democratic government produces more trust than a dictatorship. A lack of public trust could undermine states' revenues and thus government's ability to carry out its function. Samuelson (1995, p. 187) quotes Benjamin Franklin who pointed out:

“Much of the Strength and Efficiency of any Government, in procuring & securing Happiness to the People, depends on ... the general Opinion of the Goodness of that Government”.

However, Clark and Lee (2001) stress that trust can also be excessive. Too much trust increases government's power. In despotic governments tax resistance might be a signal, an exit option to express the preferences and to restrict government's behaviour (see Torgler 2001b).

In the tax compliance literature economists have recently started to pay attention to the determinant of trust (e.g., Scholz and Lubell 1998, Slemrod 2000, Wintrobe 2001, Torgler 2003, 2002d). Trust in public officials might tend to increase taxpayers' positive attitudes and commitment to the tax system and tax-payment, which has finally a positive effect on tax compliance. Wintrobe (2001) argues that

“as long as people believe that the tax code is fair, they will be more willing to pay their taxes (p. 14)”.

Taxes can be seen as a price paid for government’s positive actions. Thus, if taxpayers trust the public officials, they are more willing to be honest. If the government acts trustworthily, taxpayers might be more willing to comply with the taxes. The relationship between taxpayers and government, similar to the one with the tax administration can be seen as a relational contract or psychological contract, which involves strong emotional ties and loyalties. Such a psychological tax contract can be maintained by positive actions, based on trust. If the government tries to generate trust with well functioning institutions, the co-operation of the “Intrinsic Taxpayer” can be initiated or increased. Furthermore, when taxpayers are satisfied with the way they are treated, the co-operation of the “Social Taxpayer” is enhanced. If the outcome received from the government is judged to be fair in relation to the taxes paid, no distress arises. A positive social capital atmosphere among taxpayers is created.

There might be a contrary effect regarding the behaviour of tax evaders. If government gives taxpayers in general more trust, e.g., reducing the audit probability and fine rate or including taxpayers more in the political process, the incentive to evade taxes might increase.

The empirical evidence of Feld and Frey (2002a) indicates the importance of institutional differences (here political participation rights) for explaining the relationship between taxpayers and tax authorities which influences tax morale. Such a tax administration behaviour would increase the costs of evading. Feld and Frey (2002b) continue on this framework and argue that tax morale is supported or even raised when tax officials treat taxpayers with respect and on the other hand is reduced when the administration considers taxpayers as individuals who have to be *forced* to pay the taxes:

“The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honorable taxpayer and, as a consequence, tax morale will fall. In contrast, if the tax official makes an effort to find out the reason for the error by contacting the taxpayer in an informal way, the taxpayer will appreciate this respectful treatment and tax morale will be upheld” (p. 4).

They divide respectful treatment into two components (p. 5): (i) transparent and clear procedure by the tax administration, (ii) a direct personal component: how the taxpayers’

character is respected by tax administrators. Their empirical analysis shows that a respectful treatment of taxpayers by the tax administration reduces tax evasion.

In history we find an interesting example where the government successfully created a system based on trust. In ancient Greece wealth had been shifted from the rich to the community, without coercion. Most of the public improvements have been built with the liturgy, a voluntary contribution from the rich to the city. They donated three and four times what was expected of them (see Adams 1993).

The typology of different taxpayers showed that the same strategy might have different compliance effects. Generally, the analysis showed that tax enforcement is a complex topic. A trustworthy government can not only positively influence the “Intrinsic Taxpayer” but also the “Social Taxpayer” reducing the feeling of inequity. Elffers (2000) points out that the government and the tax administration have to clarify urban myths about people who do not pay a penny in taxes although they are millionaires. People should be informed better regarding:

“how much revenue is coming in each year without very much enforcement, how successful the system is in spotting tax evaders, and how authority will prosecute severe cases regardless of the reputation of the people involved. Famous people like sports heroes or show business celebrities are particularly good role models: when tennis player Steffi Graf’s father was suspected of tax evasion, her main sponsor, Opel, immediately severed all ties with Graf, as they did not want to be associated, even indirectly, with unethical behavior” (p. 191).

The “Intrinsic Taxpayers” can react negatively when the government conducts a untrustworthy policy, increasing the tax enforcement. On the other hand, such a policy can have a positive effect on the behaviour of “Tax Evaders”. However, tax enforcement is always imperfect. The marginal costs of a universal enforcement are quite high. Tax authority can not achieve total compliance of “Tax Evaders” unless there is a tax administrator under every bed³. So there is always room for “Tax Evaders” to cheat.

³ The easier it is to identify the people who don’t pay taxes, the less costly is enforcement. Levi (1988) shows that the Romans used communal institutions to collect revenue. The institution of tax farming minimised transaction costs. This was important because measurement, monitoring costs and risks associated with extracting revenue from conquered subjects grew with the Roman expansion. Tax farmers purchased contracts to collect revenue in a given area. Interestingly, the government received the funds in advance of the actual collection. As a consequence tax farmers had an interest in optimising the tax collection process. Tax farmers would certainly not seek such a contract if they were not reasonably certain to gain from it. It seems that there was a demand for such contracts, because they were given out through auctions. As Levi states, relatively small units have similarly benefited historical revenue collection. During the medieval period the locus of revenue was the manor.

If the state creates institutional settings in which trust between government and citizens is improved, for example, giving taxpayers the possibility to actively participate in the political process, a higher tax morale can be generated. Experiments of Alm, McClelland and Schulze (1999) indicate that communication combined with the vote positively influences tax compliance, so that paying taxes becomes the accepted mode of behaviour. Feld and Tyran (2002) find in an experiment that tax compliance is higher in an endogenous fine treatment in which subjects have the possibility to approve or reject a fine proposal, compared to a situation in which the fine is exogenously fixed. Furthermore, the results show that subjects in the endogenous fine treatment, who approve the fine, have a higher tax compliance than subjects in the exogenous fine treatment.

VI. EMPIRICAL EVIDENCE

Tax morale can be seen as a solution to the puzzle why so many individuals pay their taxes. Instead of arguing in the line of Schmidtchen (1994) that complexity of the decision problem can keep taxpayers honest, we focus on trust as an instrument to increase their honesty. In the last section we have even shown that trust might have a positive effect on tax morale for specific kinds of taxpayers who follow different rules.

We are going to analyse whether there is a correlation between tax morale and trust in government and the legal system, using two different data sets: The World Values Survey (WVS, see Inglehart et al. 2000) and the Taxpayer Opinion Survey (TOS, see Harris and Associates 1988). In the WVS we have chosen data from Europe. Both surveys provide the possibility to include personality and demographic factors into a multiple regression analysis. As dependent variable we use tax morale. This research framework is novel, as there are not many studies that use tax morale as dependent variable and search for factors that systematically influence tax morale. Furthermore, Feld and Tyran (2002) point out that the link between trust in government and tax compliance is still not fully established.

With the World Values Survey 1989-1993 we have the possibility to integrate 17 European countries into an empirical study using multiple regression analysis⁴ (see also Appendix *Table A1*). In general, a cross cultural comparison with a single item measure as

⁴ Austria, Belgium, Denmark, Finland, France, Great Britain, Iceland, Ireland, Italy, N. Ireland, Netherlands, Norway, Portugal, Sweden, West and East Germany. The World Values Survey distinguishes between West and East Germany.

dependent variable can pose some problems. In some countries tax evasion might be justifiable. There could even be a moral duty not to pay taxes (see Torgler 2001b). As Europe is quite homogeneous, such problems can be reduced.

Trust in the legal system has been measured as follows:

Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all).

The effects of trust on tax morale can be analysed on two different levels: i) at the *constitutional level* and ii) at the *current politico-economic level*. With this question we focus more closely on the constitutional level, on how the relationship between the state and its citizens is established.

Weighted least squares and weighted ordered probit models are estimated. The weighted least squares estimations offer qualitatively quite similar results as the weighted ordered probit model. *Table 1* presents the results.

Trust in the legal system has a highly significant effect on tax morale. It seems that trust in the legal system leads to acceptance of governments' decisions and produces the incentive to obey the rules. However, the significance test must be treated with caution. If the sample size is quite large like in our case, there is a tendency for parameters to become significant (see Kennedy 1998). A larger sample size reduces the variance and thus makes it difficult to interpret the usual significance test. One way to control the problem is to look at the marginal effects or to adjust the significance level downwards. The marginal effects indicate that an increase of trust by one scale increases the share of people stating that tax morale is never justifiable between 3.3 and 4.1 percentage points. Equation two integrates the factor income into the estimation. As we can see, the number of observations is lower because we have some missing values in the variable income. Not surprisingly, a higher income has a negative effect on tax morale.

Table 1

Trust in the Legal System and Tax Morale WVS 1990-1993

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>Equation I</i>			<i>Equation II</i>			<i>Equation III</i>			<i>Equation IV</i>		
	<i>weighted</i>			<i>weighted</i>			<i>weighted</i>			<i>weighted</i>		
	<i>least squares</i>			<i>ordered probit</i>			<i>ordered probit</i>			<i>ordered probit</i>		
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	
a) Demographic Factors												
AGE 30-49	0.189***	7.481	0.166***	14.276	0.066	0.175***	13.572	0.070	0.170***	10.298	0.068	
AGE 50-64	0.369***	12.425	0.332***	23.962	0.133	0.329***	21.422	0.131	0.334***	16.311	0.133	
AGE 65+	0.573***	14.166	0.549***	27.953	0.219	0.493***	21.964	0.197	0.534***	18.137	0.213	
FEMALE	0.247***	13.284	0.229***	25.668	0.091	0.237***	23.327	0.095	0.256***	20.238	0.102	
b) Marital Status												
MARRIED	0.114***	4.308	0.107***	8.593	0.043	0.128***	9.156	0.051	0.102***	5.668	0.041	
LIVING TOGETHER	-0.270***	-7.237	-0.236***	-14.399	-0.094	-0.238***	-13.050	-0.095	-0.172***	-7.006	-0.069	
DIVORCED	-0.054	-1.103	-0.043*	-1.956	-0.017	-0.023	-0.950	-0.009	0.017	0.528	0.007	
SEPARATED	-0.265***	-3.318	-0.242***	-7.459	-0.096	-0.290***	-7.841	-0.116	-0.166***	-3.270	-0.066	
WIDOWED	0.134***	3.180	0.137***	6.916	0.055	0.139***	6.280	0.056	0.108***	3.413	0.043	
c) Employment Status												
PART TIME EMPLOYED	-0.005	-0.131	-0.008	-0.492	-0.003	-0.043**	-2.309	-0.017	-0.111***	-4.824	-0.044	
SELFEMPLOYED	-0.108***	-2.740	-0.101***	-5.112	-0.040	-0.082***	-3.528	-0.033	-0.105***	-3.438	-0.042	
UNEMPLOYED	-0.086**	-2.001	-0.068***	-3.385	-0.027	-0.069***	-2.916	-0.028	-0.113***	-3.555	-0.045	
AT HOME	-0.005	-0.172	-0.004	-0.278	-0.002	-0.026	-1.635	-0.010	-0.051**	-2.434	-0.020	
STUDENT	-0.084**	-2.026	-0.065***	-3.239	-0.026	-0.088***	-3.462	-0.035	-0.146***	-5.247	-0.058	
RETIRED	0.048	1.447	0.055***	3.362	0.022	0.036*	1.946	0.014	0.007	0.281	0.003	
OTHER	-0.166***	-2.579	-0.146***	-5.785	-0.058	-0.094***	-3.188	-0.037	-0.057	-1.569	-0.023	
d) Trust												
TRUST IN LEGAL SYSTEM	0.100***	9.771	0.093***	18.568	0.037	0.083***	14.718	0.033	0.103***	14.078	0.041	
e) Economic Status												
INCOME						-0.023***	-13.898	-0.009	-0.023***	-10.583	-0.009	
Observations	23473		23473			19048			19048			
Prob(F-statistic)	0.000											
Prob(LM-statistic)			0.000			0.000			0.000			

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4). EQ. 4 uses another weighting variable: the original weighting variable was multiplied by a constant for each country, in order to produce an equally weighted N for each survey.

The control variables indicate the following results: An increase in the level of age has a positive effect on tax morale. Being 65 or older increases the probability for a person to state the highest tax morale by around 20 percentage points compared to the reference group. These findings contribute to the discussion in the tax compliance literature where some studies found that a higher age increases tax compliance and other studies could not find such a significant effect. Hardly any study indicates a negative correlation. Tittle (1980) argues from a social psychology point of view that older people have higher social stakes and are more strongly dependent on the reaction from others which rises the moral costs of not being honest.

Females on average report a higher tax morale than males. Furthermore, married and widowed individuals report a higher, separated and people living together a lower tax morale than singles. The coefficient of the variable divorced is not significant. Compared to full-time employees, the share of self-employers reporting the highest tax morale is by around 4 percentage points lower. The results correspond to the standard argument that self-employed taxpayers have a lower tax compliance as they have higher compliance and opportunity costs of being honest. Unemployment has also a negative effect on tax morale. The results of the other coefficients are not so robust.

The way tax morale is defined here can be criticised as it is done with one question only. The dependent variable might not be good enough regarding its reliability and validity. To check the robustness of the obtained results, another data set has been analysed: the Taxpayer Opinion Survey 1987. Surprisingly, the TOS has not been used by many researchers (see, e.g., Smith 1992, Sheffrin and Triest 1992). Even if the data set is quite old, the huge amount of questions and the fact that not many papers have used the data set makes it also attractive for newer research projects (see, e.g., Forest and Sheffrin 2002, using the 1990 Taxpayer Opinion Survey). The sample of 2003 observations has been reduced as taxpayers had sometimes the possibility to answer “not sure” or to refuse. The advantage of this data set compared to the World Values Survey is that we find quite a few questions that help to measure tax morale. On the other hand, instead of Europe we can only analyse the United States. We are going to use the following questions to measure tax morale.

Using a scale of “1” to “6”, where “6” means perfectly acceptable and “1”, at the other end of the scale, means not at all acceptable please rate each transaction:

1. Trading or exchanging goods or services with a friend or neighbor and not reporting it on your tax form (**TM 1**).

2. Reporting your main income fully, but not including some small outside income (**TM 2**).
3. Being paid in cash for a job and then not reporting it on your tax form (**TM 3**).
4. Not reporting some earnings from investments or interest that the government would not be able to find out about (**TM 4**).

To check the sensitivity of the dependent variable tax morale, we are going to use all four variables independently and thus estimate four equations. Furthermore, to analyse the current politico-economic level, a trust variable has been used that catches the relationship between taxpayers and tax officials. The variable has been developed from the following question:

Public officials can usually be trusted to do what's right (strongly agree=4, mildly agree=3, mildly disagree=2, strongly disagree=1).

Similar control variables have been integrated into the estimations (see also Appendix *Table A2*). The results are in line with our hypothesis that there is a significantly positive correlation between trust in officials and tax morale which corresponds to the findings with the WVS data. An increase in the trust scale by one unit increases the share of subjects indicating the highest tax morale by around 3.5 percentage points. Looking at the control variables we find some similar tendency regarding the demographic factors. A higher age and being female have a positive effect on tax morale. Other factors are not robust regarding the variation in the dependent variable.

Table 2
Trust in Public Officials and Tax Morale TOS 1987

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>									
<i>Dependent Variable:</i>	<i>TM1</i>			<i>TM2</i>			<i>TM3</i>			<i>TM4</i>		
<i>Independent Variables</i>												
a) Demographic Factors												
AGE	0.006**	2.249	0.001	0.010***	3.955	0.004	0.018***	7.104	0.007	0.016***	5.579	0.006
FEMALE	-0.013	-0.194	-0.003	0.222***	3.567	0.083	0.160**	2.490	0.062	0.222***	3.222	0.087
EDUCATION	-0.058***	-3.713	-0.014	0.006	0.352	0.002	0.003	0.188	0.001	0.000	-0.009	0.000
BLACK	0.049	0.446	0.012	-0.188**	-2.033	-0.070	-0.195	-1.985	-0.076	-0.179	-1.618	-0.070
INDIAN	0.592**	1.984	0.147	-0.192	-0.704	-0.072	0.421	1.410	0.163	1.038**	2.129	0.408
ASIAN	0.529	1.281	0.131	0.007	0.016	0.003	-0.083	-0.071	-0.032	0.244	0.422	0.096
b) Employment Status												
PART TIME EMPLOYED	0.121	0.847	0.030	0.154	1.178	0.058	-0.096	-0.668	-0.037	-0.288*	-1.880	-0.113
UNEMPLOYED	-0.376	-1.754	-0.093	-0.392**	-2.257	-0.147	-0.155	-1.004	-0.060	-0.182	-1.109	-0.072
RETIRED	-0.024	-0.262	-0.006	0.175*	1.816	0.065	0.010	0.108	0.004	0.056	0.534	0.022
AT HOME	-0.174	-0.970	-0.043	0.198	1.035	0.074	0.078	0.460	0.030	0.101	0.610	0.030
STUDENT	-0.088	-0.219	-0.022	0.189	0.337	0.071	-0.024	-0.045	-0.009	-0.058	-0.144	-0.023
c) Marital Status												
MARRIED	-0.107	-1.100	-0.026	0.107	1.171	0.040	0.022	0.242	0.008	0.067	0.669	0.027
SEPARATED	-0.379	-1.787	-0.094	-0.365**	-1.983	-0.137	-0.293*	-1.757	-0.114	-0.145	-0.850	-0.057
DIVORCED	-0.144	-1.232	-0.036	-0.009	-0.078	-0.003	-0.149	-1.344	-0.058	-0.046	-0.375	-0.018
WIDOWED	-0.132	-0.910	-0.033	0.142	1.002	0.053	-0.041	-0.300	-0.016	-0.147	-0.923	-0.058
d) Economic Status												
INCOME	0.001	0.066	0.000	0.014	0.997	0.005	0.000	-0.006	0.000	-0.014	-0.886	-0.006
e) Trust												
TRUST IN OFFICIALS	0.139***	4.446	0.035	0.092***	3.036	0.034	0.082***	2.620	0.032	0.115***	3.460	0.045
Observations	1268			1286			1287			1273		
Prob(LM-statistic)	0.000			0.000			0.000			0.000		

Notes: In the reference group are MALE, WHITE,, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

VII. CONCLUSIONS

Tax compliance research has strongly focused on traditional topics as audit, penalty, and tax rate. This paper has tried to show that there are other possibilities to increase tax morale, as, e.g., trust in public officials and the legal system. Furthermore, rules might be an explanation why taxpayers cooperate. Taxpayers may follow rules they know or trust to produce good

results. But rules are not only chosen according to past experiences; they are also influenced by the attributions taxpayers give them (e.g., fairness and efficiency). Putting into account that a society is heterogeneous, a person's type plays an important role in determining which rules are followed and which are not. In general, taxpayers are more inclined to comply with the law if the relation between the paid tax and the performed government services is found to be equitable. Levi (1988) points out that a way to create or maintain compliance at the constitutional level is to provide reassurance by the government, for example, based on a pre-commitment, a self-imposed restraint on their power. One pre-commitment would be to use direct-democratic rules, another to make sure that the tax laws are based on the premise that not all citizens are evaders. To allow citizens to declare their own income and to make generalised deductions, e.g., would be a sort of pre-commitment.

Instead of analysing the output/observed behaviour (tax evasion) as many studies do, the paper analysed tax morale as dependent variable. We have used two data sets to investigate whether there is a correlation between tax morale and trust in the government and the legal system: the World Values Survey and the Taxpayer Opinion Survey. With both surveys including many countries and control variables we found that trust has a significant positive effect on tax morale. Trust at the constitutional and the current politico-economic process level seems to be essential to a well-functioning taxpayer society. Thus, governments' and tax administration's strategy aimed at creating confidence in their credibility and their capacity is rewarded with a higher tax morale.

APPENDIX

Table A1

Derivation of Some Variables (WVS)

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
INCOME	Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.
TRUST IN LEGAL SYSTEM	Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)

Source: Inglehart et al. (2000).

Table A2
Derivation of Some Variables (TOS)

Variable	Derivation
TAX MORALE (dependent variable)	1. Trading or exchanging goods or services with a friend or neighbor and not reporting it on your tax form (TM 1) . 2. Reporting your main income fully, but not including some small outside income (TM 2) . 3. Being paid in cash for a job and then not reporting it on your tax form (TM 3) . 4. Not reporting some earnings from investments or interest that the government would not be able to find out about (TM 4) .
INCOME	Looking at all sources of income, what was the approximate total income of your own before taxes in 1986: 1. Zero to \$4.999 2. \$5.000 to \$9.999 3. \$10.000 to \$14.999 4. \$15.000 to \$19.999 5. \$20.000 to \$24.999 6. \$25.000 to \$29.999 7. \$30.000 to \$39.999 8. \$40.000 to \$49.999 9. \$50.000 to \$74.999 10. \$75.000 or more
TRUST IN PUBLIC OFFICIALS	Public officials can usually be trusted to do what's right (strongly agree=4, mildly agree=3, mildly disagree=2, strongly disagree=1).
EDUCATION	What was the last grade of school you completed? 1. No formal schooling 2. First through 7 th grade 3. 8 th grade 4. Some high school 5. High school graduate 6. Some college 7. Two-year college graduate 8. Four-year college graduate 9. Postgraduate

Source: Taxpayer Opinion Survey (1987).

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Adams, J. S. (1965). Inequity in Social Exchange, in: L. Berkowitz (ed.), *Advances in Experimental Social Psychology*. New York: Academic Press: 167-299.
- Aitken, S. and L. Bonneville (1980). *A General Taxpayer Opinion Survey*. Washington, DC: Internal Revenue Service.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Clark, J. R. and D. R. Lee (2001). The Optimal Trust in Government, *Eastern Economic Journal*. 27: 19-34.
- Davis, J. B. (2001). Agent Identity in Economics, in: U. Mäki (ed.), *The Economic World View*. Cambridge: Cambridge University Press: 114-131.
- Descartes, R. (1897-1910). *Oeuvres complètes*. Paris: Vrin.
- Elffers, H. (2000). But Taxpayers Do Cooperate!, in: M. Van Vugt, M. Snyder, T. R. Tyler, A. Biel (eds.), *Cooperation in Modern Society*. Promoting the Welfare of Communities, States and Organizations. London: Routledge: 184-194.
- Elster, J. (1986). *Ulysses and the Sirens*. Studies in Rationality and Irrationality. Cambridge: Cambridge University Press.
- Ensley, M. and M. C. Munger (2001). Institutions, Ideology, and the Transmission of Information Across Generations, *Constitutional Political Economy*. 12: 107-122.
- Fischbacher, U., S. Gächter and E. Fehr (2001). Are People Conditionally Cooperative? Evidence from a Public Goods Experiment, *Economics Letters*. 71: 397-404.
- Feld, L. P. and B. S. Frey (2002a). Trust Breeds Trust: How Taxpayers are Treated, *Economics of Governance*. 3: 87-99.
- Feld, L. P. and B. S. Frey (2002b). The Tax Authority and the Taxpayer. An Exploratory Analysis”, paper presented the 2002 Annual Meeting of the European Public Choice Society Belgirate.
- Feld, L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Forest, A. and S. M. Sheffrin (2002). Complexity and Compliance: An Empirical Investigation, *National Tax Journal*. 55: 75-88.
- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.
- Frey, B. S. (2001). *Inspiring Economics*. Human Motivation in Political Economy. Cheltenham, UK: Edward Elgar.

- Frey, B. S. and S. Meier (2002). Pro-Social Behavior, Reciprocity or Both?“, Working Paper No. 107, University of Zurich.
- Harris, L. and Associates, Inc. (1988). 1987 Taxpayer Opinion Survey“, conducted for the U.S. Internal Revenue Service, Internal Revenue Service Document 7292, Washington, DC.
- Heiner, R. A. (1983). The Origin of Predictable Behavior, *American Economic Review*. 73: 560-595.
- Heiner, R. A. (1986). Uncertainty, Signal-Detection Experiments, and Modeling Behavior, in: R. Langlois (ed.), *Economics as a Process*. New York: Cambridge University Press: 59-115.
- Heiner, R. A. (1990). Rule-Governed Behavior in Evolution and Human Society, *Constitutional Political Economy*. 1: 19-46.
- Hessing, D. J., H. Elffers, H. S. J. Robben and P. Webley (1992). Does Deterrence Deter? Measuring the Effect of Deterrence on Tax Compliance in Field Studies and Experimental Studies, in: J. Slemrod (ed.), *Why People Pay Taxes. Tax Compliance and Enforcement*. Ann Arbor: The University of Michigan Press: 291-305.
- Homans, G. C. (1961). *Social Behavior: its Elementary Form*. New York: Harcourt, Brace and World.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Kasper, W. and M. E. Streit (1999). *Institutional Economics. Social Order and Public Policy*. Cheltenham, UK: Edward Elgar.
- Kelman, H. (1965). Manipulation of human behaviour: An Ethical Dilemma for the Social Scientist, *Journal of Social Issues*. 21: 31-46.
- Kennedy, P. (1998). *A Guide to Econometrics*. Cambridge: The MIT Press.
- Levi, M. (1988). *Rules and Revenue*. Berkeley/Los Angeles/London: University of California Press.
- Long, S. and J. Swingen, (1991). The Conduct of Tax-Evasion Experiments: Validation, Analytical Methods, and Experimental Realism, in: P. Webley, H. Robben, H. Elffers and D. Hessing, *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press: 128-138.
- Samuelson, R. J. (1995). *The Good Life and its Discontents. The American Dream in the Age of Entitlement 1945-1995*. New York: Times Books.
- Scholz, J. T. and M. Lubell (1998). Adaptive Political Attitudes: Duty, Trust and Fear as Monitors of Tax Policy, *American Journal of Political Science*. 42: 398-417.
- Schlicht, E. (1990). Rationality, Bounded or not, and Institutional Analysis, *Journal of Institutional and Theoretical Economics (JITE)*. 146: 703-719.
- Schmidtchen, D. (1994). Vom nichtmarginalen Charakter der Steuermoral, in: C. Smekal und E. Theurl (Hrsg.), *Stand und Entwicklung der Finanzpsychologie*. Baden-Baden: Nomos: 185-211.
- Simon, H. A. (1955). A Behavioral Model of Rational Choice, *Quarterly Journal of Economics*. 69: 99-118.

- Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.). *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press: 223-249.
- Taxpayer Opinion Survey (1987). United States Department of the Treasury, Internal Revenue Service, IRS Doc. 7292 (1-88).
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Torgler, B. (2001a). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2001b). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168.
- Torgler, B. (2002). The Economic Analysis of "Creative Compliance", WWZ-Discussion Paper 02/04, Basel: WWZ.
- Torgler, B. (2003). To Evade Taxes or not to Evade: That is the Question, forthcoming in: *Journal of Socio-Economics*.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.
- Webley, P., H. Robben, H. Elffers and D. Hessing (1991). *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press.
- Yankelovich, Skelly and White, Inc. (1984). Taxpayer Attitudes Survey: Final Report, Public Opinion Survey Prepared for the Public Affairs Division, Internal Revenue Service, New York.

CHAPTER VII

TAX MORALE AND INSTITUTIONS:

EVIDENCE FROM SWITZERLAND*

ABSTRACT

This paper analyses the impact of direct democracy, trust in government, the court and the legal system, and federalism on tax morale. In the tax compliance literature it is novel to analyse tax morale as dependent variable and to systematically analyse the effects of formal and informal institutions in Switzerland, a country where participation rights and the degree of federalism vary across different cantons. We used two different data sets at the individual level (World Values Survey and International Social Survey Programme). The findings suggest that direct democratic rights, local autonomy, and trust in government, the court and the legal system have a significantly positive effect on tax morale.

JEL classification: H260, H730, D700

Keywords: tax morale, tax compliance, tax evasion, direct democracy, local autonomy

* Revised version of the paper: Benno Torgler (2002). Tax Morale and Institutions, WWZ Discussion Paper 02/07, Basel: WWZ.

I. INTRODUCTION

The purpose of this paper is to identify which factors have an impact on tax morale. It can be supposed that the extent of tax morale depends on the type of constitution. In general, there are not many studies which systematically analyse the influence of institutions on tax morale or tax compliance. Thus, we are going to analyse if institutions as direct democracy and federalism have an influence on tax morale, controlling for additional variables. It is essential to analyse under which institutional conditions citizens are more willing to pay their taxes. For this, the study analyses a cross-section of individuals throughout Switzerland using the World Values Survey (WVS) data 1995-1997 and the International Social Survey Programme (ISSP) data set "Religion II". Switzerland is chosen because it allows to observe the influence of institutional factors as direct democracy (via initiatives and referenda) and federalism (local autonomy). In Switzerland, cantons have different degrees of political participation possibilities and fiscal decentralisation (see *Table A1* in the Appendix).

The Swiss WVS survey has been conducted in 1996 and the ISSP survey in 1999. Both data sets allow us to control for many factors that are unrelated to institutional variables. Working with two data sets allows to check the robustness of our main variables. The findings suggest that institutional factors in the form of direct democratic participation rights and federalism raise tax morale. Furthermore, trust in government and trust in the court and the legal system have a positive effect on tax morale. In Section II theoretical considerations on tax morale are presented focusing on direct democracy, local autonomy and trust in institutions. Section III presents the empirical findings and Section IV finishes with some concluding remarks.

II. THEORETICAL CONSIDERATIONS AND HYPOTHESES

1. Tax Morale and Political Participation

Tax morale might depend on the type of institutional settings. Institutions that respect the preferences of the citizens will have more support by the people than a state that acts as a Leviathan (see Prinz 2002). Such a supportive behaviour has a positive effect on tax morale. Levi (1988) points out that a possibility to create or maintain compliance is to provide

reassurance by the government. A government that precommits itself with direct democratic rules imposes itself restraints on its own power and thus sends a signal that taxpayers are seen as responsible persons. Furthermore, direct democratic rules signalise that citizens are not ignorant or uncomprehending voters, which might create or maintain a certain social capital stock. The government signalises thus that taxpayers' preferences are taken into account in the political process. The more taxpayers can participate in political decision making by popular rights, the more this contract is based on trust and the higher is tax morale. As Frey (2003) points out, taxpayers are treated as

“citizens rather than subjects, and have extensive rights and obligations to their state” (p. 9).

Taxpayers are in the position to better monitor and control politicians via referenda and in the position of rule setters via initiative and thus able to renegotiate the tax contract with the government influencing, e.g., the tax laws and the tax rates which enhance civic virtue. Thus, the possibility for taxpayers to vote on fiscal issues positively influences tax morale. Being involved in the political decision process enhances taxpayers' sense of civic duty (Feld and Frey 2002a) and thus tax morale. The instrument of direct democracy helps to spend taxes according to their preferences. Thus, the motivation to contribute paying their taxes increases. The following hypothesis can be developed:

Hypothesis 1: The more extensive the citizens' direct political participation possibilities, the higher the intrinsic motivation to comply in the form of tax morale.

Torgler (2001) has surveyed the empirical evidence about the effects of political participation on tax compliance. Looking at the experimental evidence, Alm, McClelland and Schulze (1999), Feld and Tyran (2002) and Torgler and Schaltegger (2003) found that voting on tax issues has a positive effect on tax compliance.

2. Tax Morale and Trust in the Government, the Court and the Legal System

Trust can enforce cooperation maintaining the psychological contract between the state and the taxpayers (see Torgler 2001, Torgler 2003). It is an important institution which influences citizen's incentive to commit themselves to obedience. And this trust can only be created if government's commitment acts in line with citizens' needs and desires (see Hardin 1998). Not

only trust in the government but also trust in the court and the legal system and thus the way how the relationship between the state and its citizens is established might have an effect on tax morale.

Slemrod (2002) points out that the cost of tax raising and government running is lower if taxpayers are more willing to pay their taxes voluntarily:

“It is as if there is a stock of goodwill, or social capital, the return to which is the more efficient operation of government. This social capital stock may be reduced by a policy change that decreases the incentive to be a law-abiding citizen” (p. 13).

In this light, the following hypothesis is going to be tested:

Hypothesis 2: The more extensive the citizens’ trust in the government and the legal system, the higher the intrinsic motivation to comply in the form of tax morale.

Kucher and Götte (1998) used data from Switzerland (Zurich), where taxpayers have to file a declaration of liable revenue and property, to analyse trust in government. As dependent variable they used the ratio of submitted tax declarations between 1964 and 1996. Trust has been measured as the ratio of concurrence between the city government’s recommendation for an issue put to a vote and the actual outcome at the ballot. The results indicate that trust does significantly raise the ratio of submitted tax declarations. Furthermore, Feld and Frey (2002a) show in their empirical analysis from Switzerland that tax administrations’ respectful treatment reduces tax evasion.

3. Tax Morale and Decentralisation

A second institution is federalism. Small structures have the advantage that citizens’ preferences can be met better. There is an intensive every-day interaction between taxpayers and local politicians and bureaucrats. This closeness between taxpayers, the tax administration and the local government may induce trust and thus enhance tax morale. Politicians and members of the administration are better informed about the preferences of the local population. Furthermore, if politicians are elected at the local level, they have an incentive to put citizens’ preferences into account (see Frey and Eichenberger 1999) and thus to spend the tax revenues according to their preferences. Decentralisation moves the government closer to

the people. Many economists point out the relevance of giving sub-national governments the taxing power (see, e.g., Bahl 1999). The strength of decentralised systems is a better transparency of this input-output relationship. The tax system must be visible to the local taxpayers. The income tax is a good instrument for a local structure. It is easy to administrate and always under individuals' test, who have the opportunity to use the instruments of exit and voice (see Hirschman 1970). The mechanism of entry and exit in federal states provides a strong incentive to produce public services in accordance to taxpayers' preferences. Thus, the third hypothesis states:

Hypothesis 3: The more extensive the local autonomy, the higher the intrinsic motivation to comply in the form of tax morale.

III. EMPIRICAL RESULTS

1. Model

In order to examine our hypotheses derived in Section II, the following estimation equation is postulated:

$$TM_i = \beta_0 + \beta_1 \cdot p_c + \beta_2 \cdot f_c + \beta_3 \cdot t_i + \beta_4 \cdot y_i + \beta_5 \cdot CTL_i + \beta_6 \cdot TR_i + \beta_7 \cdot INST_c + \varepsilon_i$$

where TM_i denotes the individual degree of tax morale measured with the WVS for the years 1996 and 1999 with the ISSP data set in Switzerland. In both data sets we have the same tax morale scale. The independent variables are specified as follows:

1. p_c : As an approximation for the probability of detection, the number of tax auditors as a percentage of the total number of taxpayers in each canton c is used.
2. f_c : The penalty tax rate is approximated by the standard legal fine as a multiple of the evaded tax amount (in percent) in a canton c ¹.
3. t_i : Individual tax rate.

¹ The information about the probability of detection and the fine for tax evasion has been collected by Lars P. Feld and Bruno S. Frey based on a questionnaire. The following contributions are based upon this data set: Feld and Frey (2002a), (2002b) and Frey and Feld (2002).

4. y_i : Individual income class of a taxpayer (see *Appendix*).
5. CTL_i : a panel of control variables at the individual level covering age, gender, education, marital status, employment status.
6. TR_i : trust in government in the WVS data set² confidence in the courts and the legal system in ISSP³.
7. $INST_c$: Institutional factors at the cantonal level c . For the degree of direct democracy the six point scale index developed by Stutzer (1999) and applied, e.g., by Frey and Stutzer (2000, 2002), Frey and Feld (2002), Feld and Frey (2002a, 2002b) has been used. The index reflects the extent of direct democratic participation (1= lowest and 6 highest degree of participation) at the cantonal level⁴. As indexes do not tell as much as a single instrument, we are going to measure the degree of direct democratic participation with a dummy on legislative referendum and the signature requirements for legislative initiatives. Local autonomy is measured with an index developed by Ladner (1994) based on survey results where chief local administrators in 1865 Swiss municipalities were asked to report how they perceive their local autonomy on a 10 point scale (1= no autonomy, 10 = very high communal autonomy, see *Appendix Table A2*).

The economics-of-crime approach would predict that the extent of tax evasion depends negatively on the probability of being caught and the size of punishment in case of being caught. However, empirical and experimental findings indicate that the expected utility maximisation approach does not work well. The pooled cross section time series estimation for Swiss cantons over the years 1970, 1978, 1985, 1990, and 1995 done by Frey and Feld (2002), using tax evasion as dependent variable, indicates that the probability of detection has a theoretically unexpected positive sign, being not statistically significant, while the size of the fine is statistically significant at the 5 percent level. Beron, Tauchen and Witte (1992) found with tax return data from 1969 a weak deterrent effect from audits on tax compliance. Similar, experiments show a mixed picture of the effects of deterrence factors with the

² Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all).

³ How much confidence do you have in courts and the legal system (5=complete confidence to 1=no confidence at all).

⁴ The index includes the four legal instruments: the popular initiative to change the canton's constitution, the popular initiative to change the canton's law, the compulsory and optional referendum to prevent new law or changing of a law and the compulsory and optional referendum to prevent new state expenditure. The index is based on the degree of restrictions in form of the necessary signatures to use an instrument, the time span to collect the signatures and the level of new expenditure which allows to use the financial referendum (for a detailed discussion see Stutzer 1999).

tendency that a higher audit leads to more compliance (see Torgler 2002a). Slemrod, Blumenthal and Christian (2001) used a controlled field experiment in Minnesota to analyse taxpayer response to an increased probability of audit. While low and middle income taxpayers increased their reported tax between 1993 and 1994 relative to the control group, the reported income of high income taxpayers fell sharply in relation to the control group.

It is difficult to predict the effects of deterrence factors on tax morale. Deterrence imposed by the tax authority might crowd out taxpayers' intrinsic motivation to pay their taxes and thus crowd out tax morale. On the other hand, deterrence factors might prevent taxpayers with a low tax morale from exploiting the more honest taxpayers. Tax morale is therefore not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations which prevent free riding by others, reducing the possibility to escape from their tax payments may help to preserve tax morale (see Frey 1997).

The effects of the tax rate and the income on tax evasion are difficult to assess theoretically. It depends on the individual's risk preference and the progression of the income tax schedule (see Andreoni, Erard and Feinstein 1998). A higher marginal tax rate makes tax evasion marginally more profitable, but a contrary effect works depending on the risk aversion of taxpayers. The results are influenced by the tax schedule (proportional, progressive, regressive) (see Frey and Feld 2002).

Regarding the control variables it might be worthwhile to point out that it can be expected that older people have a higher tax morale than the younger ones. Over the years they have acquired greater social stakes, as material goods, status, a stronger dependency on the reactions from others (Tittle 1980), as they mostly have lived for a certain time in the same place and thus are more attached to the community (see Pommerehne and Weck-Hannemann 1996). In the tax compliance literature evidence concerning the variable gender indicates the tendency that males are less compliant than females (see, e.g., Vogel 1974, Tittle 1980, Spicer and Becker 1980). Looking at the marital status it can be argued that married people might be more constrained by their social network and thus more compliant, but on the other hand in Switzerland they are taxed in a higher bracket than two separate incomes which might have a negative impact on tax morale. Better educated taxpayers are supposed to know more about tax law and fiscal connections and thus would be in a better position to assess the degree of compliance, being better aware of the benefits and services the state provides for the citizens from the revenues (see Lewis 1982). On the other hand, they may be less compliant because they better understand the opportunities for evasion and avoidance and might be more

critical about and better aware of how the state uses tax revenues. Self-employed persons do not per se have a lower tax morale than other taxpayers, but they have better possibilities to evade taxes. Most empirical results which indicate that they have a lower tax compliance are not found in Switzerland, but in other countries, where labour income earners pay taxes at source.

2. Results

1. Deterrence Factors

Our estimations start with analysing the effects the traditional variables of an economics of crime approach have on tax morale. Thus, our first estimations are going to consider three basic variables of this approach: the fine rate of tax evasion, the probability of detection, and the individual tax rate. Therefore, weighted least squares models and weighted ordered probit models are estimated in *Table 1*.

In the weighted ordered probit estimation, only the marginal effects for the highest value “tax evasion is never justified” (WVS 1996) and “seriously wrong not to report all the income” (ISSP 1999) are shown.

Table 1 presents the results. As we can see most results are robust regarding the estimation methods. The weighted least squares estimations using tax morale as a cardinal variable offer qualitatively quite similar results as the weighted ordered probit model. Looking at the variables FINE RATE, AUDIT PROBABILITY and INDIVIDUAL INCOME TAX RATE we observe similar values for both data sets. The results indicate that the basic tax evasion model does not perform in a satisfactory way. The coefficients are mostly not significant. Only in one estimation the coefficient of the variable AUDIT PROBABILITY is significant at the 10 percent level showing a positive sign. On the other hand, the coefficient of the variable FINE RATE is statistically not significant with a negative tendency. In further estimations we are going to see that these coefficients are often not significant. In the estimations where the coefficient is significant, we find a tendency for a higher audit probability to be correlated with a higher tax morale, and a higher fine rate with a lower tax morale. One reason might be that stronger controls help to catch tax evaders and thus honest taxpayers perceive the audit probability to be directed against dishonest taxpayers. On the other hand, however, a higher fine rate might crowd out more the intrinsic motivation to

comply with taxes, as it is settled in the laws and more evident for the taxpayers, signalling thus stronger external interventions.

The individual tax rate has a significant negative effect on tax morale being significant on the 10 percent level in the weighted ordered probit estimation with the WVS data set.

It is difficult to get a clear picture of the effects of the control variables on tax morale. There is the tendency that females have a higher tax morale than males. The marginal effects indicate, for example, in the WVS survey estimation that being female rather than male increases the probability of a person stating that tax evasion is never justified by 27.5 percentage points. Furthermore, married people seem to have a higher tax morale than the reference group (singles). In the ISSP data set, which does not differentiate between married people and people living together, the coefficient is positive, but not significant. A higher education correlates with a higher tax morale, at a statistically significant rate in the ISSP data set.

Different results can be observed regarding the effects of income and the employment status on tax morale. Only the coefficients of the ISSP estimations are statistically significant indicating a positive correlation between tax morale and income. Part time employees have a higher tax morale than full time employees in the WVS but a lower one in the ISSP data set.

In general, the main finding in these estimations is the fact that the standard model of tax evasion does not work well. The findings do not indicate that coercion does not play any role, but it reduces the emphasis of the significance of such an instrument for resolving the social dilemma of tax payments. Monitoring and penalties for non-compliance might have the effect that individuals crowd out intrinsic motivation to comply with taxes (see Frey 1997). Empirical findings in Switzerland also indicate that the expected utility maximisation approach does not work well. The pooled cross section time series estimations for Swiss cantons over the years 1970, 1978, 1985, 1990, and 1995 done by Frey and Feld (2002) using tax evasion as dependent variable indicate that probability of detection has a positive sign being statistically significant in some equations, while the size of the fine is statistically significant with a negative sign. Torgler and Schaltegger (2003) found in a tax compliance experiment done in Switzerland even a negative effect of deterrence factors on tax compliance.

Table 1
Determinants of Tax Morale in Switzerland in 1996

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>World Values Survey 1996</i>					<i>ISSP 1999</i>				
	<i>weighted</i> <i>least squares</i>		<i>weighted</i> <i>ordered probit</i>			<i>weighted</i> <i>least squares</i>		<i>weighted</i> <i>ordered probit</i>		
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Deterrence Factors										
FINE RATE	-0.001	-1.187	-0.001	-1.615	-0.001	-0.001	-0.682	-0.001	-0.834	0.000
AUDIT PROBABILITY	0.001	1.121	0.002*	1.856	0.001	0.001	1.073	0.001	1.074	0.000
b) Tax Rate										
INDIVIDUAL INC. TAX RATE	-0.008	-1.327	-0.009*	-1.916	-0.004	-0.019	-1.568	-0.022	-1.772	-0.006
c) Demographic Factors										
AGE 30-49	0.028	0.211	0.025	0.249	0.010	-0.041	-0.447	-0.032	-0.332	-0.009
AGE 50-64	0.403**	2.553	0.396***	3.163	0.157	-0.020	-0.191	-0.020	-0.167	-0.006
AGE 65+	0.348	1.380	0.347	1.554	0.138	0.013	0.082	-0.002	-0.011	-0.001
FEMALE	0.284***	2.882	0.275***	3.397	0.109	0.064	0.930	0.082	1.066	0.024
EDUCATION	0.013	0.510	0.013	0.617	0.005	0.033*	1.870	0.040**	2.042	0.012
d) Marital Status										
MARRIED	0.319**	2.296	0.317***	2.963	0.126	0.001	0.015	0.005	0.063	0.002
LIVING TOGETHER	0.071	0.400	0.070	0.528	0.028					
DIVORCED	0.183	0.941	0.174	1.135	0.069	-0.292**	-2.189	-0.334**	-2.120	-0.098
SEPARATED	0.292	0.819	0.190	0.693	0.075	0.158	0.844	0.232	1.290	0.068
WIDOWED	0.013	0.059	-0.133	-0.736	-0.053	-0.021	-0.149	-0.026	-0.147	-0.008
e) Economic Variable										
INCOME	-0.007	-0.398	-0.007	-0.490	-0.003	0.000*	1.706	0.000*	1.853	0.000
f) Employment Status										
PART TIME EMPLOYED	0.286**	2.103	0.283***	2.581	0.112	-0.176*	-1.786	-0.225**	-2.046	-0.066
LESS THAN PART TIME						0.047	0.351	0.038	0.253	0.011
SELFEMPLOYED	0.150	0.865	0.139	0.934	0.055					
UNEMPLOYED	-0.051	-0.173	-0.047	-0.223	-0.019	-0.041	-0.167	-0.076	-0.270	-0.022
AT HOME	0.237	1.488	0.240*	1.862	0.095	0.132	1.003	0.142	0.931	0.041
STUDENT	0.030	0.125	0.012	0.066	0.005	0.177	1.285	0.228	1.627	0.066
RETIRED	0.514**	2.288	0.590***	2.728	0.234	0.207	1.377	0.252	1.475	0.074
OTHER	0.432	1.235	0.468	1.628	0.186					
SICK						0.244	1.003	0.245	0.483	0.071
Observations	922		922			1130		1130		
R-squared	0.114					0.034				
Prob(F-statistic)	0.000					0.000				
Prob(LM-statistic)			0.000					0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. In the ISSP data married and people living together are added into one group. Furthermore, they include people working less than part time and sick persons, omitting instead self-employed persons. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

These findings indicate that the basic evasion model has to be extended with additional factors. Thus, the paper analyses to which extent important insights can be obtained by including formal and informal institutions to evaluate what shapes tax morale. Switzerland is characterised by a constitution which combines direct democracy elements as initiative and referenda with a high degree of federalism, which means that cantons and local authorities have large competences. The degree of institutionalised rights of political participation strongly varies between the 26 Swiss cantons.

2. Direct Democratic Participation Rights and Trust in the Government and the Legal System

First, we are going to analyse the effect of direct democracy and trust in the government, the court and the legal system on tax morale⁵. The degree of direct democratic participation rights of taxpayers is measured with an index developed by Stutzer (1999). The results for both data sets are presented in *Table 2* and *3*. The index of direct democratic rights has a highly significant positive effect on tax morale with high marginal effects. Thus, the first hypothesis cannot be rejected. Eq. 2a (Eq. 2b) indicates that an increase in the index of direct democracy by one point raises the share of persons indicating the highest tax morale by 6.4 (2.9) percentage points. Thus, the results show that the institution direct democracy raises individual's tax morale⁶.

In a next step we are going to analyse whether trust in the government and the legal system have a positive effect on tax morale. With the WVS question we focus more closely on the current politico-economic level. On the other hand with the ISSP data set we focus on how the relationship between the state and its citizens is established. As democracy works as an institution that enhances the psychological tax contract between citizens and the state and thus induces trust, we first analyse the trust variables in separate estimations (see Eq. 3a and 3b). The results indicate that hypothesis 2 can not be rejected either. Both trust coefficients are highly significant showing a statistically significant positive effect on tax morale. An

⁵ It should be noticed that the Swiss World Values Survey was not random-random but quota-random, based on a random sample of communes and then on quotas in terms of sex, age, etc. in the selected communes. Thus, the smallest cantons are not necessarily represented (not represented are: Appenzell a. Rh., Glarus, Jura, Nidwalden, Uri, and Zug).

⁶ What about the causality between direct democracy and tax morale? Do taxpayers with a higher tax morale choose direct democratic institutions? In line with Frey (2001) and Frey and Stutzer (2000) it could be argued that direct democratic institutions have a long tradition in Switzerland and are quite stable over time, which suggests that the causality runs from direct democratic rights to tax morale and not the other way round. However, based on this kind of data set it is not possible to fully rule out the causality problem.

increase in the trust in government scale (trust in court and the legal system) by one unit increases the share of subjects indicating the highest tax morale by 8.9 (3.4) percentage points. To investigate whether the positive correlation between direct democracy and tax morale is largely driven by a higher trust, we include them together into the same equations (see Eq. 4a and 5b). Furthermore, in order to test for alternative explanations we include additional variables (religiosity and individuals' financial satisfaction in the WVS and religiosity in the ISSP data set). Religiosity might influence people's habits and might be a restriction to engage in tax evasion (for empirical evidence see Torgler 2002b). As religious variable we take the variable frequency of church attendance (CHURCH ATTENDANCE). This approximately shows how much time individuals devote to religion. It says more about behaviour than, e.g., religious attitudes. According to the author's knowledge there are only three papers which examine religiosity's effect on tax cheating (Tittle 1980, Grasmick et al. 1991, Torgler 2002c). All three studies indicate that religiosity affects the degree of rule breaking, tax compliance and tax morale. Our findings in *Table 2* and *3* are in line with these results, showing a positive correlation between tax morale and the degree of church attendance.

Financial dissatisfaction might negatively influence tax morale. Such a dissatisfaction might create a sense of distress, especially when taxes have to be paid and there is a discrepancy between the actual and the aspired financial situation⁷. Thus, taxes might be perceived as a strong restriction, which increases the incentives to reduce tax honesty. As the income variable is integrated into the equation, we can analyse the "stress" component of the financial dissatisfaction. The result in *Table 2* shows that an increase in the financial satisfaction level by one unit increases the share of individuals arguing that tax morale is never justifiable by 2 percentage points. The coefficients of the direct democracy and trust in government and trust in the court and the legal system remain statistically highly significant. Thus, it can be concluded that both variables have a robust influence on tax morale.

⁷ For the theory of aspiration see e.g., Frank 1941, Simon 1955, Siegel 1957).

Table 2

The Effects of Direct Democracy and Trust on Tax Morale (WVS 1996)

WVS 1996									
<i>Weighted Ordered Probit</i>									
<i>Dependent Variable: Tax Morale</i>									
<i>Independent Variables</i>	<i>Eq. 2a</i>			<i>Eq.3a</i>			<i>Eq.4a</i>		
	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Deterrence Factors									
FINE RATE	-0.002***	-2.591	-0.001	-0.001	-1.037	-0.098	-0.002**	-2.096	-0.001
AUDIT PROBABILITY	0.001	0.809	0.000	0.002*	1.822	0.000	0.001	1.176	0.001
b) Tax Rate									
INDIVIDUAL INC. TAX RATE	-0.008	-1.544	-0.003	-0.008*	-1.691	0.001	-0.007	-1.404	-0.003
c) Institutional Variable									
DIRECT DEMOCRATIC RIGHTS	0.162***	4.517	0.064				0.184***	5.033	0.073
d) Trust									
TRUST IN GOVERNMENT				0.225***	5.214	0.089	0.170***	3.810	0.067
e) Demographic Factors									
AGE 30-49	0.055	0.562	0.022	0.038	0.372	0.015	0.014	0.137	0.006
AGE 50-64	0.427***	3.440	0.170	0.407***	3.143	0.162	0.310**	2.355	0.123
AGE 65+	0.385*	1.739	0.153	0.277	1.297	0.110	0.215	0.951	0.086
FEMALE	0.286***	3.485	0.114	0.259***	3.117	0.103	0.261***	3.108	0.104
EDUCATION	0.010	0.468	0.004	-0.009	-0.433	-0.004	-0.013	-0.595	-0.005
f) Marital Status									
MARRIED	0.320***	3.012	0.127	0.314***	2.784	0.125	0.346***	3.047	0.137
LIVING TOGETHER	0.051	0.378	0.020	0.098	0.701	0.039	0.089	0.600	0.035
DIVORCED	0.139	0.893	0.055	0.164	1.055	0.065	0.210	1.288	0.083
SEPARATED	0.197	0.697	0.078	0.206	0.725	0.082	0.242	0.834	0.096
WIDOWED	-0.140	-0.755	-0.056	-0.144	-0.807	-0.057	-0.139	-0.759	-0.055
g) Economic Variable									
INCOME	-0.014	-1.006	-0.006	-0.013	-0.861	-0.005	-0.026*	-1.666	-0.010
FINANCIAL SATISFACTION							0.050***	2.894	0.020
h) Employment Status									
PART TIME EMPLOYED	0.276**	2.502	0.110	0.270**	2.377	0.107	0.238	2.090	0.094
SELFEMPLOYED	0.160	1.060	0.064	0.102	0.701	0.041	0.139	0.921	0.055
UNEMPLOYED	-0.061	-0.292	-0.024	-0.024	-0.108	-0.010	0.072	0.331	0.029
AT HOME	0.244*	1.896	0.097	0.208	1.594	0.083	0.214*	1.658	0.085
STUDENT	0.039	0.216	0.015	-0.084	-0.463	-0.033	-0.065	-0.336	-0.026
RETIRED	0.582***	2.729	0.231	0.599***	2.933	0.238	0.503**	2.372	0.200
OTHER	0.496*	1.755	0.197	0.549*	1.762	0.218	0.607	1.910	0.241
i) Religiosity									
CHURCH ATTENDANCE							0.078***	3.623	0.031
Observations	922			891			879		
Prob(LM-statistic)	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

Table 3

The Effects of Direct Democracy and Trust on Tax Morale (ISSP 1999)

<i>ISSP 1999</i>									
<i>Weighted Ordered Probit</i>									
<i>Dependent Variable: Tax Morale</i>									
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Eq. 2b</i>		<i>Eq. 3b</i>			<i>Eq. 4b</i>		
		<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Deterrence Factors									
FINE RATE	-0.001	-1.207	0.000	-0.001	-0.677	0.000	-0.001	-0.663	0.000
AUDIT PROBABILITY	0.38E-03	0.418	0.000	0.001	0.677	0.000	-0.47E-04	-0.051	0.000
b) Tax Rate									
INDIVIDUAL INC. TAX RATE	-0.010	-0.779	-0.003	-0.021*	-1.681	-0.006	-0.010	-0.770	-0.003
c) Institutional Variable									
DIRECT DEMOCRATIC RIGHTS	0.100***	3.346	0.029				0.104***	3.410	0.030
d) Trust									
TRUST IN COURT AND LEGAL SYSTEM				0.116***	3.782	0.034	0.093***	2.936	0.027
e) Demographic Factors									
AGE 30-49	-0.027	-0.287	-0.008	0.047	0.482	0.014	0.064	0.640	0.018
AGE 50-64	-0.017	-0.145	-0.005	0.049	0.411	0.014	0.050	0.401	0.014
AGE 65+	-0.008	-0.043	-0.002	0.053	0.270	0.016	0.005	0.027	0.002
FEMALE	0.090	1.162	0.026	0.075	0.948	0.022	0.076	0.950	0.022
EDUCATION	0.044**	2.273	0.013	0.034*	1.676	0.010	0.038*	1.861	0.011
f) Marital Status									
MARRIED/LIVING TOGETHER	0.011	0.131	0.003	-0.019	-0.237	-0.006	-0.061	-0.723	-0.018
DIVORCED	-0.314*	-1.941	-0.091	-0.344*	-2.157	-0.100	-0.300*	-1.816	-0.087
SEPARATED	0.236	1.307	0.069	0.193	1.063	0.057	0.178	0.961	0.051
WIDOWED	-0.038	-0.221	-0.011	-0.029	-0.161	-0.008	-0.103	-0.565	-0.030
g) Economic Variables									
INCOME	0.23E-04	0.997	0.000	0.37E-04*	1.708	0.000	0.21E-04	0.957	0.000
h) Employment Status									
PART TIME EMPLOYED	-0.203*	-1.828	-0.059	-0.214	-1.902	-0.062	-0.172	-1.489	-0.050
LESS THAN PART TIME	0.049	0.331	0.014	0.020	0.131	0.006	-0.002	-0.014	-0.001
UNEMPLOYED	0.006	0.020	0.002	0.011	0.037	0.003	-0.039	-0.116	-0.011
STUDENT	0.283**	2.020	0.082	0.255*	1.741	0.075	0.366**	2.457	0.106
RETIRED	0.302*	1.751	0.088	0.257	1.453	0.075	0.319*	1.751	0.092
AT HOME	0.172	1.130	0.050	0.142	0.917	0.042	0.151	0.952	0.044
SICK	0.290	0.549	0.084	0.215	0.390	0.063	0.250	0.379	0.072
i) Religiosity									
CHURCH ATTENDANCE							0.085***	4.750	0.025
Observations	1130			1083			1068		
Prob(LM-statistic)	0.000						0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

However, it can be argued that the index of direct democratic participation possibilities disregards substitutive and complementary relationships between the single components as it is a nonweighted composite index (Frey and Stutzer 2002). Furthermore, factors in closer relation to the taxation might have a stronger impact on tax morale than other factors. Thus, equations 8 to 11 evaluate each single component of the direct democratic participation index (see *Table 4* and *5*). For both data sets, all the coefficients for the single components are highly significant and it is interesting to notice that the index with the strongest direct connection to taxes (financial referendum), has the highest coefficient value and strongest marginal effects. An increase in the index of legislative financial referendum by one point raises the proportion of taxpayers with the highest tax morale by 6.2 (2.6) percentage points in the WVS (ISSP) data set.

Including the single items separately into the equations disregards the fact that the instruments of initiative and referendum have different rationales. The referendum is a strong restriction for the politicians or the legislature to act in their personal interest (see Feld and Kirchgässner 2000). As a consequence, tax revenues might be spent more in accordance with the preferences of the taxpayers, restricting a possible politicians' cartel. Furthermore, the referendum possibility leads the politicians to adopt a relatively consensual position in order to avoid policy rejections. Contrary to a referendum, with an initiative taxpayers are in the position of "agenda setters" (see Feld and Kirchgässner 2000). It allows to submit undesired issues to the voters. An initiative helps to express the taxpayers' preferences on what should be done with the taxes and thus opens the door for new and innovative ideas. As indexes do not tell as much as a single instrument, in Eq. 12a and 12b we include a dummy on legislative referenda (mandatory) and the signature requirements for legislative initiatives to assess the (marginal) impact of both instruments (see *Table A3* in the Appendix)⁸. Furthermore, such a procedure reduces the problems of multicorrelation as the correlation between the subindex for legislative referendum and legislative initiative is very high (0.772). For both data sets the coefficient of the dummy LEGISLATIVE REFERENDUM is highly significant with high marginal effects (9.7 percentage points in WVS, 6.8 in the ISSP data set). Similarly, higher signature requirements lead to a lower tax morale, but are not statistically significant. The mandatory referendum seems to be a stronger instrument to enhance tax morale than the initiative. A possible reason for the differences between both instruments might be that the

⁸ The dummy of the legislative referendums indicates whether a canton has the possibility of a legislative referendum (mandatory). The signature requirement for legislative initiatives is the major parameter in this form of direct democracy and an indicator of the costs of using the initiative instrument. The higher the number of signatures, the more difficult and costly it is to realise the initiative. This was measured as a relative value (signature requirements/total number of voters).

mandatory referendum is the strongest form of direct democratic control, as a referendum has to be held on all new fiscal decisions (see Feld and Kirchgässner 2001). An initiative on the other hand imposes costs to force a vote on a given issue. In Switzerland there is evidence that the interest of the political elite does not always correspond to taxpayers' preferences. Frey and Eichenberger (1999, p. 20) report an interesting example from Switzerland in 1992, where taxpayers were not ready to pay additional expenses rejecting in an optional referendum the proposal to increase the salaries and the staff of Swiss Members of Parliament. In general, between 1848 and 1997 in 36% of the 316 referenda voters had a different opinion than the Parliament (see also Frey and Eichenberger 1999).

In order to account for different cultural backgrounds and thus to better isolate the institutional effect from the cultural one, a language dummy variable (German speaking individuals) has been integrated⁹. Culture can be seen as a kind of language, based on rule systems, as ideas, values, and internal institutions as customs and conventions (see Heinrich et al. 1999). An essential question in the tax compliance context is whether culture influences co-operation, solidarity, or in our analysis tax morale. We can see in the last equation that the coefficients for the direct democratic participation rights remain highly significant. On the other hand, the language factor does not show a statistically significant effect on tax morale. Thus, it can be concluded that the extent of direct democracy remains robust, when controlling for cross-regional differences.

⁹ In order to save degrees of freedom, only the index of direct democracy has been integrated the in the WVS estimation and not both single direct democratic participation instruments as in the estimation with the ISSP data set, which covers more observations at the cantonal level.

Table 4

Sensitivity Analysis for the Effects of Direct Democracy on Tax Morale (WVS 1996)

WVS 1996						
<i>Weighted Ordered Probit</i>						
<i>Dependent Variable: Tax Morale</i>						
<i>Independent Variables</i>	<i>8a</i>	<i>9a</i>	<i>10a</i>	<i>11a</i>	<i>12a</i>	<i>13a</i>
a) Deterrence Factors						
FINE RATE	-0.003*** (-0.001)	-0.003*** (-0.001)	-0.001 (-0.001)	0.001 (0.000)	-0.001 (0.000)	-0.002* (0.001)
AUDIT PROBABILITY	0.002* (0.001)	0.002** (0.001)	0.002* (0.001)	-0.5E-03 (0.000)	0.002** (0.001)	0.001 (0.000)
b) Tax Rate						
INDIVIDUAL INCOME TAX RATE	-0.008 (-0.003)	-0.008 (-0.003)	-0.007 (-0.003)	-0.007 (-0.003)	-0.007 (-0.003)	-0.007 (-0.003)
c) Direct Democracy						
INDEX DIRECT DEMOCRACY						0.161*** (0.064)
Subindices						
CONSTITUTIONAL INITIATIVE	0.148*** (0.059)					
LEGISLATIVE INITIATIVE		0.154*** (0.061)				
LEGISLATIVE REFERENDUM			0.099*** (0.040)			
LEGISLATIVE FINANCIAL REFERENDUM				0.157*** (0.062)		
Single Instruments						
DUMMY LEGISLATIVE REFERENDUM					0.244*** (0.097)	
SIGNATURE REQUIREMENT LEGISLATIVE INITIATIVE					-0.067 (-0.026)	
d) Trust						
TRUST IN GOVERNMENT	0.179*** (0.071)	0.180*** (0.072)	0.158*** (0.063)	0.168*** (0.067)	0.152*** (0.060)	0.169*** (0.067)
e) Language						
GERMAN SPEAKING						0.081 (0.032)
f) Further variables						
	yes	yes	yes	yes	yes	yes

Notes: Marginal effects for the highest tax morale score are given in parentheses. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 5

Sensitivity Analysis for the Effects of Direct Democracy on Tax Morale (ISSP 1999)

<i>ISSP 1999</i>						
<i>Weighted Ordered Probit</i>						
<i>Dependent Variable: Tax Morale</i>						
<i>Independent Variables</i>	<i>8b</i>	<i>9b</i>	<i>10b</i>	<i>11b</i>	<i>12b</i>	<i>13b</i>
a) Deterrence Factors						
FINE RATE	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	0.001 (0.000)	-0.50E-03 (0.000)	0.42E-03 (0.000)
AUDIT PROBABILITY	0.4E-03 (0.000)	0.4E-03 (0.000)	0.31E-03 (0.000)	-0.001 (0.000)	0.001 (0.000)	0.17E-03 (0.000)
b) Tax Rate						
INDIVIDUAL INCOME TAX RATE	-0.018 (-0.005)	-0.017 (-0.005)	-0.004 (-0.005)	-0.013 (-0.004)	-0.20E-03 (0.000)	-0.001 (0.000)
c) Direct Democracy						
<i>Subindices</i>						
CONSTITUTIONAL INITIATIVE	0.051* (0.015)					
LEGISLATIVE INITIATIVE		0.064** (0.018)				
LEGISLATIVE REFERENDUM			0.088*** (0.026)			
LEGISLATIVE FINANCIAL REFERENDUM				0.090*** (0.026)		
<i>Single Instruments</i>						
DUMMY LEGISLATIVE REFERENDUM					0.237*** (0.068)	0.226*** (0.065)
SIGNATURE REQUIREMENT LEGISLATIVE INITIATIVE					-0.043 (-0.012)	-0.002 (-0.001)
d) Trust						
TRUST IN COURT AND LEGAL SYSTEM	0.095*** (0.028)	0.096*** (0.028)	0.097*** (0.028)	0.084*** (0.024)	0.094*** (0.027)	0.090***
e) Language						
GERMAN SPEAKING						0.168 (0.049)
f) Further variables						
	yes	yes	yes	yes	yes	yes

Notes: Marginal effects for the highest tax morale score are given in parentheses. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FRENCH AND ITALIAN SPEAKING. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

3. Local Autonomy

Federalism is a second important political institution in Switzerland. *Table 6* and *7* present the estimations. First we integrate the variable LOCAL AUTONOMY into the equation without the variables TRUST IN GOVERNMENT (COURT AND THE LEGAL SYSTEM) and INDEX OF DIRECT DEMOCRACY. The coefficients show in both data sets a statistically significant positive effect on tax morale. The share of individuals indicating the highest tax morale increases in the WVS data set (ISSP) by 6.2 (5.4) percentage points with an increase in one index point of autonomy. The introduction of the trust variables does not affect the size and the significance of the variable. The last equation jointly includes local autonomy and direct democracy. The results indicate that the two constitutional factors interact with each others and thus work as complements¹⁰. Both determinants help citizens to express their demands and to control the government. As we can see, the coefficient for local autonomy loses its significance and its size in the WVS, while the direct democracy index remains robust. On the other hand, the ISSP data indicates that the variable LOCAL AUTONOMY remains highly significant with a slightly lower coefficient and a smaller marginal effect. On the other hand, the index of direct democracy is still significant but at a lower significance level and with lower coefficient and marginal effect values.

Frey and Stutzer (2000) argue that direct democracy and local autonomy are interdependent. Direct democracy and federal structures foster each other because individuals are interested in a strong federalism. They are bearing the costs and benefits of governments' activities, which helps taxpayers to get a better identification. In general, Feld and Kirchgässner (2001) point out that:

“The more important regional and local jurisdictions are in the internal organization of a nation-state, the more important is the question of the proper decision-making procedures at the different government levels. The assignment of competencies to different government levels is linked to decision-making procedures” (p. 333).

The two variables are significantly correlated at the 0.01 level (WVS, $r = 0.392$; ISSP, $r = 0.574$). Thus, it is difficult to separate the effects of the two variables in one model.

In general it could be criticised that including aggregated variables as direct democracy or local autonomy might produce downward biased standard errors (see, e.g., Frey

¹⁰ For similar results analysing happiness see Frey and Stutzer (2002).

and Stutzer 2000). To check whether a correction regarding the standard errors has an effect on the significance level of the aggregated variables, we present in *Table A3* and *A4* a summary of the main estimations with standard errors adjusted to clustering in 20 cantons (WVS), respectively 26 cantons (ISSP). *Table A3* and *A4* indicate that no changes are observable regarding our main aggregated variables: direct democracy and federalism have a significant positive effect on tax morale.

Table 6
Tax Morale and Local Autonomy (WVS 1996)

<i>WVS 1996</i>						
<i>Weighted Ordered Probit</i>	<i>Eq. 5a</i>		<i>Eq. 6a</i>		<i>Eq. 7a</i>	
<i>Dependent Variable: Tax Morale</i>						
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Deterrence Factors						
FINE RATE	-0.001	0.000	-0.39E-03	0.000	-0.002	-0.001
AUDIT PROBABILITY	0.002**	0.001	0.002**	0.001	0.001**	0.001
b) Tax Rate						
INDIVIDUAL INCOME TAX RATE	-0.009*	-0.003	-0.008	-0.003	-0.007	-0.003
c) Local Autonomy						
INDEX LOCAL AUTONOMY	0.156**	0.062	0.165***	0.066	0.015	0.006
d) Trust						
TRUST IN GOVERNMENT			0.165***	0.066	0.169***	0.067
e) Direct Democracy						
INDEX DIRECT DEMOCRACY					0.180***	0.072
f) Further variables						
	yes		yes		yes	
Number of observations	910		879		879	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on an four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 7
Tax Morale and Local Autonomy (ISSP 1999)

<i>ISSP 1999</i>						
<i>Weighted Ordered Probit</i>	<i>Eq. 5b</i>		<i>Eq. 6b</i>		<i>Eq. 7b</i>	
<i>Dependent Variable: Tax Morale</i>						
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Deterrence Factors						
FINE RATE	0.85E-04	0.000	0.28E-03	0.000	-0.10E-03	0.000
AUDIT PROBABILITY	0.001	0.000	0.24E-03	0.000	-0.34E-04	0.000
b) Tax Rate						
INDIVIDUAL INCOME TAX RATE	-0.006	-0.002	-0.005	-0.001	-0.002	-0.001
c) Local Autonomy						
INDEX LOCAL AUTONOMY	0.187***	0.054	0.197***	0.057	0.142**	0.041
d) Trust						
TRUST IN COURT AND THE LEGAL SYSTEM			0.094***	0.027	0.093***	0.027
e) Direct Democracy						
INDEX DIRECT DEMOCRACY					0.061*	0.018
f) Further variables						
	yes		yes		yes	
Number of observations	1114		1068		1068	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

IV. CONCLUSIONS

The basic intention of this paper is to analyse how formal and informal institutions affect tax morale. Empirical and experimental findings in the tax compliance literature have shown that the standard model of tax evasion, based on an expected utility maximisation approach, predicts a higher degree of tax evasion than observed. Thus, the tax compliance puzzle is why people pay taxes. It has been argued that tax morale might explain such a high compliance. However, hardly any empirical study has analysed what shapes tax morale. This paper tries to fill out this gap analysing tax morale as dependent variable working with two different data sets from Switzerland: the WVS and the ISSP. Special attention has been given to two constitutional determinants which are rarely analysed in the empirical tax compliance

literature: direct democracy and local autonomy. Institutions that respect the preferences of the citizens will have more support by the people than a state that acts as a Leviathan, and thus enhance tax morale. Both instruments help to spend taxes according to the citizens' preferences, which increases the motivation to pay the taxes. Furthermore, we checked whether trust in government and trust in the court and the legal system correlates with a higher tax morale.

With these two data sets, strong evidence has been found that formal and informal institutions significantly influence tax morale. This effect tends to persist even after controlling for the basic variables from the traditional tax evasion models (probability of detection, the fine for tax evasion, and individuals' tax rates) and socio-demographic and socio-economic factors (age, income, education, gender, marital status, employment status) and doing sensitivity tests. In line with a recent empirical study done by Feld and Frey (2002) in Switzerland, in pooled cross section time series estimations for Swiss cantons, the traditional deterrence factors are not performing in a satisfactory way. In many estimations done with our two data sets the coefficients were not significant.

APPENDIX

Table A1
Direct Democratic Rights in Swiss Cantons

<i>Canton</i>	<i>Index for Constitutional Initiative</i>	<i>Index for Legislative Initiative</i>	<i>Index for Legislative Referendum</i>	<i>Index for Financial Referendum</i>	<i>Composite Index for Direct Democratic (Mandatory) Rights</i>	<i>Dummy Legislative Referendum (Mandatory)</i>	<i>Signature Requirement Legislative Initiative^(a)</i>	<i>Local Autonomy</i>
Aargau	5.67	5.67	6	4.5	5.46	1	0.88	4.9
Appenzell I. Rh.	6	6	6	3	5.25	1	0.00	5
Appenzell A. Rh.	6	6	6	4	5.5	1	0.00	5.8
Bern	2.67	2.67	3.67	5	3.5	0	2.22	4.6
Basel-Landschaft	6	6	6	4.75	5.69	1	0.87	4.3
Basel-Stadt	4.67	4.67	4	4.25	4.4	0	3.20	5.5
Fribourg	2.67	2.67	2.33	2	2.42	0	3.98	4.2
Genève	2	2	2	1	1.75	0	4.84	3.2
Glarus	6	6	6	4	5.5	1	0.00	5.6
Graubünden	4	5	6	4	4.75	1	2.42	5.8
Jura	4.67	4.67	3	2.5	3.71	0	3.92	4
Luzern	4.67	5.33	3.67	4.25	4.48	0	1.77	4.1
Neuchâtel	2.67	2.67	1.67	1.5	2.13	0	5.86	3.7
Nidwalden	2.67	6	6	5	4.92	1	0.00	5.5
Obwalden	5.33	6	6	5	5.58	1	0.00	6
Sankt Gallen	3.33	4	3	3.25	3.4	0	1.44	4.9
Schaffhausen	5.33	5.33	5.17	4.5	5.08	1	2.09	6.1
Solothurn	5.33	5.33	6	5	5.42	1	1.84	4.9
Schwyz	5.33	5.33	4.67	4.38	4.93	1	2.50	4.6
Thurgau	3.67	3.67	4.33	4.5	4.04	0	2.93	5.9
Ticino	1.33	2.67	1.67	2.75	2.1	0	3.66	4.3
Uri	5.67	5.67	5.33	5	5.42	1	1.19	5.4
Vaud	2.33	2.33	2	3	2.42	0	3.37	4.7
Valais	3	3.67	6	1	3.42	0	2.28	5.5
Zug	5	5	3.67	4	4.42	0	3.30	6
Zürich	3.33	3.33	6	4	4.17	1	1.31	5.4

Source: Index Direct Democracy, Frey and Stutzer (2000, p. 937); Dummy Legislative Referendum and Signature Requirement Legislative Initiative, Stutzer (1999, pp. 18-19). Local Autonomy, Ladner (1994), Frey and Stutzer (1999, p. 27). See also Trechsel and Serdült (1999).

Notes: ^(a) Relative value (signature requirements/total number of voters). The cantons which have or had until recently the 'Landsgemeinde' (town meeting) (Appenzell I. Rh., Obwalden, Glarus, Appenzell A. Rh. and Nidwalden), have been coded with the value 1 for the dummy of legislative referendum and the value 0 for the signature requirements (absolute value=1).

Table A2
Derivation of Variables WVS

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (% “never justified” – code 1 from a ten-point scale where 1=never and 10=always). The ten-point scale has been recoded into a four-point scale, with the value 4 standing for “never justifiable”. 4-10 has been integrated in group 1 because of a lack of variance.
FINE RATE	Standard legal fine (in percent) as a multiple of the evaded tax amount based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b)
PROBABILITY OF DETECTION	Number of tax auditors as a percentage of the total number of taxpayers based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b).
INDIVIDUAL TAX RATE	Own calculations based on the average weighted value (in percentage) using the WVS income groups. From the tax table (Steuerbelastung in der Schweiz 1996, p. 48) the value closest to the average found in the WVS groups is used, groups 6 and 7 being pooled. For the highest value an average income of 300'000 Swiss francs has been assumed (midpoint). For simplicity, no differentiation between singles and married people has been made, working with the individual tax rate table for singles.
TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all).
CHURCH ATTENDANCE	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holidays, once a year, less often, never practically never (7= more than once a week to 1=never, practically never).
INCOME	Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions. <ol style="list-style-type: none"> 1. Less than 20'000 Swiss Francs 2. 20'000-26'999 3. 27'000-31'999 4. 32'000-37'999 5. 38'000-44'999 6. 45'000-51'999 7. 52'000-59'999 8. 60'000-69'999 9. 70'000-89'999 10. More than 90'000
EDUCATION	What is the highest educational level that you have attained? <ol style="list-style-type: none"> 1. Never went to school 2. Incomplete primary school 3. Primary school (up to 12 years of age) 4. Apprenticeship 5. Lower secondary school (up to 16 years of age) 6. Secondary school without diploma (16-19 years) 7. Technical school 8. Secondary school with diploma 9. University or Federal Polytechnical School without degree 10. University or Federal Polytechnical with degree
INDIVIDUAL FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied).

Source: Inglehart et al. (2000).

Table A3
Derivation of Variables ISSP

Variable	Derivation
TAX MORALE (dependent variable)	Do you feel it is wrong or not wrong if a taxpayer does not report all of his or her income in order to pay less income taxes? (1. not wrong, 2. a bit wrong, 3. wrong, 4. seriously wrong).
TRUST IN COURT AND THE LEGAL SYSTEM	How much confidence do you have in courts and the legal system (5=complete confidence to 1=no confidence at all).
FINE RATE	Standard legal fine (in percent) as a multiple of the evaded tax amount based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b).
PROBABILITY OF DETECTION	Number of tax auditors as a percentage of the total number of taxpayers based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b).
INDIVIDUAL TAX RATE	Own calculations based on the average weighted value (in percentage) working with the income information given by the ISSP. From the tax table (Steuerbelastung in der Schweiz 1999, p. 48) the value closest to the ISSP income values (midpoint) is used. For simplicity, no differentiation between singles and married people has been made, working with the individual tax rate table for singles.
CHURCH ATTENDANCE	How often do you take part in the activities or organisations of a church or a place of worship, other than attending services? Never (1), less than once a year, about once or twice a year, several times a year, about once a month, 2-3 times a month, nearly every week, every week, several times a week (9).
INCOME	Monthly earnings from employment in Swiss francs (midpoints).
EDUCATION	What is the highest educational level that you have attained? <ol style="list-style-type: none"> 1. Incomplete primary school 2. Primary school (up to 12 years of age) 3. Incomplete secondary 4. Secondary completed 5. Incomplete + complete semi-higher qualification, incomplete university, others 6. University completed

Source: ISSP (1998)

Table A4

Determinants of Tax Morale WVS 1996 (Std. Err. Adjusted to Clustering in 20 Cantons)

<i>WVS 1996</i>					
<i>Weighted Ordered Probit</i>					
<i>Dependent Variable: Tax Morale</i>					
<i>Independent Variables</i>	<i>14a</i>	<i>15a</i>	<i>16a</i>	<i>17a</i>	<i>18a</i>
a) Deterrence Factors					
FINE RATE	-0.002** (-2.206)	-0.002* (-1.680)	-0.001* (-1.943)	-0.39E-03 (0.810)	-0.002* (-1.794)
AUDIT PROBABILITY	0.001 (0.749)	0.001 (0.631)	0.002 (1.294)	0.002 (1.146)	0.001 (0.773)
b) Tax Rate					
INDIVIDUAL INCOME TAX RATE	-0.007* (-1.714)	-0.007 (-1.646)	-0.007 (-1.512)	-0.008* (-1.909)	-0.007* (-1.710)
c) Institutions					
INDEX DIRECT DEMOCRACY	0.184*** (3.929)	0.161*** (3.036)			0.180*** (3.371)
<i>Single Instruments</i>					
DUMMY LEGISLATIVE REFERENDUM			0.244*** (2.638)		
SIGNATURE REQUIREMENT LEGISLATIVE INITIATIVE			-0.067 (-1.315)		
INDEX LOCAL AUTONOMY				0.165 (1.611)	0.015 (0.092)
d) Trust					
TRUST IN GOVERNMENT	0.170*** (3.125)	0.169*** (3.153)	0.152*** (2.976)	0.165*** (3.262)	0.169*** (3.159)
e) Language					
GERMAN SPEAKING		0.081 (0.453)			
f) Further variables					
	yes	yes	yes	yes	yes

Notes: z-values are given in parentheses. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FRENCH AND ITALIAN SPEAKING. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table A5

Determinants of Tax Morale ISSP 1999 (Std. Err. Adjusted to Clustering in 26 Cantons)

<i>ISSP 1999</i>					
<i>Weighted Ordered Probit</i>					
<i>Dependent Variable: Tax Morale</i>					
<i>Independent Variables</i>	<i>14b</i>	<i>15b</i>	<i>16b</i>	<i>17b</i>	<i>18b</i>
a) Deterrence Factors					
FINE RATE	-0.001 (-0.686)	-0.50E-03 (-0.570)	-0.42E-03 (-0.487)	0.28E-03 (0.255)	-0.15E-03 (-0.201)
AUDIT PROBABILITY	-0.47E-04 (-0.047)	0.001 (0.671)	0.17E-03 (0.162)	0.24E-03 (0.253)	0.49E-03 (0.559)
b) Tax Rate					
INDIVIDUAL INCOME TAX RATE	-0.010 (-0.461)	-0.20E-03 (-0.010)	-0.001 (-0.034)	-0.005 (-0.212)	0.004 (0.184)
c) Institutions					
INDEX DIRECT DEMOCRACY	0.104*** (2.736)				
<i>Single Instruments</i>					
DUMMY LEGISLATIVE REFERENDUM		0.237*** (2.674)	0.226** (2.398)		0.219** (2.533)
SIGNATURE REQUIREMENT LEGISLATIVE INITIATIVE		-0.043 (-0.945)	-0.002 (-0.028)		-0.015 (-0.339)
INDEX LOCAL AUTONOMY				0.197*** (2.742)	0.111* (1.833)
d) Trust					
TRUST IN COURT AND LEGAL SYSTEM	0.093*** (3.159)	0.094*** (3.261)	0.090*** (2.996)	0.094*** (3.190)	0.096*** (3.311)
e) Language					
GERMAN SPEAKING			0.168 (1.165)		
f) Further variables					
	yes	yes	yes	yes	yes

Notes: z-values are given in parentheses. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FRENCH AND ITALIAN SPEAKING. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

REFERENCES

- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Bahl, R. (1999). Implementation Rules For Fiscal Decentralization, Working Paper, International Studies Program, School of Policy Studies, Georgia State University, Atlanta.
- Beron, K. J., H. V. Tauchen, and A. D. Witte (1992). The Effect of Audits and Socioeconomic Variables on Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: The University of Michigan Press: 67-89.
- Feld, L. P. and B. S. Frey (2002a). Trust Breeds Trust: How Taxpayers are Treated, *Economics of Governance*. 3: 87-99.
- Feld, L. P. and B. S. Frey (2002b). The Tax Authority and the Taxpayer. An Exploratory Analysis, paper presented at the 2002 Annual Meeting of the European Public Choice Society, Belgrate.
- Feld, L. P. and G. Kirchgässner (2000). Direct Democracy, Political Culture, and the Outcome of Economic Policy: A Report on the Swiss Experience, *European Journal of Political Economy*. 16: 287-306.
- Feld, L. P. and G. Kirchgässner (2001). The Political Economy of Direct Legislation: Direct Democracy and Local Decision-Making, *Economic Policy*. 16: 331-367.
- Feld, L. P. and M. R. Savioz (1997). Direct Democracy Matters for Economic Performance: An Empirical Investigation, *KYKLOS*. 50: 507-538.
- Feld L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Frank, J. D. (1941). Recent Studies of the Level of Aspiration, *Psychological Bulletin*. 28: 218-226.
- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK, Edward Elgar Publishing.
- Frey, B. S. (2001). *Inspiring Economics*. Human Motivation in Political Economy. Cheltenham, UK: Edward Elgar.
- Frey, B. S. (2003). The Role of Deterrence and Tax Morale in Taxation in the European Union, Jelle Zijlstra Lecture, Netherlands Institute for Advanced Study in the Humanities and Social Sciences (NIAS).
- Frey, B. S. and R. Eichenberger (1999). *The New Democratic Federalism for Europe*. Cheltenham, UK: Edward Elgar.
- Frey, B. S. and L. P. Feld (2002). Deterrence and Morale in Taxation: An Empirical Analysis, CESifo Working Paper No. 760, August 2002.

- Frey, B. S. and A. Stutzer (2000). Happiness, Economy and Institutions, *Economic Journal*. 110: 918-938.
- Frey, B. S. and A. Stutzer (2002). *Happiness and Economics*. Princeton: Princeton University Press.
- Grasmick, H. G., R. J. Bursik and J. K. Cochran (1991). "Render Unto Caesar What Is Caesar's": Religiosity and Taxpayers' Inclinations to Cheat, *Sociological Quarterly*. 32: 251-266.
- Hardin, R. (1998). Trust in Government, in: V. Braithwaite and Margaret Levi (eds.), *Trust and Governance*. New York: Russell Sage Foundation: 9-27.
- Heinrich, J., P. Young, R. Boyd, K. McCabe, W. Albers, A. Ockenfels and G. Gigerenzer (1999). What Is the Role of Culture in Bounded Rationality?, unpublished manuscript.
- Hirschman, A. O. (1970). *Exit, Voice, and Loyalty*. Cambridge (Mass.): Harvard University Press.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- ISSP (1998). Codebook, Religion II, ZA Study 3190, Zentralarchiv für Empirische Sozialforschung, Köln.
- Kucher, M., and L. Götte (1998). Trust Me: An Empirical Analysis of Taxpayer Honesty, *FinanzArchiv*. 55: 429-444.
- Ladner, A. (1994). Finanzkompetenzen der Gemeinden – ein Überblick über die Praxis, in: F. Eng, A. Glatthard, and B. H. Koenig (eds.), *Finanzföderalismus*. Bern: Emissionszentrale der Schweizer Gemeinden: 64-85.
- Levi, M. (1988). *Rules and Revenue*. Berkeley: University of California Press.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Prinz, A. (2002). A Moral Theory of Tax Evasion, unpublished manuscript, Westfälische Wilhelms-Universität Münster.
- Siegel, S. (1957). Level of Aspiration and Decision Making, *Psychological Review*. 64: 253-262.
- Simon, H. A. (1955). A Behavioral Model of Rational Choice, *Quarterly Journal of Economics*. 69: 174-183.
- Slemrod, J. (2002). Trust in Public Finance, NBER Working Paper 9187, September, Cambridge, Ma.
- Slemrod, J., M. Blumenthal and C. Christian (2001). Taxpayer Response to an Increase Probability of Audit: Evidence from a Controlled Experiment in Minnesota, *Journal of Public Economics*. 79: 455-483.
- Spicer, M. W. and L. A. Becker (1980). Fiscal Inequity and Tax Evasion: An Experimental Approach, *National Tax Journal*. 33: 171-175.
- Stutzer, A. (1999). Demokratieindizes für die Kantone der Schweiz. Working Paper No. 23. Institute for Empirical Research in Economics, University of Zurich.
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Torgler, B. (2001). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.

- Torgler, B. (2002a). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-684.
- Torgler, B. (2002b). Does Culture Influence Tax Morale? Evidence from Different European Countries, WWZ-Discussion Paper 02/08, Basel: WWZ.
- Torgler, B. (2002c). Preaching Matters: Tax Morale and Religiosity, WWZ-Discussion Paper 02/03, Basel: WWZ.
- Torgler, B. (2003). Tax Morale, Rule Governed Behaviour and Trust, forthcoming in: *Constitutional Political Economy*.
- Torgler, B. and C. A. Schaltegger (2003). Tax Amnesty and Political Participation, WWZ-Discussion Paper 03/07, Basel: WWZ.
- Trechsel, A. and U. Serdült (1999). *Kaleidoskop Volksrechte: Die Institutionen der direkten Demokratie in den schweizerischen Kantonen 1970-1996*. Basel: Helbing & Lichtenhahn.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.

CHAPTER VIII

TAX MORALE AND POLITICAL PARTICIPATION:

EVIDENCE FROM THE UNITED STATES *

ABSTRACT

The intention of this paper is to analyse how direct democracy rights affect tax morale. Empirical studies in the tax compliance literature did rarely systematically analyse tax morale as dependent variable and the effects of institutional variables as direct democracy. Therefore, data from the United States in 1995 are analysed, based on the World Values Survey. The findings suggest that direct democratic rights increase tax morale.

JEL classification: H260, H730, D700

Keywords: tax morale, tax compliance, tax evasion, direct democracy

* A shorter version covering Switzerland and the United States is going to be published: Benno Torgler (2003). Direct Democracy Matters: Tax Morale and Political Participation, *National Tax Association Papers and Proceedings* (Orlando, 2002).

I. INTRODUCTION

Standard models of taxpayer behaviour do not pay attention to the influence institutions as direct democracy have on increasing tax compliance. Many countries have some sort of direct democratic institutions. However, we find its regular use especially in two countries: Switzerland and the United States. Torgler (2002) found for Switzerland that political participation affects tax morale in a positive way. Thus, the purpose of this paper is to analyse whether direct democratic rights have also a positive influence on tax morale in the United States. Before starting with the empirical part, we show in Section II that there is a link between democracy and taxation.

II. TAXATION AND THE MOVEMENTS OF DIRECT DEMOCRACY

This short trip through history will show that there is a connection between democratic tendency and taxation movements. In the beginning of the sixth century B.C., we find a development towards democracy in ancient Greece (demos (people), and kratia (rule)). In the fourth century “people’s rule” was strongly developed. Each citizen had the possibility to report a violation of rights (Oakley 1994). Aristotle (1988) states in *The Politics*:

“The conclusion is evident: that governments which have a regard to the common interest are constituted in accordance with strict principles of justice, and are therefore true forms; but those which regard only the interest of the rulers are all defective and perverted forms, for they are despotic, whereas a state is a community of freemen” (p. 61).

Adams (1993) intensively describes the taxation in ancient Greece. It is interesting to notice that the ancient Greek had a system of revenue sharing without a tax administration. The progressive taxation was not the main revenue source. Instead the largest amount of revenue was achieved by the liturgy, a *voluntary* contribution from the rich to the city-state. Leading citizens often donated three and four times the amount expected from them. With this money, bridges and the extravagant public buildings were built and a very powerful navy was financed. Adams (1993) points out:

“The liturgy can operate only from a spirit of unselfish citizenship, with all citizens coming forward to give of themselves or their substance for the good of the community. In ancient Greece, it made heavy taxation, and all the evil it breeds, unnecessary. That is just one of many reasons why the Greeks command our admiration” (p. 66).

Democratic tendencies and the idea of people’s sovereignty can be found in the work of Locke, Montesquieu, Rousseau. Those works have influenced the movements towards direct democratic institutions in the early 1900s (see Oakley 1994).

Discussions about taxation in the Enlightenment have been influenced by the same scholars. The citation at the beginning of the paper shows an interesting observation by Montesquieu, who many years before James Buchanan and other public choice scholars argued against the fiction defining politicians and bureaucrats as “morally superhuman” and as aiming exclusively at maximizing the common weal. As a consequence, tax laws must be defined by the citizens and not by the governments with their “imaginary wants”. Furthermore, the work of Locke (Second Treatise on Civil Government) influenced and provided the basis for the dispute as to what consent the thirteen colonies in British North America were taxed by the British taxation, and for the revolution which finally formed the United States (see Adams 1993). Adams cites an interesting document written by Benjamin Franklin in 1773:

“To make your taxes more odious, and more likely to procure resistance, send from the capital a board of officers to superintend the collection, composed of the most indiscreet, ill-bred, and insolent you can find.... If any revenue officers are suspected of the least tenderness for the people, discard them. If others are justly complained of, protect and reward them. If any of the under officers behave so as to provoke the people to drub them, promote those to better office” (Franklin 1944, pp. 80-81).

III. EMPIRICAL ANALYSIS

In direct-democratic states, voters have the possibility to influence tax law indirectly or directly, which helps taxpayers to better monitor and control politicians and thus even out the asymmetric information between them and their agents (government), which reduces the discretionary power (for a theoretical analysis see Torgler 2002).

1. Determinants of Tax Morale

The dependent variable tax morale is developed in line with previous studies, similar to the estimation models (weighted least squares and weighted ordered probit). The next subsections show the variables which have been integrated into the equations. As there are not many studies that systematically searched for factors which influence tax morale, most of the presented control variables refer to the tax compliance literature. The following estimation can be developed:

$$TM_i = \beta_0 + \beta_1 \cdot DEM_i + \beta_2 \cdot MS_i + \beta_3 \cdot EC_i + \beta_4 \cdot ES_i + \beta_5 \cdot REL_i + \beta_6 \cdot DEMOC_i + \varepsilon_i$$

where TM_i measures tax morale. DEM_i is a panel of demographic factors as age, gender and education. MS_i covers the marital status, EC_i the economic situation (income, financial satisfaction), ES_i the employment status and REL_i the degree of religiosity. $DEMOC_i$ is a proxy for the degree of direct democracy.

1. Direct Democracy in the United States

In the United States, direct democracy rights as initiative and popular referendum can be found in various forms at the state and the local level. *Table 1* shows the structure in different states. The referendum is a well established tradition. From the beginning, citizens had the possibility to decide on major constitutional questions. The popular referendum gives the possibility to place government's action on the ballot for citizens' ratification (see Magleby 1994).

Magleby (1994) furthermore shows that direct legislation grew during the 70s and this development continued during the 80s and 90s¹. 26% of subject matters between 1978 and 1992 have been concerned with revenue/taxes or bond (p. 238). Magleby (1994) mentions the vote on property taxes in California (Proposition 13) which caused an intensive interest around the world and obtained that "tax cutters" were introduced and a variety of constitutional amendments proposed to lower taxes in many other U.S. states. Thus, in a

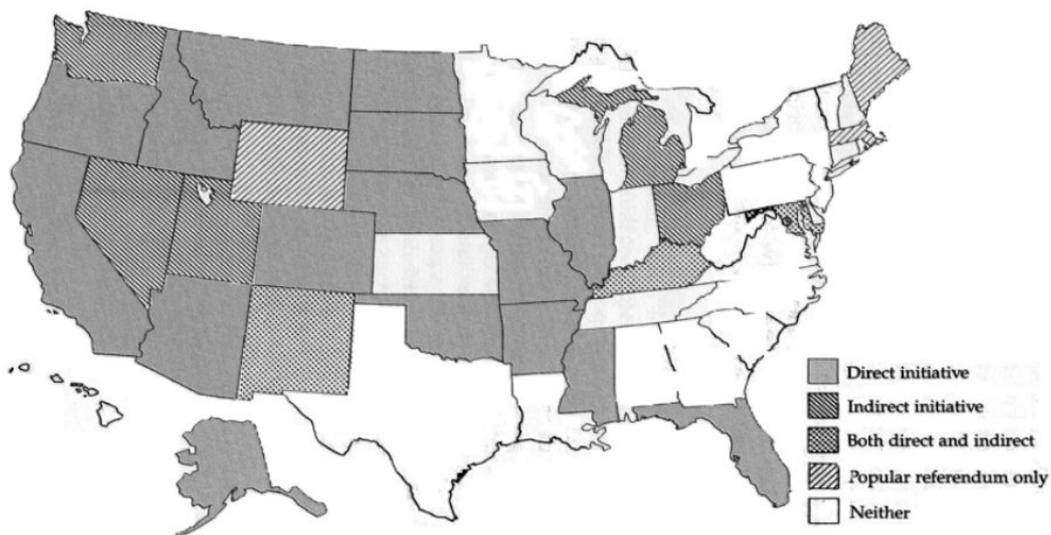
¹ As possible reasons Magleby points out: i) the intensive use by the conservatives for cutting taxes and by the liberals for the nuclear freeze movements, ii) the professionalisation of the initiative industry, iii) the frequent use of counter-initiatives, and iv) the increased possibilities due to news media.

certain federal structure, initiatives are like experiments which, if successful, catalyse similar reactions in other jurisdictions.

The World Values Survey data from the United States has the disadvantage that individuals' regional classification has not been done by states but by regions (New England, Middle Atlantic, South Atlantic, East South Central, West South Central, East North Central, West North Central, Rocky Mountain States, Pacific, and California). Thus, based on state data, aggregated region indexes, representing the degree of direct democracy, have been created. Such a procedure has the disadvantage that inside a region we have states with different degrees of direct democracy. On the other hand, we find a certain regional diversion of direct legislation in the United States. Direct democracy is much more common in the western states, which can be historically explained (see Magleby 1994). Western states in the early stages were more open to new processes and influenced by a strong progressive movement with the passion for more democratic rules (see *Figure 1*). Furthermore, results should be treated carefully as a classification by regions reduces the degree of freedoms.

Figure 1

Degree of Direct Democracy in the United States



Source: Magleby (1984, pp. 38-39)

Six different direct democracy variables have been created. The first five variables have been developed on the basis of *Table 1*. All variables are indexes based on the average sum of the states in each region. Thus, each region has a certain direct-democracy index value. DIRECT INITIATIVE, INDIRECT INITIATIVE and POPULAR REFERENDUM are indexes with the value between 0 and 1², Σ DIRECT LEGISLATION is an index between 0 and 3, where each of the three direct-democracy forms are valued with one unit. DIRECT LEGISLATION is an index between 0 and 1, where a state takes the value 0 if none of the three forms are allowed, otherwise 1.

Table 1
Direct Legislation Provision United States 1996

<i>States</i>	<i>Direct Initiative</i>	<i>Indirect Initiative</i>	<i>Popular Referendum</i>	<i>States</i>	<i>Direct Initiative</i>	<i>Indirect Initiative</i>	<i>Popular Referendum</i>
Alabama	no	no	no	Montana	yes	no	yes
Alaska	no	yes	yes	Nebraska	yes	no	yes
Arizona	yes	no	yes	Nevada	yes	yes	yes
Arkansas	yes	no	yes	New Hampshire	no	no	no
California	yes	no	yes	New Jersey	no	no	no
Colorado	yes	no	yes	New Mexico	no	no	yes
Connecticut	no	no	no	New York	no	no	no
Delaware	no	no	no	North Carolina	no	no	no
Florida	yes	no	no	North Dakota	yes	no	yes
Georgia	no	no	no	Ohio	yes	yes	yes
Hawaii	no	no	no	Oklahoma	yes	no	yes
Idaho	yes	no	yes	Oregon	yes	no	yes
Illinois	yes	no	no	Pennsylvania	no	no	no
Indiana	no	no	no	Rhode Island	no	no	no
Iowa	no	no	no	South Carolina	no	no	no
Kansas	no	no	no	South Dakota	yes	no	yes
Kentucky	no	no	yes	Tennessee	no	no	no
Louisiana	no	no	no	Texas	no	no	no
Maine	no	yes	yes	Utah	yes	yes	yes
Maryland	no	no	yes	Vermont	no	no	no
Massachusetts	no	yes	yes	Virginia	no	no	no
Michigan	yes	yes	yes	Washington	yes	yes	yes
Minnesota	no	no	no	West Virginia	no	no	no
Mississippi	no	yes	no	Wisconsin	no	no	no
Missouri	yes	no	yes	Wyoming	no	yes	yes

Source: Gerber (1999, p. 147)

² For the index DIRECT INITIATIVE a state takes the value 1 if it allows a direct initiative, otherwise 0. Similar procedure for the variables INDIRECT INITIATIVE and POPULAR REFERENDUM.

However, to capture the legal requirement, a variable SIGNATURE THRESHOLD has been developed. Signature requirement is an indicator of the costs to use initiatives. The three direct-democratic forms require that petitioners gather sufficient signatures from voters ranging from about 2% to 15% (see *Table 2*). The variable SIGNATURE THRESHOLD is defined as the inverse coefficient of the average signature threshold value presented in *Table 2*. Thus, the higher the value, the lower the restrictions to use the instrument.

Table 2
Signature Requirement U.S. 1992 (in % of Registered Voters)

<i>states</i>	<i>statutory initiative</i>	<i>constitutional initiative</i>	<i>popular referendum</i>	<i>average signature threshold</i>
North Dakota	2	4	2	2.7
Maryland	-	-	3	3.0
Massachusetts	5	5	2	4.0
Colorado	5	5	5	5.0
Kentucky	-	-	5	5.0
California	5	8	5	6.0
Oregon	6	8	4	6.0
Missouri	5	8	5	6.0
Washington	8	-	4	6.0
Montana	5	10	5	6.7
South Dakota	5	10	5	6.7
Ohio	6	10	6	7.3
Nebraska	7	10	5	7.3
Michigan	8	10	5	7.7
Arkansas	8	10	6	8.0
Florida	-	8	0	8.0
Illinois	-	8	10	9.0
Oklahoma	8	15	5	9.3
Alaska	10	-	10	10.0
Arizona	10	15	5	10.0
Idaho	10	-	10	10.0
Maine	10	-	10	10.0
New Mexico	-	-	10	10.0
Nevada	10	10	10	10.0
Utah	10	-	10	10.0
Mississippi	-	12	-	12.0
Wyoming	15	-	15	15.0

Source: Magleby (1994, p. 226).

2. Socio-Demographic Variables

Socio-demographic variables appear to be important determinants of behaviour. However, as many empirical findings worked with the TCMP, relatively little empirical evidence is available. In line with Torgler (2002) the following socio-demographic variables have been included (see Appendix *Table A1*):

- age
- gender
- marital status
- education
- income
- occupation status
- religiosity
- financial satisfaction

2. Results

Weighted least squares and weighted ordered probit models are estimated. *Table 3* and *4* present the results indicating that both estimation methods show similar findings. All coefficients for the different direct democracy indexes have highly significant positive effects on tax morale, with the exception of popular referendum. The marginal effects vary between 3.2 and 53.6 percentage points. For example, an increase in the index of direct initiative by one unit raises the share of individuals indicating the highest tax morale by 6.8 percentage points. Thus, similar to the findings of Torgler (2002) for Switzerland, these results indicate that more extensive political participation rights increase people's tax morale in the United States. However, it should be noticed that the basic problem in all estimates is the degree of freedom, as the direct democratic indexes do not vary across individuals but only across regions.

Table 3

Determinants of Tax Morale in the United States 1995 (Weighted Least Squares)

<i>Weighted Least Squares</i>												
<i>Dependent V. : Tax Morale</i>	<i>Eq.1</i>	<i>Eq.2</i>		<i>Eq.3</i>		<i>Eq.4</i>		<i>Eq.5</i>		<i>Eq.6</i>		
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>										
a) Demographic Factors												
AGE 30-49	0.030	0.415	0.063	0.856	0.033	0.449	0.035	0.487	0.046	0.635	0.032	0.433
AGE 50-64	0.039	0.355	0.079	0.713	0.050	0.449	0.054	0.488	0.061	0.551	0.052	0.475
AGE 65+	-0.048	-0.319	-0.041	-0.276	-0.055	-0.366	-0.042	-0.278	-0.029	-0.193	-0.046	-0.307
FEMALE	0.233***	3.836	0.233***	3.840	0.232***	3.814	0.233***	3.834	0.232***	3.823	0.235***	3.875
EDUCATION	-0.012	-0.791	-0.011	-0.719	-0.011	-0.699	-0.012	-0.788	-0.014	-0.879	-0.012	-0.763
b) Marital Status												
MARRIED	0.265***	3.061	0.232***	2.663	0.263***	3.031	0.261***	3.016	0.248***	2.870	0.262***	3.024
LIVING TOGETHER	-0.065	-0.474	-0.034	-0.245	-0.029	-0.214	-0.054	-0.391	-0.059	-0.431	-0.047	-0.340
DIVORCED	0.210*	1.723	0.154	1.260	0.192	1.573	0.187	1.530	0.176	1.441	0.194	1.593
SEPARATED	0.256	1.248	0.228	1.111	0.258	1.254	0.256	1.248	0.241	1.175	0.267	1.300
WIDOWED	0.347**	2.171	0.316**	1.974	0.350**	2.184	0.350**	2.189	0.336**	2.106	0.353**	2.209
c) Economic Variables												
INCOME	-0.048***	-3.252	-0.051***	-3.465	-0.051***	-3.439	-0.049***	-3.341	-0.050***	-3.418	-0.048***	-3.252
FINANCIAL SATISFACTION	0.056***	4.450	0.055***	4.335	0.056***	4.427	0.057***	4.474	0.057***	4.513	0.056***	4.446
d) Employment Status												
PART TIME EMPLOYED	-0.276***	-2.817	-0.254***	-2.594	-0.270***	-2.745	-0.269***	-2.737	-0.270***	-2.755	-0.272***	-2.769
SELFEMPLOYED	0.016	0.106	0.036	0.245	0.021	0.139	0.019	0.130	0.015	0.105	0.015	0.099
UNEMPLOYED	0.060	0.511	0.086	0.731	0.069	0.583	0.059	0.505	0.044	0.374	0.057	0.482
AT HOME	0.021	0.194	0.038	0.357	0.023	0.216	0.024	0.226	0.025	0.234	0.025	0.228
STUDENT	-0.405**	-2.342	-0.419**	-2.433	-0.435**	-2.518	-0.416**	-2.407	-0.403**	-2.333	-0.423**	-2.451
RETIRED	0.097	0.720	0.139	1.044	0.110	0.812	0.099	0.737	0.088	0.657	0.106	0.790
OTHER	-0.189	-0.634	-0.138	-0.465	-0.164	-0.549	-0.186	-0.623	-0.190	-0.641	-0.169	-0.568
e) Religious Variable												
CHURCH ATTENDANCE	0.068***	4.765	0.068***	4.813	0.069***	4.809	0.068	4.784	0.070***	4.920	0.067***	4.721
f) Institutional Variables												
DIRECT INITIATIVE	0.225***	2.718										
INDIRECT INITIATIVE			0.411***	3.092								
POPULAR REFERENDUM					0.091	1.117						
DIRECT LEGISLATION							0.224**	2.436				
Σ DIRECT LEGISLATION									0.113***	2.997		
SIGNATURE THRESHOLD											1.429**	2.364
Observations	1263		1263		1263		1263		1263		1263	
R-squared	0.737		0.738		0.736		0.737		0.737		0.737	
Prob(F-statistic)	0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 4

Influences of Tax Morale in the United States in 1995 (Weighted Ordered Probit)

<i>Weighted Ordered Probit</i>												
<i>Dependent V.: Tax Morale</i>	<i>Eq.7</i>	<i>Eq.8</i>		<i>Eq.9</i>		<i>Eq.10</i>		<i>Eq.11</i>		<i>Eq.12</i>		
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>										
a) Demographic Factors												
AGE 30-49	0.044	0.014	0.055	0.017	0.049	0.015	0.046	0.015	0.046	0.014	0.046	0.015
AGE 50-64	0.149	0.047	0.171	0.054	0.164	0.052	0.159	0.050	0.154	0.048	0.161	0.051
AGE 65+	0.072	0.023	0.076	0.024	0.078	0.025	0.080	0.025	0.078	0.025	0.076	0.024
FEMALE	0.228***	0.072	0.231***	0.073	0.227***	0.071	0.229***	0.072	0.229***	0.072	0.230***	0.072
EDUCATION	0.003	0.001	0.004	0.001	0.005	0.002	0.003	0.001	0.003	0.001	0.002	0.001
b) Marital Status												
MARRIED	0.325***	0.102	0.299***	0.094	0.321***	0.101	0.324***	0.102	0.321***	0.101	0.324***	0.102
LIVING TOGETHER	-0.028	-0.009	-0.002	-0.001	-0.005	-0.002	-0.023	-0.007	-0.028	-0.009	-0.015	-0.005
DIVORCED	0.188	0.059	0.156	0.049	0.177	0.056	0.173	0.054	0.177	0.056	0.179	0.056
SEPARATED	0.003	0.001	-0.019	-0.006	0.008	0.003	0.005	0.002	-0.003	-0.001	0.014	0.004
WIDOWED	0.555**	0.175	0.516**	0.162	0.556**	0.175	0.557**	0.175	0.551**	0.173	0.561**	0.176
c) Economic Variables												
INCOME	-0.048***	-0.015	-0.051***	-0.016	-0.049***	-0.015	-0.048***	-0.015	-0.049***	-0.015	-0.047***	-0.015
FINANCIAL SATISFACTION	0.052***	0.016	0.051***	0.016	0.052***	0.016	0.052***	0.016	0.052***	0.016	0.052***	0.016
d) Employment Status												
PART TIME EMPLOYED	-0.222**	-0.070	-0.201**	-0.063	-0.212**	-0.067	-0.215**	-0.067	-0.219**	-0.069	-0.214**	-0.067
SELFEMPLOYED	-0.085	-0.027	-0.044	-0.014	-0.074	-0.023	-0.084	-0.027	-0.082	-0.026	-0.092	-0.029
UNEMPLOYED	0.115	0.036	0.134	0.042	0.118	0.037	0.107	0.034	0.108	0.034	0.102	0.032
AT HOME	-0.008	-0.002	0.003	0.001	-0.005	-0.002	-0.004	-0.001	-0.005	-0.002	-0.005	-0.002
STUDENT	0.009	0.003	0.011	0.003	0.001	0.000	0.006	0.002	0.009	0.003	0.010	0.003
RETIRED	-0.001	0.000	0.039	0.012	0.008	0.003	-0.003	-0.001	-0.006	-0.002	0.003	0.001
OTHER	-0.006	-0.002	0.043	0.013	0.006	0.002	-0.015	-0.005	-0.010	-0.003	-0.013	-0.004
e) Religious Variable												
CHURCH ATTENDANCE	0.072***	0.023	0.074***	0.023	0.073***	0.023	0.072***	0.023	0.073***	0.023	0.072***	0.023
f) Institutional Variables												
DIRECT INITIATIVE	0.215***	0.068										
INDIRECT INITIATIVE			0.529***	0.166								
POPULAR REFERENDUM					0.100	0.032						
DIRECT LEGISLATION							0.262***	0.082				
Σ DIRECT LEGISLATION									0.120***	0.038		
SIGNATURE THRESHOLD											1.708***	0.536
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg.= marginal effect.

In all models, females report a significantly higher tax morale than males. The coefficients in *Table 3* show that females on average report 0.23 score points more tax morale than males. In the weighted ordered probit estimation, the marginal effects indicate that being female rather than male increases the probability of a person stating that tax evasion is never justified by more than 7%. This indicates that women in our modern society have a strong obligation to comply. Education has no significant effect on tax morale. This result might indicate that the different influences, as the degree of fiscal knowledge, the degree of knowledge regarding evasion or avoidance opportunities and the knowledge about the benefits and services the state provides with the taxes, cancel each others out. Looking at the marital status, only married and widowed people have a significantly higher tax morale than singles. Financial satisfaction has a significantly positive and a higher income a significantly negative effect on tax morale. The coefficients indicate that an increase in the financial satisfaction score (income) by one unit raises (reduces) the share of persons indicating a very high tax morale by more than 1 percentage point. These findings indicate that the influence of financial dissatisfaction is not due to the income but rather to the “stress” regarding the financial situation. Furthermore, part-time employees have a lower tax morale than full-time employees. Finally, in all regression equations, the coefficient for church attendance is significant with a positive sign.

IV. CONCLUSIONS

The basic intention of this paper is to analyse how direct democracy affects tax morale, controlling for a broad variety of potential factors. Therefore, we analyse the United States, a country with an intensive use of direct democracy at the state and local level, but with a variety among its states. With data from the World Values Survey evidence has been found that direct democracy significantly increases tax morale. This effect tends to persist even after controlling for age, income, education, gender, marital status, employment status, religiosity, and financial satisfaction, and after sensitivity tests with the direct-democracy variables. Letting taxpayers enter the decision making process, which otherwise is monopolised by representatives, will be “rewarded” by the taxpayers with a higher tax morale. Thus, the results indicate the relevance of incorporating citizens actively into the political process. It shows that there are alternative instruments to monitoring and penalties to influence tax compliance. Direct democracy can thus be seen as a useful instrument to

support and preserve tax morale. The results are consistent with the hypothesis that direct democracy forces the government to tax citizens more adequately and to use the tax revenue straighter in the line of taxpayers' preferences than when taxpayers have less direct participation possibility. However, it should be noticed that the econometric estimations contain a basic problem. The degrees of freedom are very low as the direct democratic indexes do not vary across individuals but only across regions. It is a pity the World Values survey does not offer the information which state an individual comes from. This would allow to calculate the degree of direct democracy on the basis of much more observations.

Females report a significantly higher tax morale than males, education has no significant effect on tax morale, and married people have a significantly higher tax morale than singles. Furthermore, this study has a novel framework, as it integrates a variable surprisingly rather neglected in the tax compliance research agenda: the influence of financial satisfaction on tax morale. The results suggest that financial satisfaction has a positive effect on tax morale. The empirical findings support moreover the relevance of incorporating non-economic factors as religiosity into the analysis of tax compliance.

APPENDIX

Table A1
Derivation of Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CHURCH ATTENDANCE	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never (7= more than once a week to 1=never, practically never).
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.</p> <ol style="list-style-type: none"> 1. None or less than \$4.999 2. 5.000-9.999 3. 10.00-14.999 4. 15.000-19.999 5. 20.000-24.999 6. 25.000-29.999 7. 30.000-39.999 8. 40.000-49.999 9. 50.000-74.999 10. 75.000 and over
EDUCATION	<p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)

Source: Inglehart et al. (2000).

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Aristotle (1988). *The Politics*. Cambridge: Cambridge University Press.
- Franklin, B. (1944). Rules by which a Great Empire may be Reduced to a Small One, *American Issues*.
- Gerber, Elisabeth R. (1999). *The Populist Paradox*. Princeton: Princeton University Press.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Magleby, D. B. (1984). *Direct Legislation: Voting on Ballot Propositions in the United States*. Baltimore: Johns Hopkins University.
- Magleby, D. B. (1994). Direct Legislation in the American States, in: D. Butler and A. Ranney (eds.), *Referendums around the World*. Washington: The AEI Press: 218-257.
- Oakley, L. K. (1994). An Empirical Examination of Direct Democracy, Dissertation, George Mason University.
- Torgler, B. (2002). Tax Morale and Institutions (revised), WWZ-Discussion Paper, 02/07, Basel: WWZ.

CHAPTER IX

TAX MORALE AND TAX EVASION

EVIDENCE FROM THE UNITED STATES*

ABSTRACT

Many taxpayers truthfully declare their income to the tax administration. Why? In this paper we have found a significant correlation between tax morale and tax evasion, controlling a variety of factors. Furthermore we have analysed tax morale as dependent variable and studied the determinants that shape it using the Taxpayer Opinion Survey 1987. The results indicate that there are a variety of other variables beside coercion that significantly improve tax morale.

JEL classification: H260

Keywords: tax morale, tax compliance, tax evasion

* Benno Torgler (2003). Tax Morale and Tax Compliance: Evidence from the United States, WWZ-Discussion Paper, 03/02, Basel: WWZ.

I. INTRODUCTION

Adams' book (1993) starts with the inscription over the entrance to the Internal Revenue Service building: "Taxes are what we pay for a civilized society". An essential question is to which extent individuals are willing to pay this price. The probability of being audited by the tax administration is rather low. A big share of revenues are collected without a draconian enforcement system. Co-operation in tax compliance experiments is higher than neoclassical models would predict. What are the reasons? Is there a link between tax compliance and tax morale? What are the determinants that shape tax morale? The main purpose of this paper is to give answers to these important questions.

To get empirical insights we are going to work with the *Taxpayer Opinion Survey (TOS)*. In general, surveys give the opportunity to study a variety of factors, especially attitudes. It is even possible to integrate questions about taxpayers' behaviour. On the other hand, we find many critical aspects, as, e.g., possibly biased samples that are not representative. Tax evasion is a sensitive area, and low response rates can create biases. Thus, a certain response rate is essential to get good data. The problem with delicate questions is to obtain honest answers. Jackson and Milliron (1986) point out that the technique used to solicit responses and the way questions are framed have an effect on the respondents' answers. One way to deal with this problem is to conduct and to evaluate a variety of surveys to get a *general picture* of the main variables. An excellent method would be to conduct panels or to do regular surveys in different countries.

II. TAX MORALE AND TAX EVASION

Can we find a link between tax morale and tax evasion? There is still a lack of empirical evidence on the link between attitudes and behaviour in the tax compliance literature. Torgler (2001a) reports that there is a significant negative correlation between tax morale and the degree of shadow economy, using World Values Survey data. Frey and Schneider (2000) point out that moral costs could act as a disincentive to be active in the underground economy:

“A good citizen has moral qualms to undertake a forbidden activity. These moral costs are closely related to ‘tax morale’ which motivates citizens to pay their dues to the state” (p. 6).

Another possibility could be to compare the tax compliance results from experiments with a post-experiment questionnaire that helps to get information about subjects’ attitudes (see, e.g., Bosco and Mittone 1997). The main disadvantage of such a method is that behaviour during the experiment might influence people’s answers to the questions. Thus, such questionnaires are not used in many experiments. Other researchers use scenarios involving actions taken by federal income tax return filers. People have to follow the scenarios and answer questions. Validated scales measure respondents’ ethical perceptions, moral intensity, and behavioural intentions (see, e.g., Hays 2002). Compared to experiments, the subject samples are normally higher, which makes the results more generalisable. On the other hand, it is difficult to isolate the effects of a variable in the way experiments can do.

We are going to work with the *Taxpayer Opinion Survey*, collected in the United States in 1987 and providing a broad set of taxpayers’ opinions and evaluations of aspects as, the tax system, the Internal Revenue Service, tax evasion, cheating on taxes etc. The *TOS* offers the possibility to separately analyse two determinants of tax evasion, overstating of deduction or expenses and underreporting income, as dependent variable. From these considerations the following hypotheses can be derived:

Hypothesis 1: The lower tax morale, the more individuals overstate deductions or expenses.

Hypothesis 2: The lower tax morale, the more individuals under-report their income.

III. EMPIRICAL EVALUATION

1. Main Variables

The advantage of the *TOS* data set is that we find quite a few questions that allow to measure tax morale. We are going to use the answers to the following proposed actions (scale from 1 to 6, where 6 means not at all acceptable and 1 means perfectly acceptable):

1. Trading or exchanging goods or services with a friend or neighbor and not reporting it on your tax form (**TM 1**).
2. Reporting your main income fully, but not including some small outside income (**TM 2**).
3. Being paid in cash for a job and then not reporting it on your tax form (**TM 3**).
4. Not reporting some earnings from investments or interest that the government would not be able to find out about (**TM 4**).
5. Stretching medical deductions to include some expenses which are not really medical (**TM 5**).

Furthermore, the following statements had to be valued (6=strongly disagree, 1=strongly agree):

6. With what things cost these days, it's okay to cut a few corners on your tax form just to help make ends meet (**TM 6**).
7. It's not so wrong to hold back a little bit of taxes since the government spends too much anyway (**TM 7**).
8. The chances of getting caught are so low that it is worthwhile trying to cut corners a little on (**TM 8**).
9. When you're not really sure whether or not you deserve a tax deduction, it makes sense to take a chance and take the deduction anyway (**TM 9**).
10. It is not so wrong to underreport certain income since it does not really hurt anyone (**TM 10**).
11. There is nothing wrong with interpreting the ambiguous or grey areas of the tax law to your own advantage (**TM 11**).

The advantage of these statements compared to the question if tax evasion is justifiable is a stronger realism, as they are concrete examples, focusing on the income reporting process and the over-deduction possibilities.

Tax evasion is measured with the following two questions:

1. Within the past five years or so, do you think you might have overstated any deductions or expenses – like medical, charitable or business deductions, and so forth – even by just a small amount (**OVERDEDUC**)?
 1. Definitely have not
 2. Probably have not
 3. Probably have

4. Definitely have
2. Within the past five years or so, do you think you might have left some reportable income off your federal tax return – even, just a minor amount (**UNDERREP**)?
 1. Definitely have not
 2. Probably have not
 3. Probably have
 4. Definitely have

There are pros and cons on using such tax evasion measurements. Looking at the empirical data, the advantage is that we hardly find data that tries to measure the extent of tax evasion in a survey. So, little empirical evidence is available. Lewis (1982) points out:

“But why not just ask respondents whether they evade tax or not? If they admit it, ask them how much this amounts to and perhaps even why they do it? What could be simpler? ... Maybe it is worth a try. But some traditional wisdom (and a smattering of social psychology) recommends a tempering of enthusiasm” (p. 140).

On the other hand, Lewis (1982) is aware of problems with such a procedure. People might refuse to answer or to take part in such a survey or moderate their views to reduce the possibility that information are used non-confidentially as, for example, to prosecute evaders. As a consequence, such an approach would generate a tendency to overestimate tax compliance. Lempert (1992) criticises the scale used in the *TOS* to catch over-deduction and under-declarations. Using the terms “probability” and “minor amount” encourages individuals to state that tax evasion has been done. Finally, it is difficult to ask people about their behaviour of five years ago.

2. Estimation Results

1. Over-Deductions

First a basic model with mostly demographic variables is estimated. We are going to estimate 11 equations with different tax morale variables using ordered probit models. This helps

check the sensitivity of the relationship between tax evasion and tax morale. In a second step additional variables are integrated into the analysis. Only one additional variable has been added to control the problems of missing values, as we have decided not to replace missing values with a sequence of regression estimates or with mean values. We used the weighting variable provided by Harris and Associates to get a representative population size.

Table 1 presents the results using over-deduction as the dependent variable. All regressions estimation results are consistent with our hypothesis 1 that the lower tax morale, the more individuals overstate deductions or expenses. In all equations tax morale is significant at the 1 percent level with a negative sign. To represent the quantitative effects of the variables, *Table 2* indicates the marginal effect for the score 3 (probably overstated) and 4 (definitely overstated). As we can see, the marginal effect for score 3 is higher than for score 4. An increase in tax morale by one point reduces the share of persons indicating that they probably (definitely) have overstated deduction by around 2 (0.7) percentage points. Females report a lower rate of tax evasion than males. However, the coefficient is not significant and the marginal effects are very small. On the other hand, a higher education has a positive effect on tax evasion. An increase in the education by one unit increases the share of persons indicating that they probably (definitely) have overstated deductions by around 1.4 (0.5) percentage points. Better educated taxpayers are supposed to know more about tax law and the possibilities to overstate deductions or expenses. Elderly people evade taxes significantly less than younger individuals. One reason might be, e.g., that estate taxes are likely to have smaller tax compliance disincentive effects on older people than on younger, as the tax burden has partly to be paid by the heirs and that older people are often more strongly attached to the community, as they have lived there for a longer time (see Pommerehne and Weck-Hannemann 1996). There is no significant difference between races. Married people evade taxes significantly more often than singles. Being married rather than single increases the share of persons indicating that they probably (definitely) have overstated deductions by around 4 (1.6) percentage points. This result is in line with some studies in the United States which found that noncompliance is more common and of greater magnitude among married taxpayers (see Clotfelter 1983, Feinstein 1991). One reason could be that in the U.S., dual incomes are treated as one, being thus taxed in a higher bracket than two separate incomes (Hays 2000). Similarly, a higher income leads to significantly higher tax evasion. An increase of the income increases the share of persons indicating that they probably (definitely) have overstated deduction. However, the marginal effects are quite low. There is no significant difference between the employment types, but a marginal effect indicating a higher tax

evasion among part-time employees, unemployed and retired people compared to full-time employees.

Table 1
The Effect of Tax Morale on Tax Evasion (Over-deduction)

<i>Weighted Ordered Probit</i>																						
<i>Depend. V. : Tax Evasion</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>		<i>5</i>		<i>6</i>		<i>7</i>		<i>8</i>		<i>9</i>		<i>10</i>		<i>11</i>	
<i>Independent Variables</i>	<i>Coeff.</i>	<i>z-Stat.</i>																				
a) Demographic Factors																						
AGE	-0.012***	-3.479	-0.011***	-3.241	-0.010***	-2.911	-0.009***	-2.686	-0.011***	-3.304	-0.010***	-2.761	-0.009***	-2.693	-0.011***	-3.031	-0.010***	-2.945	-0.008**	-2.278	-0.008**	-2.222
FEMALE	-0.022	-0.249	-0.004	-0.041	0.004	0.044	0.001	0.006	0.006	0.063	0.003	0.031	0.024	0.279	0.018	0.205	-0.011	-0.121	0.045	0.509	0.092	1.003
EDUCATION	0.096***	4.669	0.093***	4.460	0.091***	4.407	0.102***	4.852	0.103***	4.930	0.103***	5.049	0.101***	5.035	0.089***	4.318	0.073***	3.523	0.099***	4.743	0.073***	3.362
BLACK	0.124	0.779	0.023	0.150	0.028	0.181	0.027	0.172	0.023	0.148	-0.014	-0.093	-0.003	-0.022	0.006	0.036	0.016	0.099	-0.012	-0.080	0.079	0.509
INDIAN, ALASKAN N.	-0.078	-0.153	-0.148	-0.309	-0.071	-0.136	-0.021	-0.039	-0.162	-0.300	-0.139	-0.270	-0.263	-0.515	-0.269	-0.580	-0.226	-0.415	-0.170	-0.341	-0.070	-0.137
ASIAN	0.388	0.526	0.507	0.875	0.342	0.473	0.331	0.501	0.209	0.260	0.264	0.290	0.248	0.315	0.489	0.917	0.717	1.350	0.582	1.069	0.555	0.635
b) Employment Status																						
PART TIME EMPLOYED	0.208	1.200	0.277	1.625	0.224	1.306	0.177	1.053	0.201	1.148	0.229	1.365	0.261	1.465	0.186	1.000	0.138	0.801	0.105	0.587	0.057	0.305
UNEMPLOYED	0.270	1.376	0.298	1.534	0.309	1.584	0.291	1.485	0.323*	1.674	0.256	1.293	0.339*	1.700	0.205	1.024	0.283	1.439	0.180	0.921	0.240	1.172
RETIRED	0.106	0.764	0.106	0.771	0.078	0.568	0.036	0.261	0.099	0.718	0.077	0.554	0.066	0.479	0.079	0.562	0.048	0.342	0.032	0.234	0.034	0.228
AT HOME	-0.268	-0.953	-0.223	-0.801	-0.135	-0.541	-0.030	-0.124	-0.034	-0.132	-0.109	-0.460	-0.056	-0.225	-0.065	-0.276	-0.113	-0.414	-0.051	-0.210	-0.149	-0.533
STUDENT	-0.161	-0.375	-0.123	-0.296	-0.180	-0.437	-0.134	-0.341	-0.119	-0.297	-0.213	-0.520	-0.217	-0.533	-0.144	-0.349	-0.213	-0.539	-0.187	-0.465	-0.228	-0.546
c) Marital Status																						
MARRIED	0.300**	2.549	0.329***	2.747	0.333***	2.803	0.362***	3.043	0.324***	2.764	0.294**	2.469	0.327***	2.614	0.285**	2.262	0.281**	2.421	0.291**	2.438	0.277**	2.269
SEPARATED	0.382*	1.724	0.444**	2.035	0.431	1.972	0.437**	2.058	0.399*	1.898	0.358	1.624	0.409*	1.865	0.399*	1.742	0.285	1.279	0.300	1.329	0.334	1.490
DIVORCED	0.247	1.546	0.257	1.628	0.213	1.351	0.255	1.594	0.307*	1.945	0.214	1.362	0.266	1.628	0.214	1.317	0.209	1.340	0.174	1.083	0.178	1.066
WIDOWED	0.267	1.391	0.223	1.149	0.261	1.292	0.274	1.357	0.237	1.086	0.283	1.435	0.267	1.244	0.172	0.837	0.290	1.466	0.210	1.055	0.184	0.904
d) Economic Variables																						
INCOME	0.059***	3.419	0.063***	3.667	0.064***	3.631	0.055***	3.180	0.056***	3.268	0.061***	3.564	0.062***	3.666	0.057***	3.250	0.060***	3.480	0.061***	3.513	0.057***	3.179
e) Tax Morale																						
TM 1	-0.068***	-3.326	-0.076***	-3.818																		
TM 2					-0.104***	-5.228																
TM 3							-0.141***	-6.677														
TM 4									-0.142***	-5.865												
TM 5											-0.142***	-5.830										
TM 6													-0.152***	-6.496								
TM 7															-0.140***	-5.280						
TM 8																	-0.157***	-6.694				
TM 9																						
TM10																				-0.158***	-5.801	
TM11																						-0.157*** -6.870
Observations	1182		1200		1197		1184		1190		1205		1205		1183		1176		1196		1142	
Prob(F-statistic)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax evasion on a four point scale. In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 2
Marginal Effects (Over-deduction)

<i>weighted ordered probit 1</i>	2		3		4		5		6		7		8		9		10		11				
<i>Independent Variable</i>	<i>Marg. 3</i>	<i>Marg. 4</i>																					
a) Demographic																							
AGE	-0.002	-0.001	-0.002	-0.001	-0.001	-0.001	-0.001	-0.005	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001	-0.001	0.000	-0.001	0.000	
FEMALE	-0.003	-0.001	-0.001	0.000	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.003	0.001	0.003	0.001	-0.002	-0.001	0.006	0.002	0.013	0.005	
EDUCATION	0.013	0.005	0.013	0.005	0.013	0.005	0.014	0.005	0.014	0.005	0.014	0.005	0.014	0.005	0.013	0.005	0.010	0.004	0.014	0.005	0.010	0.004	
BLACK	0.017	0.007	0.003	0.001	0.004	0.002	0.004	0.001	0.003	0.001	-0.002	-0.001	-0.001	0.000	0.001	0.000	0.002	0.001	-0.002	-0.001	0.011	0.004	
INDIAN, ALASKAN	-0.011	-0.044	-0.020	-0.008	-0.099	-0.004	-0.003	-0.001	-0.023	-0.008	-0.019	-0.007	-0.036	-0.014	-0.038	-0.015	-0.031	-0.012	-0.024	-0.009	-0.010	-0.004	
ASIAN	0.053	0.022	0.070	0.028	0.047	0.018	0.046	0.017	0.029	0.010	0.036	0.014	0.034	0.013	0.069	0.027	0.098	0.038	0.081	0.031	0.077	0.029	
b) Employment Status																							
PART TIME EMPL.	0.028	0.012	0.038	0.016	0.031	0.012	0.025	0.009	0.028	0.010	0.031	0.012	0.034	0.013	0.026	0.010	0.019	0.007	0.015	0.006	0.008	0.003	
UNEMPLOYED	0.037	0.015	0.041	0.017	0.043	0.016	0.040	0.015	0.045	0.016	0.035	0.014	0.036	0.014	0.029	0.011	0.039	0.015	0.025	0.010	0.033	0.013	
RETIRED	0.015	0.006	0.015	0.006	0.011	0.004	0.005	0.002	0.014	0.005	0.011	0.004	0.047	0.018	0.011	0.004	0.007	0.003	0.005	0.002	0.005	0.002	
AT HOME	-0.037	-0.015	-0.031	-0.013	-0.019	-0.007	-0.004	-0.002	-0.005	-0.002	-0.015	-0.006	-0.008	-0.003	-0.009	-0.004	-0.015	-0.006	-0.007	-0.003	-0.021	-0.008	
STUDENT	-0.022	-0.009	-0.017	-0.007	-0.025	-0.010	-0.019	-0.007	-0.017	-0.002	-0.029	-0.011	-0.030	-0.011	-0.020	-0.008	-0.029	-0.011	-0.026	-0.010	-0.032	-0.012	
c) Marital Status																							
MARRIED	0.041	0.017	0.045	0.018	0.046	0.018	0.050	0.019	0.045	0.016	0.040	0.016	0.045	0.017	0.040	0.016	0.038	0.015	0.040	0.016	0.038	0.015	
SEPARATED	0.052	0.022	0.061	0.025	0.060	0.023	0.061	0.023	0.056	0.020	0.049	0.019	0.056	0.022	0.056	0.022	0.039	0.015	0.042	0.016	0.046	0.018	
DIVORCED	0.034	0.014	0.035	0.014	0.030	0.011	0.035	0.013	0.043	0.015	0.029	0.011	0.037	0.014	0.030	0.012	0.029	0.011	0.024	0.009	0.025	0.009	
WIDOWED	0.037	0.015	0.031	0.013	0.036	0.014	0.038	0.014	0.033	0.012	0.038	0.015	0.037	0.014	0.024	0.010	0.040	0.015	0.029	0.011	0.026	0.010	
d) Economic Variables																							
INCOME	0.008	0.003	0.009	0.004	0.088	0.003	0.008	0.003	0.008	0.003	0.008	0.003	0.009	0.003	0.008	0.003	0.008	0.003	0.009	0.003	0.008	0.003	
e) Tax Morale																							
TM 1	-0.009	-0.004																					
TM 2			-0.010	-0.004																			
TM 3					-0.014	-0.006																	
TM 4							-0.020	-0.007															
TM 5									-0.020	-0.007													
TM 6											-0.019	-0.008											
TM 7													-0.021	-0.008									
TM 8															-0.020	-0.008							
TM 9																	-0.021	-0.008					
TM10																				-0.022	-0.009		
TM11																						-0.022	-0.008

2. Under-Declaration

In the next step we are going to analyse under-reporting as dependent variable, using the same control variables. *Table 3* presents the findings. Similar to *Table 1*, all regression estimation results are consistent with hypothesis 2 that the lower tax morale, the more individuals under-report their income. In all equations tax morale is highly significant. Contrary to *Table 2*, in *Table 4* we are going to present the marginal effects of the robust significant coefficients only. We can see that the tax morale marginal effects are greater compared to the equations using over-deduction as dependent variable, especially for the extreme value “definitely done under-declaration”.

An increase in tax morale by one point reduces the share of persons indicating that they probably (definitely) have under-declared their income between 1.2 and 2.6 (0.8 and 1.6) percentage points. Again females report a lower tax evasion than males, but this time at a significant level. Being female rather than male reduces the probability of a person stating that under-declaration has probably (definitely) been done by more than 4 (2.4) percentage points. On the other hand, a higher education has again a positive effect on tax evasion. An increase in the education by one unit increases the share of persons indicating that they probably (definitely) have under-reported income by around 1.0 (0.6) percentage points. The coefficient of the variable married has lost its significance. Other variables are in line with *Table 1* and have no significant impact on tax evasion.

In general the results indicate that there is a significant correlation between tax morale and tax evasion, identifying 11 proxies of tax morale and distinguishing between over-deductions and under-declaration. In all 22 equations the coefficients are highly significant. Thus, tax morale seems to be a key determinant to understand tax compliance.

Table 3

The Effect of Tax Morale on Tax Evasion (Under-declaration)

<i>weighted ordered probit</i>																						
<i>Dependent V. : Tax Evasion</i>																						
<i>Independent Variables</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>		<i>5</i>		<i>6</i>		<i>7</i>		<i>8</i>		<i>9</i>		<i>10</i>		<i>11</i>	
	<i>Coeff.</i>	<i>z-Stat.</i>																				
a) Demographic Factors																						
AGE	-0.014***	-4.093	-0.013***	-3.894	-0.011***	-3.421	-0.012***	-3.553	-0.014***	-4.273	-0.013***	-3.810	-0.012***	-3.737	-0.013***	-3.913	-0.015***	-4.004	-0.010***	-2.898	-0.012***	-3.570
FEMALE	-0.320***	-4.034	-0.276***	-3.513	-0.298***	-3.728	-0.307***	-3.902	-0.308***	-3.906	-0.300***	-3.786	-0.273***	-3.442	-0.282***	-3.543	-0.330***	-4.065	-0.263***	-3.306	-0.267***	-3.211
EDUCATION	0.068***	3.111	0.067***	3.087	0.073***	3.353	0.077***	3.556	0.071***	3.246	0.077***	3.602	0.078***	3.622	0.064***	3.025	0.064***	2.880	0.074***	3.428	0.043*	1.897
BLACK	0.001	0.008	-0.075	-0.542	-0.070	-0.502	-0.084	-0.614	-0.047	-0.333	-0.108	-0.757	-0.077	-0.546	-0.091	-0.655	-0.037	-0.263	-0.088	-0.662	-0.088	-0.619
INDIAN, ALASKAN N.	-0.633	-1.009	-0.790	-1.326	-0.647	-0.978	-0.621	-0.987	-0.767	-1.179	-0.707	-1.226	-0.792	-1.466	-0.756	-1.500	-0.712	-1.230	-0.792	-1.269	-0.765	-1.209
ASIAN	-0.096	-0.149	0.364	1.223	-0.163	-0.243	-0.106	-0.174	-0.253	-0.367	-0.230	-0.312	-0.254	-0.364	0.302	0.983	0.502	1.639	0.350	1.193	-0.084	-0.109
b) Employment Status																						
PART TIME EMPLOYED	0.300*	1.874	0.281*	1.728	0.243	1.394	0.183	1.061	0.236	1.435	0.213	1.274	0.171	1.035	0.204	1.241	0.130	0.754	0.007	0.041	0.147	0.861
UNEMPLOYED	-0.015	-0.073	0.062	0.306	0.144	0.708	0.109	0.523	0.128	0.602	0.047	0.233	0.138	0.656	0.078	0.367	0.139	0.670	0.022	0.099	0.075	0.352
RETIRED	0.025	0.206	0.082	0.699	0.053	0.440	0.013	0.108	0.040	0.338	0.025	0.210	0.062	0.517	0.043	0.357	0.079	0.603	-0.008	-0.065	-0.018	-0.141
AT HOME	-0.213	-0.856	-0.131	-0.536	-0.016	-0.082	0.009	0.043	-0.044	-0.204	-0.071	-0.337	0.000	0.000	-0.074	-0.343	0.026	0.115	-0.001	-0.007	-0.163	-0.641
STUDENT	0.293	0.894	0.369	1.171	0.313	0.992	0.345	1.069	0.342	1.045	0.257	0.750	0.266	0.762	0.314	0.923	0.290	0.919	0.272	0.778	0.241	0.735
c) Marital Status																						
MARRIED	0.092	0.785	0.110	0.921	0.129	1.088	0.129	1.081	0.128	1.100	0.086	0.736	0.112	0.958	0.072	0.623	0.104	0.895	0.092	0.786	0.082	0.695
SEPARATED	-0.082	-0.340	-0.057	-0.250	-0.057	-0.257	-0.077	-0.327	-0.035	-0.152	-0.076	-0.330	-0.040	-0.167	-0.085	-0.341	-0.093	-0.382	-0.163	-0.694	-0.206	-0.817
DIVORCED	0.179	1.170	0.161	1.058	0.173	1.129	0.174	1.135	0.235	1.555	0.158	1.042	0.212	1.396	0.147	0.983	0.167	1.087	0.139	0.932	0.142	0.912
WIDOWED	-0.156	-0.688	-0.167	-0.729	-0.081	-0.364	-0.104	-0.470	-0.053	-0.237	-0.093	-0.415	-0.154	-0.665	-0.158	-0.707	-0.143	-0.584	-0.237	-1.023	-0.165	-0.720
d) Economic Variables																						
INCOME	-0.024	-1.353	-0.016	-0.922	-0.020	-1.079	-0.027	-1.516	-0.023	-1.267	-0.022	-1.240	-0.023	-1.271	-0.025	-1.368	-0.025	-1.313	-0.025	-1.378	-0.036*	-1.942
e) Tax Morale																						
TM 1	-0.101***	-5.149																				
TM 2			-0.122***	-6.530																		
TM 3					-0.146***	-7.636																
TM 4							-0.125***	-5.917														
TM 5									-0.100***	-4.310												
TM 6											-0.127***	-5.481										
TM 7													-0.143***	-6.159								
TM 8															-0.103***	-3.889						
TM 9																	-0.085***	-3.801				
TM 10																			-0.174***	-7.103		
TM 11																					-0.140***	-6.491
Observations	1235		1254		1254		1238		1245		1262		1263		1237		1226		1250		1200	
Prob(F-statistic)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax evasion on a four point scale. In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 4
Marginal Effects (Under-declaration)

<i>weighted ordered probit</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>		<i>5</i>		<i>6</i>		<i>7</i>		<i>8</i>		<i>9</i>		<i>10</i>		<i>11</i>	
<i>Variable</i>	<i>Marg. 3</i>	<i>Marg. 4</i>																				
<i>a) Demographic Factors</i>																						
AGE	-0.002	-0.001	-0.002	-0.026	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001
FEMALE	-0.047	-0.031	-0.040	-0.026	-0.044	-0.027	-0.046	-0.029	-0.046	-0.030	-0.044	-0.028	-0.040	-0.026	-0.042	-0.028	-0.048	-0.032	-0.039	-0.024	-0.040	-0.025
EDUCATION	0.010	0.007	0.010	0.006	0.011	0.007	0.012	0.007	0.010	0.007	0.011	0.007	0.011	0.007	0.010	0.006	0.009	0.006	0.011	0.007	0.006	0.004
RACE (included)																						
<i>b) Employment Status</i>																						
(included)																						
<i>c) Marital Status</i>																						
(included)																						
<i>d) Economic Variables</i>																						
(included)																						
<i>e) Tax Morale</i>																						
TM 1	-0.015	-0.010																				
TM 2			-0.018	-0.012																		
TM 3					-0.022	-0.013																
TM 4							-0.019	-0.012														
TM 5									-0.015	-0.010												
TM 6											-0.019	-0.012										
TM 7													-0.021	-0.013								
TM 8															-0.015	-0.010						
TM 9																	-0.012	-0.008				
TM10																			-0.026	-0.016		
TM11																					-0.0209	-0.013

3. Tax Morale

Having found a significant correlation between tax morale and tax evasion we are going to analyse tax morale as dependent variable, thus analysing the factors that shape tax morale. To use weighted ordered probit models and for simplicity we are going to specify tax morale as dependent variable with the following statement: *Trading or exchanging goods or services with a friend or neighbour and not reporting it on your tax form* (scale 1 to 6, where 6 means not at all acceptable and 1 means perfectly acceptable). We believe that this question catches tax morale pretty well as it integrates friends' and neighbours' services which are almost impossible for a tax administration to control¹. As we have some missing values for each factor, we decided to analyse each determinant separately, based on the main variables used in *Table 1 and 3*. The following factors are analysed:

- Tax authority
- Tax system (fairness, direct democracy, complexity, tax-filing experiences)
- Perception and experiences with deterrence factors and tax evasion
- Awareness of tax issues
- Trust in government, social capital and obedience

1. Tax Authority

Taxpayers' estimation of the tax authority might have an effect on tax morale (for a survey see Torgler 2001b). With the same data used by Smith (1992) we expand the analysis, focusing on tax morale and using more variables to catch attitudes towards the tax administration:

1. **JOB OF THE IRS** (*Internal Revenue Service*). The respondents were asked to rate the job IRS does (excellent=4, pretty good=3, only fair=2, poor=1) regarding:
 - processing returns
 - issuing refunds
 - answering questions
 - auditing returns

¹ However, it should be noticed that in many countries this exchange is the grey zone and often not taxed.

- collecting taxes due

Cronbach's α for the items is 0.74, giving the possibility to take them as one index (average of the items).

2. HONESTY AND FAIRNESS. The respondents were asked to agree or disagree with eight statements about the IRS (Cronbach's $\alpha = 0.83$).

- The IRS employees are honest – you could never bribe them (6=strongly agree, 1=strongly disagree).
- IRS employees are just as knowledgeable as any private tax expert.
- I am confident that the IRS would never try to take more money from me than they should.
- You can depend on the IRS to keep accurate tax records.
- That the IRS automatically withholds some of my income and even get copies of my W-2 forms and interest statements sometimes makes me feel they are always nearby and watching.
- When it comes to investigating their own people, the IRS is as thorough as they are with everyone else.
- IRS employees have an unusual amount of honesty and integrity.
- IRS procedures and practices are fair and reasonable ones that respect the rights of taxpayers.

3. HELP AND INFORMATION. The respondents were asked to place the IRS on a scale from 1 to 6 regarding the following subjects:

- Information easy to understand (value 6), information difficult to understand (value 1).
- IRS employees extremely knowledgeable (6), not at all knowledgeable (1).
- Very easy to find right person to talk to (6), impossible to find right person to talk to (1).
- Consistent from one IRS employee to another (6), different IRS employees give you different answers (1).
- Got the information (6), took forever to get the information from the IRS (1).
- Employees very willing to help (6), employees not at all willing to help (1).
- Employees willing to act in taxpayer's best interest (6), employees always act in government's best interest (1).
- Overall, employees highly professional (6), overall, employees very unprofessional (1).

Cronbach's α for the addition of the eight items is 0.91, indicating a high correlation between the items and thus offering the possibility to take them as one index.

Table 5 presents the results.

Table 5
Tax Administration

<i>weighted ordered probit</i>	(1)			(2)			(3)		
<i>Dependent variable: tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Demographic Factors									
AGE	0.007***	2.729	0.002	0.006**	2.473	0.002	0.007***	2.747	0.002
FEMALE	-0.001	-0.016	0.000	-0.002	-0.030	-0.001	-0.008	-0.122	-0.002
EDUCATION	-0.056***	-3.604	-0.014	-0.053***	-3.421	-0.013	-0.056***	-3.555	-0.014
BLACK	0.084	0.781	0.021	0.098	0.913	0.025	0.081	0.762	0.021
INDIAN, ALASKAN NATIVE	0.632**	2.201	0.159	0.613**	2.086	0.155	0.602**	1.985	0.152
ASIAN	0.424	0.956	0.107	0.448	1.025	0.113	0.455	1.062	0.115
b) Employment Status									
PART TIME EMPLOYED	0.033	0.226	0.008	0.037	0.254	0.009	0.046	0.313	0.012
UNEMPLOYED	-0.424**	-2.065	-0.107	-0.406**	-1.986	-0.103	-0.422**	-2.052	-0.106
RETIRED	-0.040	-0.442	-0.010	-0.041	-0.451	-0.010	-0.041	-0.450	-0.010
AT HOME	-0.150	-0.882	-0.038	-0.168	-0.958	-0.042	-0.162	-0.920	-0.041
STUDENT	-0.213	-0.584	-0.054	-0.170	-0.492	-0.043	-0.184	-0.509	-0.047
c) Marital Status									
MARRIED	-0.104	-1.094	-0.026	-0.098	-1.027	-0.025	-0.103	-1.088	-0.026
SEPARATED	-0.252	-1.252	-0.063	-0.265	-1.295	-0.067	-0.255	-1.251	-0.064
DIVORCED	-0.187	-1.630	-0.047	-0.189*	-1.646	-0.048	-0.188	-1.635	-0.047
WIDOWED	-0.111	-0.781	-0.028	-0.096	-0.669	-0.024	-0.120	-0.851	-0.030
d) Economic Variables									
INCOME	-0.014	-0.924	-0.004	-0.010	-0.684	-0.003	-0.009	-0.608	-0.002
e) Tax Administration									
JOB OF THE IRS	0.078***	3.850	0.020						
HONESTY AND FAIRNESS				0.055**	2.545	0.014			
HELP AND INFORMATION							0.055***	2.920	0.014
Observations	1304			1304			1304		
Prob(F-statistic)	0.000			0.000			0.000		

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

In general, all three variables have a highly significant positive effect on tax morale. An increase in the index of how good the IRS works by one point raises the share of persons

indicating the highest tax morale by 2 percentage points; for the honesty and fairness of the IRS and the provision of help and information, the proportion of persons indicating the highest tax morale increases by 1.4 percentage points.

Looking at the control variables, age has a positive and education a negative effect on tax morale. An increase in the education level by one unit reduces the share of individuals indicating the highest tax morale by around 1.4 percentage points. Contrary to the findings regarding tax evasion, we find that American Indians and Alaskan natives have a significantly higher tax morale than white inhabitants. Being Indian and Alaskan native rather than white increases the probability of a person stating the highest tax morale by around 15 percentage points. Marital status has no significant effect on tax morale. Being unemployed rather than full-time employed reduces tax morale by around 10 percentage points.

2. Tax System

2.1 Fairness of the Tax System and Direct Democracy

A tax system must be fair in the view of the taxpayers. If a taxpayer feels that she/he is in a sort of unfair contract she/he will probably be less likely to comply. Taxpayers are more inclined to comply to the law if the exchange between the paid tax and the performed government services are found to be equitable (for a survey see Torgler 2001b). We are going to use the following variables to consider the perceived fairness of the tax system:

1. How do you feel about the federal income tax system as it applies to the 1986 tax return – do you feel it is quite fair to most people (4), or reasonably fair (3), or somewhat unfair (2), or quite unfair to most people? (1) (**tax fairness 1**).
2. The present tax system benefits the rich and is unfair to the ordinary working man or woman (1= strongly agree, 6= strongly disagree) (**tax fairness 2**).

With data from the World Values Survey and the ISSP Torgler (2002a) found that people who in Switzerland lived in cantons with more direct democratic participation had a significantly higher tax morale. Similarly, there is also a significant correlation between tax morale and direct democracy in the United States at the regional level (see Torgler 2003).

We are going to analyse the effect of direct democracy on tax morale with data from the *TOS*. To capture the possibility of direct democratic participation, a variable *SIGNATURE REQUIREMENT* has been developed. Signature requirement is an indicator of the costs of using initiatives. Direct democracy requires that petitioners gather sufficient signatures from voters to meet a signature threshold. Such a signature requirement ranges from about 2% to 15% (see *Table A1*). The variable is defined as the inverse coefficient of the average signature threshold value presented in *Table A1*. Thus, the higher the value, the lower the restrictions to use the instrument. Contrary to the *World Values Survey* data, the *TOS* gives the information which state each person comes from. Thus, there is no basic problem regarding the degrees of freedom in the estimates

Table 6 presents the results of the estimations. We find that tax fairness has a significant positive effect on tax morale. An increase in the perception scale of tax fairness by one unit raises the share of persons indicating the highest tax morale by 3 for tax fairness 1 and 2.4 percentage points for tax fairness 2. Direct democracy has thus a significant positive effect on tax morale with a high marginal effect.

Table 6
Tax Fairness and Direct Democratic Participation

<i>weighted ordered probit</i>	(1)			(2)			(3)		
<i>Dependent variable: tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Demographic Factors									
AGE	0.007***	2.844	0.002	0.007***	2.615	0.005	0.007***	2.651	0.002
FEMALE	0.027	0.409	0.007	-0.025	-0.372	-0.006	-0.006	-0.086	-0.001
EDUCATION	-0.059***	-3.693	-0.015	-0.058***	-3.654	-0.014	-0.055***	-3.484	-0.014
BLACK	0.101	0.918	0.025	0.086	0.773	0.021	0.116	1.078	0.029
INDIAN, ALASKAN NATIVE	0.616**	2.118	0.153	0.797**	2.339	0.193	0.625**	2.143	0.158
ASIAN	0.464	1.144	0.115	0.444	1.109	0.108	0.440	1.012	0.111
b) Employment Status									
PART TIME EMPLOYED	0.069	0.485	0.017	0.004	0.024	0.001	0.058	0.403	0.015
UNEMPLOYED	-0.355*	-1.752	-0.088	-0.440**	-1.975	-0.107	-0.422**	-2.072	-0.106
RETIRED	-0.087	-0.866	-0.022	-0.033	-0.348	-0.008	-0.048	-0.525	-0.012
AT HOME	-0.153	-0.836	-0.038	-0.202	-1.112	-0.049	-0.165	-0.929	-0.042
STUDENT	-0.155	-0.406	-0.039	-0.213	-0.551	-0.052	-0.167	-0.471	-0.042
c) Marital Status									
MARRIED	-0.115	-1.199	-0.029	-0.089	-0.942	-0.022	-0.087	-0.911	-0.022
SEPARATED	-0.225	-1.054	-0.056	-0.244	-1.176	-0.059	-0.234	-1.168	-0.059
DIVORCED	-0.165	-1.425	-0.041	-0.182	-1.561	-0.044	-0.183	-1.587	-0.046
WIDOWED	-0.073	-0.505	-0.018	-0.127	-0.854	-0.031	-0.117	-0.821	-0.029
d) Economic Variables									
INCOME	-0.015	-0.975	-0.004	-0.020	-1.301	-0.005	-0.012	-0.771	-0.003
e) Tax Fairness									
TAX FAIRNESS 1	0.120***	3.725	0.030						
TAX FAIRNESS 2				0.099***	5.365	0.024			
f) Direct Democracy									
SIGNATURE REQUIREMENT							0.589*	1.865	0.149
Observations	1216			1254			1304		
Prob(F-statistic)	0.000			0.000			0.000		

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

2.2 Tax Complexity and Tax Filling Experience

Complexity may affect taxpayers' perceptions of the equity of the tax system and thus tax morale (see Torgler 2002b). Smith (1992) found that complexity significantly reduces the perceived IRS procedural fairness. On the other hand, Forest and Sheffrin (2002) did not find any systematic link between perception of complexity and perception of unfairness, using data from the 1990 *TOS* found with similar questions. Contrary to Smith (1992) we only took one item to measure the complexity of the tax system:

Thinking about how easy or difficult it is to fill out your tax form, how complicated do you think our federal income tax laws and rules are for your particular income situation (1= not at all complicated/very easy to understand, 6 = extremely complicated/very difficult to understand).

As a further variable we integrate taxpayers' experience with the tax law. It could be argued that people with own experiences better understand the opportunities to avoid and evade taxes. The opportunity costs of being honest increase. On the other hand, people who pay tax practitioners to devise strategies for exploiting legal ambiguities have a lower tax morale than other taxpayers. Thus, it is difficult to give a clear prediction. Subjects were asked the following question:

During the past few years, how often have you completed your tax forms yourself, instead of getting help from someone else? Would you say you always (4), usually, sometimes, or never do them yourself (1)?

Table 7 presents the results. We can see that complexity and tax form filling experiences have the tendency to reduce tax morale. However, the marginal effects are small and the coefficients are not significant.

Table 7
Tax Complexity and Tax Filing Experiences

<i>weighted ordered probit</i>	<i>(1)</i>			<i>(2)</i>		
<i>Dependent variable: tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>						
AGE	0.006**	2.523	0.002	0.006**	2.405	0.002
FEMALE	-0.017	-0.263	-0.004	-0.013	-0.208	-0.002
EDUCATION	-0.051***	-3.259	-0.013	-0.049***	-3.008	-0.012
BLACK	0.081	0.752	0.020	0.080	0.749	0.020
INDIAN, ALASKAN NATIVE	0.618**	2.087	0.154	0.640**	2.193	0.161
ASIAN	0.477	1.108	0.119	0.446	1.004	0.112
<i>b) Employment Status</i>						
PART TIME EMPLOYED	0.068	0.472	0.017	0.049	0.343	0.012
UNEMPLOYED	-0.389*	-1.856	-0.097	-0.417**	-2.039	-0.105
RETIRED	-0.056	-0.597	-0.014	-0.037	-0.399	-0.009
AT HOME	-0.107	-0.601	-0.027	-0.126	-0.702	-0.032
STUDENT	-0.344	-0.794	-0.086	-0.172	-0.476	-0.043
<i>c) Marital Status</i>						
MARRIED	-0.057	-0.591	-0.014	-0.104	-1.104	-0.026
SEPARATED	-0.219	-1.075	-0.055	-0.253	-1.249	-0.064
DIVORCED	-0.132	-1.145	-0.033	-0.189	-1.641	-0.047
WIDOWED	-0.064	-0.447	-0.016	-0.110	-0.775	-0.028
<i>d) Economic Variables</i>						
INCOME	-0.014	-0.934	-0.004	-0.010	-0.661	-0.003
<i>e) Tax System</i>						
COMPLEXITY	-0.026	-1.344	-0.007			
TAX FORM EXPERIENCE				-0.034	-1.411	-0.009
Observations	1268			1299		
Prob(F-statistic)	0.000			0.000		

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

3. Perception and Experiences with Deterrence Factors and Tax Evasion

3.1 Auditing

The *TOS* has asked the following question (AUDIT=dummy variable):

Have you ever been called in by the IRS for an audit of your federal income tax return?

Such a question can be used as a behavioural variable close to tax evasion. Thus, one would predict that people who have been called in by the IRS for an audit have a lower tax morale than other taxpayers.

A second question about the chances of being audited is asked (PROBABILITY OF AUDIT):

What are the chances that your 1986 tax return (the one you filed this past Spring) will be audited by the IRS? Is there a very strong chance, a good chance, is it not very likely, or highly unlikely to be audited or checked over?

Someone who believes or knows that his/her tax form is not correctly filled out (intentionally or not) might have a higher expectation that his/her tax form is going to be audited. Furthermore, a policy with a high degree of auditing corresponds to the belief that people are knaves which should be controlled to reduce their self-interested goal and thus tax evasion. An expected higher probability of audit therefore reduces tax morale.

The results have the predicted signs. Having been audited reduces the share of persons indicating the highest tax morale by 6.2 percentage points. The higher the perceived audit probability, the lower tax morale.

3.2 Perception Regarding Tax Evasion

The intensity of moral constraints might depend on how widespread evasion behaviour is in a group. The social constraint might be very small if individuals are aware that they are part of a minority who pays taxes. People who used to pay taxes might get angry, which reduces the moral costs of evasion and increases the incentive to engage in tax evasion. Individuals could react emotionally and very strongly to such perceived attitudes. If a taxpayer believes that tax evasion is common and notices that many individuals evade taxes, this could crowd out intrinsic motivation to comply with taxes. We would hypothesise that the higher the percentage of taxpayers someone perceives to be cheating on taxes, the lower his/her tax morale will be. In the TOS the respondents were asked the following question:

As you may know, an audit is when you have to go to an IRS office or they come to your house or business or they may correspond with you, and you are asked to prove your deductions or answer questions about your tax return. The question I have is: out of every 100 taxpayers at your income level, how many or what percent do you think were audited last year?

Table 8
Deterrence Factors and Tax Evasion

<i>weighted ordered probit</i>	(1)			(2)			(3)			(4)		
<i>Dependent variable:</i> <i>tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>									
a) Demographic Factors												
AGE	0.008***	3.083	0.002	0.006*	1.833	0.001	0.007***	2.633	0.002	0.008***	2.946	0.002
FEMALE	0.003	0.039	0.001	0.042	0.529	0.010	-0.009	-0.134	-0.022	-0.021	-0.316	-0.005
EDUCATION	-0.054***	-3.424	-0.014	-0.015	-0.768	-0.004	-0.051***	-3.241	-0.013	-0.046***	-2.885	-0.012
BLACK	0.091	0.853	0.023	0.064	0.514	0.015	0.088	0.835	0.022	0.059	0.543	0.015
INDIAN, ALASKAN NATIVE	0.592**	2.039	0.149	0.846***	2.803	0.196	0.624**	2.082	0.157	0.607**	2.051	0.152
ASIAN	0.427	0.988	0.107	0.269	0.435	0.062	0.444	1.022	0.112	0.471	1.074	0.118
b) Employment Status												
PART TIME EMPLOYED	0.048	0.334	0.012	0.116	0.740	0.027	0.048	0.337	0.012	0.044	0.301	0.011
UNEMPLOYED	-0.422**	-2.059	-0.106	-0.228**	-0.966	-0.053	-0.414**	-2.039	-0.104	-0.427**	-2.053	-0.107
RETIRED	-0.070	-0.755	-0.018	-0.010	-0.082	-0.002	-0.053	-0.582	-0.013	-0.058	-0.624	-0.015
AT HOME	-0.183	-1.032	-0.046	0.257	1.147	0.060	-0.181	-1.024	-0.046	-0.184	-1.033	-0.046
STUDENT	-0.163	-0.452	-0.041	-0.096	-0.278	-0.022	-0.204	-0.550	-0.051	-0.161	-0.442	-0.040
c) Marital Status												
MARRIED	-0.093	-0.980	-0.023	-0.067	-0.632	-0.016	-0.092	-0.968	-0.023	-0.093	-0.962	-0.023
SEPARATED	-0.239	-1.205	-0.060	0.013	0.055	0.003	-0.248	-1.245	-0.063	-0.194	-0.938	-0.049
DIVORCED	-0.176	-1.527	-0.044	-0.155	-1.119	-0.036	-0.182	-1.588	-0.046	-0.180	-1.542	-0.045
WIDOWED	-0.121	-0.850	-0.031	-0.273	-1.552	-0.063	-0.108	-0.760	-0.027	-0.136	-0.941	-0.034
d) Economic Variables												
INCOME	-0.006	-0.413	-0.002	-0.013	-0.674	-0.003	-0.011	-0.741	-0.003	-0.012	-0.777	-0.003
e) Deterrence												
AUDITED	-0.248***	-3.047	-0.062									
PERCEPTION CHEATING PROBABILITY OF AUDIT				-0.006***	-4.093	-0.001						
							-0.090**	-2.580	-0.023			
FEAR OF GETTING CAUGHT										0.113***	3.705	0.028
Observations	1304			953			1302			1273		
Prob(F-statistic)	0.000			0.000			0.000			0.000		

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE, NOT AUDITED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

Table 8 indicates that this hypothesis can not be rejected. The findings indicated that there might be a crowding out effect of tax morale.

3.3 Fear of Getting Caught

If caught, a taxpayer might fear the internal sanctions (e.g., guilt), which is a restriction to behaving dishonestly (for a broader analysis see Torgler 2001b). The question was:

Most people are honest chiefly through fear of getting caught (strongly agree, mildly agree, mildly disagree, strongly disagree).

Looking at *Table 8* we can find that respondents who argued that most people are honest chiefly out of fear of getting caught have a higher tax morale than other individuals.

4. Awareness of Tax Issues

It might be interesting to analyse to which extent the awareness of tax issues has an impact on tax morale. Information acquirement and discussion depend on individuals' incentives. Gaining information and discussing this topic with other people imposes time costs on taxpayers. In a discussion people have the opportunity to exchange arguments which raises the level of information of the participants. It also enhances the incentive to participate and to incur additional information costs. People interact in a face-to-face situation and are able to identify the others' preferences. It could be argued that dissatisfaction with the government or a generally negative attitude towards the tax system might increase the incentives to talk to individuals to get a better idea about the opportunities to evade and the probability of getting caught.

A low awareness is linked with a higher uncertainty regarding the IRS process. We have used the following questions to catch the awareness of the IRS:

Do you ever talk about IRS and its activities with your family? (TALK WITH FAMILY)

Do you ever talk about IRS and its activities with your friends and co-workers? (TALK WITH FRIENDS)

How much attention did you pay to discussions on the radio about IRS and its activities (a lot, quite a bit, some, very little, or no attention)? (RADIO INFORMATION)

Table 9
Awareness

<i>weighted ordered probit</i>	<i>(1)</i>			<i>(2)</i>			<i>(3)</i>		
<i>Dependent variable: tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
a) Demographic Factors									
AGE	0.006**	2.457	0.002	0.006**	2.312	0.002	0.006**	2.299	0.002
FEMALE	-0.004	-0.058	-0.001	-0.012	-0.180	-0.003	-0.005	-0.079	-0.001
EDUCATION	-0.046***	-2.889	-0.012	-0.044***	-2.793	-0.011	-0.051***	-3.238	-0.013
BLACK	0.096	0.904	0.024	0.105	0.989	0.026	0.091	0.862	0.023
INDIAN, ALASKAN NAT.	0.589**	2.034	0.149	0.638**	2.124	0.159	0.607**	2.097	0.153
ASIAN	0.409	0.972	0.104	0.316	0.755	0.079	0.456	1.049	0.115
b) Employment Status									
PART TIME EMPLOYED	0.052	0.363	0.013	0.018	0.130	0.005	0.053	0.367	0.013
UNEMPLOYED	-0.431**	-2.112	-0.109	-0.513**	-2.482	-0.128	-0.429**	-2.099	-0.108
RETIRED	-0.039	-0.421	-0.010	-0.063	-0.669	-0.016	-0.039	-0.427	-0.010
AT HOME	-0.166	-0.960	-0.042	-0.177	-0.973	-0.044	-0.172	-0.975	-0.044
STUDENT	-0.319	-0.746	-0.081	-0.160	-0.435	-0.040	-0.198	-0.540	-0.050
c) Marital Status									
MARRIED	-0.062	-0.644	-0.016	-0.077	-0.813	-0.019	-0.108	-1.131	-0.027
SEPARATED	-0.235	-1.173	-0.060	-0.260	-1.309	-0.065	-0.260	-1.301	-0.066
DIVORCED	-0.150	-1.294	-0.038	-0.149	-1.311	-0.037	-0.190	-1.648	-0.048
WIDOWED	-0.074	-0.519	-0.019	-0.091	-0.641	-0.023	-0.094	-0.659	-0.024
d) Economic Variables									
INCOME	-0.011	-0.729	-0.003	0.000	-0.002	0.000	-0.010	-0.653	-0.003
e) Awareness									
TALK WITH FAMILY	-0.116*	-1.913	-0.029						
TALK WITH FRIENDS				-0.307***	-4.909	-0.077			
RADIO INFORMATION							-0.015	-1.551	-0.004
Observations	1294			1295			1302		
Prob(F-statistic)	0.000			0.000			0.000		

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

Table 9 presents the results. People with a higher awareness of IRS issues tendentially have a lower tax morale. Talking with friends rather than with the family has a stronger negative effect on tax morale. One reason might be that talking inside a family about all different

kinds of topics and thus also IRS issues is common practice, but it is not at all common to discuss such a sensitive topic with friends. Thus, someone who discusses IRS issues with friends does so with specific intentions. The coefficient for the effects of RADIO INFORMATION is not significant. A radio is a medium that in general informs about different topics, and there is a low probability that it informs regularly about the IRS. Sensitive and specific topics are rather treated in a discussion among people than on the radio. We have also estimated equations looking at other media like TV and newspaper. The results are in line, not showing a significant effect on tax morale.

5. Trust and Obedience

5.1 Trust in Public Officials

In the last equations the relevance of trust and obedience to tax morale are analysed. If taxpayers trust the public officials, they are more willing to be honest.

The variable has been developed from the following question:

Public officials can usually be trusted to do what's right (strongly agree=4, mildly agree=3, mildly disagree=2, strongly disagree=1).

The results are in line with our hypothesis that there is a significantly positive correlation between trust in officials and tax morale. An increase in the trust scale by one unit increases the share of subjects indicating the highest tax morale by 3.5 percentage points.

5.2 Trust in other People

The *TOS* measures trust in a general way, asking respondents if they trust other people. Paldam and Svendsen (2000) point out that this might be the best available measure of social capital. Slemrod (1998) stresses that

“in high-trust societies, individuals need to spend less to protect themselves from being exploited in economic transactions” (p. 29).

People who trust each other are in a closer interaction, which might produce a positive attitude towards contributing to the public good and paying the taxes (see Torgler 2002, 2003b). The results in *Table 10* indicate that higher social capital leads to a significantly higher tax morale. An increase in the scale of trust by one unit increases the share of subjects indicating the highest tax morale by 2 percentage points.

5.3 Obedience

Rule obedience can be defined as the disposition of the members of a society to follow certain rules. Obligation can be seen as a sort of internal institution. People have learnt the rules by education and experience to a degree where they have developed an obligation to fulfill. The rules are obeyed spontaneously without resourceful reflections. Taxpayers have turned the rules into personal preferences and apply them consistently (for an analysis of internal rules see Kasper and Streit 1999). Lindenberg (2001) explains obligation-based behaviour from a framing point of view as the goal to act appropriately, which is acquired through socialisation.

Rules are like restrictions that reduce the individuals' possibility set. When people pay taxes, they obey the laws with respect to rules. Thus, one would predict that people with a higher rule obedience have a higher tax morale. Respondents in the *TOS* were confronted with the following question:

The most important thing a child should learn is obedience and respect for authority (strongly agree =4, mildly agree=3, mildly disagree=2, strongly disagree=1).

Table 10 shows that a higher obedience and respect for the authority leads to a significantly higher tax morale.

Table 10
Trust and Obedience

<i>weighted ordered probit</i>	<i>(1)</i>			<i>(2)</i>			<i>(3)</i>		
<i>Dependent variable:</i> <i>tax morale</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>									
AGE	0.006**	2.249	0.001	0.006**	2.189	0.001	0.007**	2.616	0.002
FEMALE	-0.013	-0.194	-0.003	-0.015	-0.222	-0.004	-0.007	-0.108	-0.002
EDUCATION	-0.058***	-3.713	-0.014	-0.057***	-3.590	-0.014	-0.037**	-2.236	-0.009
BLACK	0.049	0.446	0.012	0.093	0.839	0.023	0.086	0.803	0.022
INDIAN, ALASKAN NATIVE	0.592**	1.984	0.147	0.654**	2.265	0.163	0.587**	2.043	0.148
ASIAN	0.529	1.281	0.131	0.462	1.111	0.115	0.426	1.003	0.108
<i>b) Employment Status</i>									
PART TIME EMPLOYED	0.121	0.847	0.030	0.085	0.591	0.021	0.034	0.240	0.009
UNEMPLOYED	-0.376*	-1.754	-0.093	-0.403*	-1.935	-0.101	-0.368*	-1.774	-0.093
RETIRED	-0.024	-0.262	-0.006	-0.038	-0.417	-0.010	-0.048	-0.528	-0.012
AT HOME	-0.174	-0.970	-0.043	-0.094	-0.517	-0.024	-0.165	-0.937	-0.042
STUDENT	-0.088	-0.219	-0.022	-0.212	-0.591	-0.053	-0.204	-0.552	-0.052
<i>c) Marital Status</i>									
MARRIED	-0.107	-1.100	-0.026	-0.102	-1.071	-0.026	-0.113	-1.187	-0.029
SEPARATED	-0.379*	-1.787	-0.094	-0.212	-1.057	-0.053	-0.252	-1.266	-0.064
DIVORCED	-0.144	-1.232	-0.036	-0.152	-1.314	-0.038	-0.196*	-1.699	-0.050
WIDOWED	-0.132	-0.910	-0.033	-0.148	-1.033	-0.037	-0.121	-0.850	-0.031
<i>d) Economic Variables</i>									
INCOME	0.001	0.066	0.000	-0.013	-0.833	-0.003	-0.010	-0.680	-0.003
<i>e) Trust and Obedience</i>									
TRUST OFFICIALS	0.139***	4.446	0.035						
TRUST OTHERS				0.078**	2.266	0.020			
OBEDIENCE							0.097**	2.309	0.024
Observations	1268			1280			1293		
Prob(F-statistic)	0.000			0.000					

Notes: In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg. = marginal effect for the highest tax morale score.

IV. CONCLUSIONS

First of all our intention was to verify the correlation between tax compliance and tax morale. A central question in the tax compliance literature is why so many people pay their taxes although fines and audit probability are low. One key determinant might be tax morale, the intrinsic motivation to pay taxes. With data from the *TOS 1987* we have found a significant correlation between tax evasion and tax morale. To check the sensitivity of the results, we used over-deduction and under-declaration of the income as dependent variables. Furthermore we used a broad variety of proxies to measure tax morale. In all cases, the coefficient was significant, controlling for a variety of factors.

Furthermore, in the tax compliance literature tax morale is rarely discussed and mostly as a residual explanation without referring to factors that shape tax morale. Although the data from the *TOS* are not new, it offers almost the only possibility to study a large variety of tax context factors. The main results have been summarised in *Table A3* and *A4* (see Appendix). We provide evidence on the impact of factors that shape tax morale. Positive attitudes towards tax authority and tax system significantly increase tax morale. Furthermore, direct democratic participation has a positive effect on tax morale. On the other hand, complexity of the tax form and tax form filling experience have not a significant effect on tax morale. People who have been audited had a lower tax morale than people who have never been called by the IRS for an audit. A higher perceived probability of audit had a negative, the fear of getting caught a positive effect on tax morale. The awareness of tax issues correlates with a lower tax morale. However, the coefficients are not significant and the marginal effects are very small. Trust in public officials and other people on the contrary has a highly significant positive effect on tax morale. Finally, a higher sense of obedience leads to a higher tax morale.

According to the results, tax morale seems to be a key determinant in enhancing tax compliance. There are a variety of policies beside coercion that help to increase tax morale and thus tax compliance. More empirical work is needed to better understand tax morale. Similar to this paper, most of the empirical insights in the tax compliance literature have been gained with data sets from the United States. The question remains to which extent the empirical findings from the United States can be generalised. The lack of empirical evidence in the tax compliance literature integrating regions as Europe, Africa, Latin America, and Asia has to be reduced in the future. It could be hypothesised that the effects found in this paper with U.S. data might be similar for the European countries, as many institutional

components are comparable to the United States. However, it would be interesting to check the robustness of these results in developing countries, as noncompliance and tax morale seem to be real problems there. In general, an excellent method would be to conduct panels or to do regular surveys in different countries, similarly designed as the *TOS*.

APPENDIX

Table A1
Signature Requirement U.S. 1992 (in %)

<i>states</i>	<i>statutory initiative</i>	<i>constitutional initiative</i>	<i>popular referendum</i>	<i>average signature threshold</i>
North Dakota	2	4	2	2.7
Maryland	-	-	3	3.0
Massachusetts	5	5	2	4.0
Colorado	5	5	5	5.0
Kentucky	-	-	5	5.0
California	5	8	5	6.0
Oregon	6	8	4	6.0
Missouri	5	8	5	6.0
Washington	8	-	4	6.0
Montana	5	10	5	6.7
South Dakota	5	10	5	6.7
Ohio	6	10	6	7.3
Nebraska	7	10	5	7.3
Michigan	8	10	5	7.7
Arkansas	8	10	6	8.0
Florida	-	8	0	8.0
Illinois	-	8	10	9.0
Oklahoma	8	15	5	9.3
Alaska	10	-	10	10.0
Arizona	10	15	5	10.0
Idaho	10	-	10	10.0
Maine	10	-	10	10.0
New Mexico	-	-	10	10.0
Nevada	10	10	10	10.0
Utah	10	-	10	10.0
Mississippi	-	12	-	12.0
Wyoming	15	-	15	15.0

Source: Magleby (1994, p. 226)

Table A2
Derivation of Some Variables (TOS)

Variable	Derivation
TAX EVASION (dependent variable)	<p>Within the past five years or so, do you think you might have overstated any deductions or expenses – like medical, charitable or business deductions, and so forth – even by just a small amount (OVERDEDUC)?</p> <p>Within the past five years or so, do you think you might have left some reportable income off your federal tax return – even, just a minor amount (UNDERREP)? (1= definitely have not, 4=definitely have)</p>
TAX MORALE (dependent variable)	Trading or exchanging goods or services with a friend or neighbor and not reporting it on your tax form.
INCOME	<p>Looking at all sources of income, what was the approximate total income of your own before taxes in 1986:</p> <ol style="list-style-type: none"> 1. Zero to \$4.999 2. \$5.000 to \$9.999 3. \$10.000 to \$14.999 4. \$15.000 to \$19.999 5. \$20.000 to \$24.999 6. \$25.000 to \$29.999 7. \$30.000 to \$39.999 8. \$40.000 to \$49.999 9. \$50.000 to \$74.999 10. \$75.000 or more
EDUCATION	<p>What was the last grade of school you completed?</p> <ol style="list-style-type: none"> 1. No formal schooling 2. First through 7th grade 3. 8th grade 4. Some high school 5. High school graduate 6. Some college 7. Two-year college graduate 8. Four-year college graduate 9. Postgraduate

Source: Taxpayer Opinion Survey (1987).

Table A3

Summary of the Main Findings (Dependent Variable: Tax Evasion)

Variables	Effect on tax evasion over-deduction	sign.	Effect on tax evasion under-declaration	sign.
<i>a) Demographic Factors</i>				
AGE	negative effect	yes	negative effect	yes
EDUCATION	positive effect	yes	positive effect	yes
<i>b) Gender</i> (comparison with the reference group: MALE)				
FEMALE	lower tax evasion	yes	lower tax evasion	yes
<i>c) Ethnic Group</i> (comparison with the reference group: WHITE)				
BLACK	higher than white	no	higher than white	no
INDIAN, ALASKAN NAT.	lower than white	no	lower than white	no
ASIAN	higher than white	no	lower than white	no
<i>d) Employment Status</i> (comparison with the reference group: FULL TIME EMPLOYED)				
PART TIME EMPLOYED	higher tax morale	no	higher tax morale	no
UNEMPLOYED	higher tax morale	no	lower tax morale	no
RETIRED	higher tax morale	no	higher tax morale	no
AT HOME	lower tax morale	no	lower tax morale	no
STUDENT	lower tax morale	no	higher tax morale	no
<i>e) Marital Status</i> (comparison with the reference group: SINGLE)				
MARRIED	higher tax morale	yes	higher tax morale	yes
SEPARATED	higher tax morale	no	lower tax morale	no
DIVORCED	higher tax morale	no	higher tax morale	no
WIDOWED	higher tax morale	no	lower tax morale	no
<i>f) Economic Variable</i>				
INCOME	positive effect	yes	negative effect	yes
<i>g) Tax Morale</i>				
	negative effect	yes	negative effect	yes

Table A4

Summary of the Main Findings (Dependent Variable: Tax Morale)

Variables	Effect on tax morale	Sign
<i>a) Demographic Factors</i>		
AGE	positive	yes
FEMALE (comparison with the reference group: MALE)	lower tax morale	no
EDUCATION	negative	yes
<i>b) Ethnic Group (comparison with the reference group: WHITE)</i>		
BLACK	higher tax morale	no
INDIAN, ALASKAN NAT.	higher tax morale	yes
ASIAN	higher tax morale	no
<i>c) Employment Status (comparison with the reference group: FULL TIME EMPL.)</i>		
PART TIME EMPLOYED	higher tax morale	no
UNEMPLOYED	lower tax morale	yes
RETIRED	lower tax morale	no
AT HOME	lower tax morale	no
STUDENT	lower tax morale	no
<i>d) Marital Status (comparison with the reference group: SINGLE)</i>		
MARRIED	lower tax morale	no
SEPARATED	lower tax morale	no
DIVORCED	lower tax morale	no
WIDOWED	lower tax morale	no
<i>e) Economic Variable</i>		
INCOME	negative	no
<i>f) Further Variables</i>		
POSITIVE ATTITUDES REGARDING THE TAX ADMINISTRATION	positive	yes
FAIRNESS OF THE TAX SYSTEM	positive	yes
DIRECT DEMOCRACY	positive	yes
COMPLEXITY	negative	no
TAX FORM EXPERIENCE	negative	no
HAVING BEEN AUDITED	negative	yes
PERCEPTION REGARDING GENERAL TAX EVASION	negative	yes
PROBABILITY OF AUDIT	negative	yes
FEAR OF GETTING CAUGHT	positive	yes
TALKING WITH THE FAMILY ABOUT IRS	negative	yes
TALKING WITH FRIENDS ABOUT IRS	negative	yes
ATTENTION ON RADIO INFORMATION ABOUT IRS	negative	no

REFERENCES

- Adams, C. (1993) *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Clotfelter, C. T. (1983). Tax Evasion and Tax Rate: An Analysis of Individual Return, *The Review of Economics and Statistics*. 65: 363-373.
- Feinstein, J. S. (1991). An Econometric Analysis of Income Tax Evasion and its Detection, *RAND Journal of Economics*. 22: 14-35.
- Forest, A. and S. M. Sheffrin (2002). Complexity and Compliance: An Empirical Investigation, *National Tax Journal*. 55:75-88.
- Frey, B. S. and F. Schneider (2000). Informal and Underground Economies, in: Neil J. Smelser and Paul B. Baltes (eds), *International Encyclopedia of Social and Behavioral Science*. Amsterdam: Elsevier Science Publishing Company: 7441-7446.
- Hays, S. (2000). An Empirical Analysis of Taxpayers' Attitudes and Behavioral Intentions Regarding Compliance with Federal Income Tax Laws, Dissertation, College of Administration and Business, Louisiana Tech University.
- Jackson, B. and V. C. Milliron (1986). Tax Compliance Research: Findings, Problems, and Prospects, *Journal of Accounting Literature*. 5: 125-165.
- Kasper, W. and M. E. Streit (1999). *Institutional Economics*. Social Order and Public Policy. Cheltenham, UK: Edward Elgar.
- Lempert, R. (1992). Commentary of the paper: K. W. Smith (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press: 251-258.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Lindenberg, S. (2001). Intrinsic Motivation in a New Light, *KYKLOS*. 54: 317-342.
- Paldam, M. and G. T. Svendsen (2000). Missing Social Capital and the Transition in Eastern Europe, forthcoming in: *Journal for Institutional Innovation, Development and Transition*.
- Slemrod, J. (1998). On Voluntary Compliance, Voluntary Taxes, and Social Capital, *National Tax Journal*, 51: 485-492.
- Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance, in: J. Slemrod (ed.), *Why People Pay Taxes*. Tax Compliance and Enforcement. Ann Arbor: University of Michigan Press: 223-250.
- Taxpayer Opinion Survey (1987). United States Department of the Treasury, Internal Revenue Service, IRS Doc. 7292 (1-88).

- Torgler, B. (2001a). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168
- Torgler, B. (2001b). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002a). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.
- Torgler, B. (2002b). The Economic Analysis of “Creative” Compliance, WWZ-Discussion Paper 02/04, Basel: WWZ.
- Torgler, B. (2003a). Direct Democracy Matters: Tax Morale and Political Participation, *National Tax Association Papers and Proceedings* (Orlando, 2002).
- Torgler, B. (2003b). Tax Morale, Rule Governed Behaviour and Trust, forthcoming in: *Constitutional Political Economy*.

CHAPTER X**TAX MORALE IN TRANSITION COUNTRIES*****ABSTRACT**

This paper tries to reduce the lack of tax compliance research analysing tax morale in transition countries. The empirical analysis using tax morale as dependent variable working with World Values Survey data indicates that there is a significantly higher tax morale in Central/Eastern European economies than in Former Soviet Union countries. This difference has increased during the transition process. Furthermore, the paper shows that factors as trust in the legal system and the government have a significant positive effect on tax morale in transition economies.

JEL classification: H260, K420, 9160, P270

Keywords: tax morale, tax morale, transition countries

* Forthcoming: Benno Torgler (2003). Tax Morale in Transition Countries, *Post-Communist Economies* (shorter version).

I. INTRODUCTION

One of the most interesting features in research is the transition process of former Communist countries. Around one quarter of the world population live in such countries (see Martinez-Vazques and McNab 1997). The transition process brings up many policy questions, among others the tax system, the structure of tax administration, the degree of political participation etc. In general, we find numerous research papers regarding the transition process. However, surprisingly it is novel in the tax compliance literature to analyse tax morale in transition countries.

Fiscal concerns might be a key element. It is often argued that tax evasion is widespread in transition countries (see, e.g., Alm and Martinez-Vazques 2001, Martinez-Vazques and McNab 2000). Alm and Martinez-Vazques (2001) point out that

“These high levels of tax evasion in DTCs (developing and transition countries) often jeopardize the government’s ability to implement fundamental policies, such as macroeconomic stabilization or the provision of adequate social services and capital infrastructure” (p. 2).

It might be useful not to focus on tax evasion only but to go a step back and to analyse tax morale, the intrinsic motivation to pay taxes. Frey (2002, p. 5) stresses that it is important to have social capital in terms of mutual trust and honesty in the transition deregulation and privatisation process. In general, tax compliance research has found a strong negative correlation between tax evasion and tax morale (for Switzerland, see Pommerehne and Weck-Hannemann 1996, for the United States see Torgler 2003a).

In the transition process, revenue needs are an important issue. Gordon (1994) points out that in the reform process, governments in Eastern Europe are confronted with expenditure needs (e.g., investment demand, infrastructure improvements, social insurances). In such a situation the degree of the individuals’ tax morale might be a key determinant. In this paper we are going to examine tax morale in transition countries. In Section II we will first have a look at the tax system in transition countries. In Section III we analyse the degree of tax morale and the size of shadow economy in 20 transition countries. To measure tax morale, we are going to use the World Values Survey to get some information about the process between 1990 and 1997. Furthermore we are going to compare tax morale data with the degree of shadow economy in those countries. In Section IV, we will do multiple

regressions to check if there is a difference between Former Soviet Union (FSU) and Central/Eastern European (CEE) economies using tax morale as dependent variable. Regressions help to isolate the effects of different factors. Furthermore, Section V analyses tax morale over time in 8 transition countries (5 FSU, 3 CEE countries). The paper finishes with some concluding remarks.

II. TAXATION IN TRANSITION COUNTRIES

The revenue of the Soviet State was generated by owned firms, cooperatives, turnover taxes, individual taxes, and loans (Kornai 1992, p. 138). Only the self-employees (e.g., performing artists, sportsmen, writers, small retailers) had to pay income taxes. However, taxes have been founded on various grounds as, e.g., real estate and housing tax. Kornai (1992) points out that the revenue amount generated by direct taxes was tiny compared to other sources. *Table 1* presents the structure of the Soviet State revenue (in percentage) for the years 1975 and 1984. As we can see, only around 8 percent of the total revenue amount stem from the taxes on population.

Table 1

The Structure of the Soviet State Revenues (in % of total revenue)

	1975	1984
Turnover tax	30.4	27.2
Payment from profit	31.9	29.4
Taxes on population	8.4	7.6
Social insurance	5.2	6.6
Other revenues	24.1	29.2

Source: Kornai (1992, p. 137).

The taxes on profit were the most important ones in the Soviet State. In centrally planned economies the profit tax rates were set at 50 and 60 percent. However, the tax base varied depending on the industry and the enterprises (Martinez-Vasquez and McNab 1997). In general, the tax laws were quite complex and not transparent (see Martinez-Vasquez and McNab 2000).

As a consequence, individuals were not aware of taxes or had no perceptions regarding the tax burden. Martinez-Vasquez and McNab (1997) argued that it is not surprising to see taxpayers' resistance movements in the reform process when they were taxed for the first time. The undeveloped tax administrations, mostly engaged in cash management, were not prepared to do their work in a modern income tax system. Martinez-Vasquez and McNab (1997, p. 30) list up major institutional weaknesses of centrally planned tax administrations (see *Figure 1*).

Figure 1

Weakness of Centrally Planned Tax Administrations

- Lack of familiarity with standardized treatment and homogeneous rules for all taxpayers.
- Lack of skills and experiences with market-oriented taxes and tax administration techniques, despite the fact that the existing bureaucracy was experienced.
- Stagnant resources and woefully inadequate training and equipment to deal efficiently with a large increase in taxpayers.
- Lack of adequate salaries for tax collectors to attract and retain quality personnel and to discourage dishonest behavior.
- Lack of speed in adopting new approaches in enforcement and restructuring responsibilities along functional lines.
- Lack of information systems with computerized records for registration and collections, and in many cases the lack of taxpayer identification systems.
- Lack of manuals and techniques for effective audit of private enterprises.
- Lack of understanding of market economies.

Source: Martinez-Vasquez and McNab (1997, p. 30).

Martinez-Vasquez and McNab (1997, 2000) also give an overview on the current taxation systems in the transition countries. For our analysis regarding tax morale, the income tax structure is most interesting. The first reforms regarding the income tax have been made in Hungary (1988) and Poland (1992), the other countries reformed their personal income tax between 1993 and 1994. They have a mixed income and consumption tax base. Most countries apply a progressive tax rate schedule. In general, the top marginal tax rate is 40

percent. There is a strong variation in rate structuring: Estonia has a single rate, Romania 15 different rates. A personal income tax was levied on self-employers' and employees' income. Compared to the profits and turnover taxes, the personal income tax was less subject to erosion tendencies. However, employment in the private informal sector increased (see Bogetić and Hillman 1995).

The income tax in transition countries is mostly shared between the centre and the sub-national governments. Local revenue autonomy or the possibility to change tax rates or taxes have been gradually introduced, being still at a low level. The tax structure is determined centrally (Martinez-Vasquez and McNab 2000).

Asanegra de Jantscher et al. (1992) point out that tax collection problems arise in transition countries as, e.g., taxpayers are required to

“physically make a trip to either a tax office, a post office, or a bank” (p. 125).

This presupposes that the services are reliable. Furthermore, much greater problems result from the fact that with an increasing amount of taxpayers it becomes much more difficult to detect tax evaders or avoiders. The collection system needs to be organised efficiently. The authors notice that in a stronger market orientation, tax administration will not have sufficient resources to provide 100 percent coverage, compared to centrally planned economies with their broadly state-owned enterprises. To get a well functioning system more reliance on self-assessment is necessary. In transition countries, tax administration tried to seek revenue from traditional state-enterprises which were declining. On the other hand, the private sector was expanding, but the tax administration was not capable to efficiently enforce taxation in this sector. Thus, we could observe an erosion of the tax base (see, e.g., Bogetić and Hillman 1995 for Bulgaria). Bogetić and Hillman (1995) point out:

“Self-assessment and random audits would have to replace the previous detailed direct calculation of tax liability. Cultural and historical considerations were also not conducive to widespread voluntary tax compliance. Cynicism regarding government under socialism carried over into the transition, making individuals reluctant (or more reluctant than usual) to cooperate via voluntary self assessment of tax obligations” (p. 36).

In general, citizens in many transition countries at the beginning of the transition process were not used to paying taxes (see, e.g., Kornai 1990). Thus, it might be possible that taxpayers strongly react to tax policy changes which are necessary for the transition from a centrally

controlled to a market economy. It might be important to evaluate which factors influence tax morale to guarantee citizens' loyalty to the government.

III. TAX MORALE AND THE SIZE OF SHADOW ECONOMY

Campos and Coricelli (2002) argue that 10 years after the collapse of the communist regimes the results are mixed with a massive output fall, reducing the real GDP (1999) in 23 of 25 transition countries. In most cases the output fell to less than 50 percent of the 1989 GDP level.

According to the author's knowledge, there is no study in the tax compliance literature that systematically analyses tax morale in transition countries. Furthermore, there are not many studies that inform about the extent of tax evasion (see, e.g., Anderson and Carasciuc 1999). Measuring the underground economy is one method to assess the extent of tax evasion. As we can see in *Table 2*, Schneider (2002) has estimated the size of shadow economy for transition countries. He uses two estimations: the physical input (electricity) and the dynamic multiple-indicators method¹. The physical input method argues that electricity consumption is an indicator of economic activity. The estimated shadow economy can be found by subtracting this indicator from the estimated GDP. Thus, the size of shadow economy is the difference between the official gross rate of GDP and the rate of total electricity consumption. The DYMIMIC method on the other hand considers multiple causes and multiple indicators over time. It consists of two models, a measurement model that links the unobserved variable to the observed indicators and the structural equations model where causal relationships among unobserved variables are specified.

In general, we find an increase of the average size of the shadow economy over time. Furthermore, in Central and East European countries its size is smaller than in Former Soviet Union countries. There is a certain difference between the estimation methods, with the tendency that the DYMIMIC method estimated higher rates of shadow economy in the countries. In the period 1990-1993, the biggest shadow economy was found in Azerbaijan (between 43.8 and 45.1 percent of the GDP), the smallest in Poland (between 20.3 and 22.3 percent). With both methods even an increase in its size could be observed. A high share of

¹ For a deep discussion of the different methods see Schneider and Enste (1998) and Schneider (2002).

shadow economy indicates that external institutions are weak and inefficient. It might just be a way for people to survive in a situation of great discontinuity and uncertainty.

Table 2
The Size of Shadow Economy in Transition Countries (in % GDP)

Countries	<i>Physical Input Method</i>		<i>DYMIMIC Method</i>	
	<i>Average 1990-1993</i>	<i>Average 1994-1995</i>	<i>Average 1990-1993</i>	<i>Average 2000/2001</i>
Former Soviet Union				
Armenia	39.4	40.3	40.1	45.3
Azerbaijan	43.8	59.3	45.1	60.1
Belarus	34.0	39.1	35.6	47.1
Estonia	33.9	38.5	34.3	39.1
Georgia	43.6	63.0	45.1	66.1
Latvia	24.3	34.8	25.7	39.6
Lithuania	26.0	25.2	26.0	29.4
Moldova	29.1	37.7	29.3	44.1
Russia	27.0	41.0	27.8	45.1
Ukraine	38.8	47.3	29.4	51.2
Average	34.0	42.6	33.8	46.7
Central and Eastern Europe				
Bulgaria	26.3	32.7	27.1	36.4
Croatia	23.5	28.5	24.6	32.4
Hungary	20.7	28.4	22.3	24.4
Macedonia	34.5	40.3	35.6	45.1
Poland	20.3	13.9	22.3	27.4
Romania	26.0	28.3	27.3	33.4
Slovenia	22.4	23.9	22.9	26.7
Average	24.8	28.0	26.0	32.3

Source: Schneider (2002, p. 7).

With the World Values Survey (see Inglehart et al. 2000) we have the possibility to integrate transition countries into an empirical study using multiple regression analysis. We are going to build dummy variables for Former Soviet Union (FSU) and Central/Eastern European (CEE) countries. Before starting with the multiple regression, we present a descriptive analysis in *Table 3*, showing in column 2 for each country the percentage of individuals saying that tax evasion is never justifiable, and in column 3 the mean value for all countries (scale from 0 to 3, where 3 is the highest tax morale).

Table 3
Tax Morale in Transition Countries

Countries	<i>Tax Evasion Is Never Justifiable (%)</i>		<i>Mean</i>	
	<i>1990-1993</i>	<i>1995-1997</i>	<i>1990-1993</i>	<i>1995-1997</i>
Former Soviet Union				
Azerbaijan		47.8		1.634
Belarus	44.4	40.7	1.617	1.518
Estonia	64.6	42.4	2.25	1.56
Georgia		49.7		1.76
Latvia	64.4	31.3	2.155	1.379
Lithuania	57	46.1	2.089	1.687
Moldova		39		1.426
Russia	54.2	46.4	1.857	1.662
Ukraine		41.4		1.558
Average	56.9	42.8	1.994	1.576
Central and Eastern Europe				
Armenia		41.1		1.508
Bulgaria	57.4	65.3	2.038	2.24
Bosnia		56.4		2.172
Croatia		36.6		1.309
Hungary	56.3		1.913	
Macedonia		61.4		2.109
Montenegro		48.4		1.749
Poland	49.3	55.2	1.829	2.001
Romania	67.7		2.308	
Slovenia	68.5	53.9	2.296	1.913
Serbia		56		1.969
Average	60	52.7	2.077	1.886

Notes: Own calculations from the World Values Surveys. First and second column: percentage of individuals saying that tax evasion is "never justified". Third and fourth column: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

CEE countries show a higher tax morale than FSU countries. These results are in line with findings in *Table 2*. Countries with a lower tax morale have a higher size of shadow economy. Furthermore, we can see a decay of tax morale over time, similar to an increase in the size of the shadow economy. These results are in line with the registered decline of the living standard in the transition countries. This effect is much stronger for FSU than for CEE countries. In the period 1990-1993, we find the lowest tax morale in Belarus (44.4%, 1.617) in 1995-1997 in Latvia (31.3%, 1.379) and Croatia (36.6%, 1.309). We find a high decay of tax morale in the Baltic countries Latvia, Lithuania and Estonia. However, the main

disadvantage of the WVS Survey is the fact that only 8 countries participated in both survey waves.

It could be argued that the shadow economy in transition countries can improve growth prospects, providing a platform for new firm creation (see Eilat and Zinnes 2000). There are situations in some developing countries where law-breaking helps to survive. If people want to open a business, to acquire land or build homes they are confronted with high transaction costs (Hernando de Soto 2000, see also Torgler 2001a). For transition countries it is difficult to find the right equilibrium of state activity, as the collapse of communism was a collapse of a vast state apparatus. A high degree of shadow economy has the negative effect to reduce the state's tax collection, affecting thus the revenues governments need to provide public goods and to build trustworthy institutions. Many countries as, e.g., Russia, react with the wrong strategy increasing taxes which enlarges the shadow economy. The incentive for enterprises to evade taxes increases and more bribes are paid to protect themselves (see Levin and Satarov 2000).

IV. TAX MORALE DIFFERENCES BETWEEN FORMER SOVIET UNION AND CENTRAL/EASTERN EUROPEAN ECONOMIES

In our multiple regression analysis we will use tax morale as dependent variable. We are going to work with the WVS waves 1989-1993 and 1995-1998. This offers the possibility to integrate 20 transition countries into the empirical study. We will build a dummy variable to compare FSU and CEE countries. FSU countries turned out to experience a higher decline of output over the transformation years than CEE countries. Furthermore, reforms have progressed much faster in CEE than in FSU countries (see Campos and Coricelli 2002). It can be argued that FSU countries have been stimulated more by the collapse and are stronger involved with the economic crisis. As a consequence we would predict a significantly lower tax morale in FSU economies compared to CEE economies.

We are going to start with the years 1989-1993. Ten countries have been integrated in the analysis, five from the FSU and five from the CEE. Do we find significant differences between them?

We are going to analyse trust as a key factor that influences tax morale. Governments have a leading role in the transition process. Institutional changes are connected to uncertainty. Institutions provide a reduction of uncertainty by designing the provided structure of

interaction. As a consequence, greater certainty in the political process is gained. Ensley and Munger (2001) argue that

“if rules are not formalized, the players may spend too much time arguing over the rules and less time competing in productive activities” (p. 116).

And Kasper and Streit (1999) stress that

“Strong institutional controls and accountability are required to control deeply rooted agent opportunism. The rule of law has to be imposed on all government agents” (p. 432).

Stable and easily knowable institutions help create reliability. A government based on a well-functioning democracy produces more trust than a dictatorship. A lack of public trust could undermine state revenues and thus the government’s ability to perform its function (see Torgler 2001b, Torgler 2003b). Raiser et al. (2001) found that in transition countries social capital in form of civic participation and trust in public institutions has a significant impact on growth. As trust variable we use trust in the legal system². Weakness of the legal system is a major problem in a process of transition. Levin and Satorov (2000) stress that after socialism’s collapse,

“judicial weakness left a legal vacuum that remains unfilled” (p. 120).

Table 4 presents the results. The regression results are comparable to the descriptive statistics. People from Central/Eastern Europe have a significantly higher tax morale than people from Former Soviet Union countries. Being from Central/Eastern Europe rather than from a Former Soviet Union country increases the probability of stating that tax evasion is never justified by 2.8 percentage points in Eq. 1a and 1.4 percentage points in Eq. 1b. Eq. 1b uses another weighting variable. To get an equal number of weighted observations (around 1500) for each survey the original weight variable was multiplied by a constant for each country.

Trust in the legal system has a highly significant positive effect on tax morale. An increase in the trust level by one unit increases the share of individuals arguing that tax morale

² Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all).

is never justifiable by 3.5 percentage points in both equations . This result is consistent with the hypothesis that trust is an important mechanism to raise tax morale.

Table 4
Determinants of Tax Morale WVS 1989-1993

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>Equation 1a</i> <i>weighted</i> <i>ordered probit</i>			<i>Equation 1b</i> <i>weighted</i> <i>ordered probit</i>		
<i>Independent Variables</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>						
AGE 30-49	0.238***	7.893	0.093	0.229***	7.068	0.089
AGE 50-64	0.513***	14.738	0.200	0.511***	12.960	0.199
AGE 65+	0.680***	13.178	0.265	0.648***	11.185	0.252
FEMALE	0.148***	6.658	0.058	0.140***	6.008	0.054
<i>b) Marital Status</i>						
MARRIED	0.084**	2.210	0.033	0.085**	2.261	0.033
LIVING TOGETHER	0.017	0.252	0.007	0.014	0.210	0.005
DIVORCED	0.144**	2.512	0.056	0.138**	2.182	0.054
SEPARATED	-0.048	-0.549	-0.019	-0.009	-0.078	-0.003
WIDOWED	0.099	1.491	0.039	0.119*	1.890	0.046
<i>c) Employment Status</i>						
PART TIME EMPLOYED	0.034	0.624	0.013	0.004	0.096	0.002
SELFEMPLOYED	-0.132**	-2.087	-0.051	-0.159***	-2.912	-0.062
UNEMPLOYED	0.004	0.053	0.002	-0.003	-0.052	-0.001
AT HOME	-0.069	-1.195	-0.027	-0.071	-1.095	-0.028
STUDENT	-0.255***	-3.657	-0.099	-0.253***	-3.660	-0.098
RETIRED	-0.091**	-2.358	-0.035	-0.116***	-2.727	-0.045
OTHER	-0.182**	-2.338	-0.071	-0.178**	-2.306	-0.069
<i>d) Further Variables</i>						
CENTRAL AND EASTERN EUROPE	0.072***	3.066	0.028	0.037	1.557	0.014
TRUST IN LEGAL SYSTEM	0.089***	7.219	0.035	0.090***	6.714	0.035
Observations	10324			10324		
Prob(LM-statistic)	0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FORMER SOVIET UNION COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). EQ. 1b uses another weighting variable: original weight variable was multiplied by a constant for each country, in order to produce an equal weighted N for each survey.

Looking at the other variables we observe that all age groups from 30 to 65+ have a significantly higher tax morale than the reference group 16-29. For example, the proportion of persons of the age 30-49 who report the highest tax morale is 9.3 percentage points higher than

for the reference age group. We can observe that the marginal effects increase with an increase of the age. Thus, the group at the age 65 and above reports the highest tax morale among the groups. Being female rather than male increases the probability of a person stating that tax evasion is never justified by more than 5 percentage points. Married and divorced people have a significantly higher tax morale than singles. The proportion of self-employees who report the highest tax morale is 5.1 (6.2) percentage points lower than of full-time employees. Students and retired people seem to have a lower tax morale than the reference group.

Table 5
Sensitivity Analysis WVS 1989-1993

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg.</i>										
<i>Dependent V.: Tax Morale</i>		<i>Effect</i>										
<i>Independent Variables</i>	<i>2a</i>		<i>2b</i>		<i>3a</i>		<i>3b</i>		<i>4a</i>		<i>4b</i>	
<i>a) Demographic Variables</i>	included											
<i>b) Marital Status</i>	included											
<i>c) Employment Status</i>	included											
<i>d) Further Variables</i>												
CENTRAL AND EASTERN EUROPE	0.039	0.015	0.015	0.006	0.088***	0.034	0.052**	0.020	0.071***	0.028	0.039	0.016
TRUST IN LEGAL SYSTEM	0.057***	0.022	0.061***	0.024	0.077***	0.030	0.078***	0.030	0.085***	0.033	0.084***	0.033
PRIDE	0.178***	0.069	0.177***	0.069								
FINANCIAL SATISFACTION					0.011**	0.005	0.009*	0.004				
SATISFACTION									0.025***	0.010	0.026***	0.010
Number of observations	9664		9664		9092		9092		9977		9977	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FORMER SOVIET UNION COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). EQ. 2b, 3b, 4b use another weighting variable: original weight variable was multiplied by a constant.

To investigate whether these findings are robust, more equations are estimated integrating the following further variables: pride, satisfaction and financial satisfaction (see *Table 5*). First, pride has been integrated into the equation (see Eq. 2a, 2b). Especially in a transformation process, one would predict that people who are proud to be citizens of their country have a higher loyalty to the state and thus a higher tax morale. *Table 5* indicates that pride significantly increases tax morale. In Eq. 3 we have included financial satisfaction. Financial

dissatisfaction might create a sense of distress, especially when taxes have to be paid and there is a discrepancy between the actual and the desired financial situation. There might be quite a few citizens in transition countries that feel such a discrepancy, considering the decay of living standard. People might perceive taxes as a strong restriction to reach their goals, which increases the incentives to reduce tax honesty. Eq. 4 goes a step further. The transition process is influenced by many changes that have an effect on individuals' life satisfaction in general. This makes it an interesting factor to analyse. Both variables significantly affect tax morale in a positive way.

The World Values Survey (1995-1998) offers the possibility to include more countries into the analysis (see *Table 3*). Furthermore, we will have the possibility to check the robustness of the correlation between trust and tax morale. Trust in the legal system was closely connected to the constitutional level. To get the current politico-economic level we integrate the following variables into the analysis: trust in government³, satisfaction with national officers⁴ and evaluation of the political system⁵.

Table 6 presents the results. Similar to the years 1989-1993 we find a significant difference between Central/Eastern European and Former Soviet Union citizens. However, the marginal effects are much higher in the years 1995-1998, which indicates a higher divergence between the regions. It indicates that being from a CEE rather than from a FSU country increases the probability of stating that tax evasion is never justified by around 13 percentage points. It seems that Central and Eastern Europe had better succeeded to control the decay of tax morale during the transformation process.

All trust coefficients are highly significant. Similar to the years 1990-1993, trust in the legal system has a significant positive effect on tax morale with a higher marginal effect than in the years 1989-1993. An increase in the trust in government scale (satisfaction with officers) by one unit increases the share of subjects indicating the highest tax morale by 5.1 (3.4) percentage points. A positive evaluation of the political system also significantly influences tax morale in a positive way. Similar results can also be found regarding the control variables. A higher age and being female have a positive effect on tax morale. Self-employees have a significantly lower tax morale than full-employees. Comparing both data

³ The World Values Survey asked the question: Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all).

⁴ How satisfied are you with the way the people now in national office are handling the country's affairs? Would you say you are very satisfied (4), fairly satisfied (3), fairly dissatisfied (2) or very dissatisfied (1) (scale 1 to 4).

⁵ Where on a score from 1 to 10 would you put the political system as it is today (1=very bad, 10=very good).

sets, it seems that the coefficient of the variables “divorced” and “retired” are not robust. The coefficient of the variable “divorced” is not significant for the years 1995-1998, and the sign of the variable retired has changed.

Table 6
Trust and Tax Morale WVS 1995-1998

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Variable</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Demographic Factors								
AGE 30-49	0.219***	0.087	0.214***	0.085	0.212***	0.084	0.220***	0.087
AGE 50-64	0.387***	0.154	0.380***	0.151	0.387***	0.154	0.390***	0.155
AGE 65+	0.426***	0.169	0.428***	0.170	0.458***	0.182	0.450***	0.179
FEMALE	0.087***	0.035	0.093***	0.037	0.086***	0.034	0.094***	0.037
b) Marital Status								
MARRIED	0.075***	0.030	0.073***	0.029	0.074***	0.030	0.083***	0.033
LIVING TOGETHER	-0.153***	-0.061	-0.141***	-0.056	-0.161***	-0.064	-0.143***	-0.057
DIVORCED	-0.070	-0.028	-0.057	-0.023	-0.060	0.000	-0.069*	-0.027
SEPARATED	-0.005	-0.002	0.002	0.001	-0.001	0.000	0.009	0.003
WIDOWED	0.059*	0.024	0.069**	0.027	0.072**	0.029	0.069**	0.027
c) Employment Status								
PART TIME EMPLOYED	-0.018	-0.007	-0.029	-0.012	-0.022	-0.009	-0.013	-0.005
SELFEMPLOYED	-0.343***	-0.136	-0.352***	-0.140	-0.373***	-0.149	-0.365***	-0.145
UNEMPLOYED	-0.007	-0.003	-0.006	-0.002	0.012	0.005	0.004	0.002
AT HOME	-0.047*	-0.019	-0.067**	-0.027	-0.033	-0.013	-0.031	-0.012
STUDENT	-0.049	-0.019	-0.051	-0.020	-0.050	-0.020	-0.051	-0.020
RETIRED	0.149***	0.059	0.150***	0.060	0.157***	0.063	0.146***	0.058
OTHER	0.004	0.001	0.003	0.001	0.018	0.007	0.000	0.000
d) Regional Variable								
CENTRAL AND EASTERN EUROPE	0.332***	0.132	0.322***	0.128	0.330***	0.131	0.331***	0.132
e) Trust								
TRUST IN LEGAL SYSTEM	0.126***	0.050						
TRUST IN GOVERNMENT			0.128***	0.051				
SATISFACTION WITH NATIONAL OFFICERS					0.086***	0.034		
EVALUATION OF THE POLITICAL SYSTEM							0.021***	0.008
Observations	20779		20645		19339		20565	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FORMER SOVIET UNION COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Frey (2002) analyses the introduction of direct democracy in transition countries. He points out that social capital is both a precondition and consequence of direct democracy. The political participation is a social innovation for transition economies and produces beneficial effects (see also Torgler 2002). Direct democracy gives decision power to taxpayers who are on average outside the group of politicians (see Frey and Stutzer 2002). As a consequence, it can be hypothesised that tax revenues are spent more in accordance with the preferences of the taxpayers, which increases tax morale. Torgler (2002, 2003a, 2003c) found a positive correlation between tax morale and the degree of direct democracy in Switzerland and the United States. Levin and Satarov (2000) point out the relevance to have institutions of civil societies in the transition process:

“Neither grassroots nor top-level corruption can be turned back without the involvement of the public” (p. 119).

We are going to analyse whether people with a stronger pro democratic attitude have a higher tax morale. The World Values Survey offers the possibility to build variables that measure individuals’ attitudes regarding a democratic political system (PRO DEMOCRACY 1⁶ and PRO DEMOCRACY 2⁷). *Table 7* indicates that a pro democratic attitude has a highly significant positive effect on tax morale. An increase in the pro democracy scale by one unit in both cases raises the proportion of persons indicating the highest tax morale by more than 3 percentage points.

Table 7 also indicates the effect of pride on tax morale. Similar to the data of 1989-1993 we find a positive correlation between pride and tax morale with the same marginal effects of around 7 percentage points. In general, the results in *Table 7* indicate that tax morale, which is needed for a healthy state development in the transition process, might be enhanced with bottom up strategies. It seems to be important to give individuals an active and constructive role to transform the country according to their preferences. Rodrik (2001), for example, found that the extent of political participation has a positive effect on the stability of the output growth. In line with the democratic process, more decentralisation, approaching the decision-making process to local influences, would help individuals to control agents’ activities. Citizens can be expected “to know which rabbit to shoot” (Lilienthal 1949, p. 90).

⁶ The question is: “Would you say that having a democratic political system is a very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country” (scale 1 to 4).

⁷ “Democracy may have problems but it’s better than any other form of government” (4=strongly agree, 1=strongly disagree).

Table 7
Tax Morale, Democracy and Pride

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>
	5		6		7	
<i>a) Demographic Variables</i>	included		included		included	
<i>b) Marital Status</i>	included		included		included	
<i>c) Employment Status</i>	included		included		included	
<i>d) Regional Variable</i>						
CENTRAL AND EASTERN EUROPE	0.293***	0.116				
<i>e) Democracy and Pride</i>						
PRO DEMOCRACY 1	0.072***	0.028				
PRO DEMOCRACY 2			0.063***	0.025		
PRIDE					0.190***	0.076
Number of observations	18264		18280		20146	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FORMER SOVIET UNION COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

In a further step we analyse again the correlation between satisfaction and tax morale. *Table 8* presents the results which are similar to the findings from the years 1989-1993. However, financial satisfaction has lost its significance indicating also very low marginal effects. The variable satisfaction is quite robust. An increase in the level of satisfaction by one unit increases the proportion of persons reporting the highest tax morale by only 0.6 percentage points. The marginal effects are much lower than in the years 1989-1993. To check the robustness we have included a further variable HAPPINESS⁸. *Table 8* shows that happiness significantly increases tax morale. The marginal effects are higher than the ones for SATISFACTION. In general the findings in both data sets indicate that satisfaction has a positive effect on tax morale.

⁸ Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).

Table 8
Tax Morale and Satisfaction

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent Variable: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>8</i>		<i>9</i>		<i>10</i>	
<i>a) Demographic Variables</i>	included		included		included	
<i>b) Marital Status</i>	included		included		included	
<i>c) Employment Status</i>	included		included		included	
<i>d) Regional Variable</i>						
CENTRAL AND EASTERN EUROPE	0.329***	0.131	0.319***	0.127	0.317***	0.126
<i>e) Satisfaction</i>						
FINANCIAL SATISFACTION	0.003	0.001				
SATISFACTION			0.014***	0.006		
HAPPINESS					0.060***	0.024
Number of observations	21423		21349		21099	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, FORMER SOVIET UNION COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

V. TAX MORALE OVER TIME IN DIFFERENT COUNTRIES

Gërzhani (2002) points out that many transition countries have an institutional crisis after the collapse of communism. She argues that an institutional crisis produces a gap between old institutional destruction and the establishment of new institutions. A reform process imposes high costs of disorientation and economic burden (Kasper and Streit 1999). It is thus useful to observe the development of tax morale as dependent variable over time, controlling for many factors. It is interesting to analyse the development over time in various transition countries as countries started the course of transition with different histories and physical endowments. One of the most difficult processes is the transformation of social contracts. Stiglitz (1999) points out:

“If “reformers” simply destroy the old norms and constraints in order to “clean the slate” without allowing for the time-consuming processes of reconstructing new norms, then the new legislated institutions may well not take hold” (p. 9).

We are going to analyse tax morale over time in different transition countries using tax morale as dependent variable and thus controlling for many factors. Many countries we are going to evaluate as, e.g., Latvia, Lithuania, Poland, Romania, and Slovenia, are negotiating their accession to the European Union. In general, the accession intention has acted as a catalyst for a rapid tax reform move along western lines (see Martinez-Vazquez and McNab 2000). But we also are going to include countries with slow and inconsistent reform processes (Bulgaria and Russia). In order to control the development over time, we put all data together building a dummy variable for the newest World Values Survey series.

We are going to include dummy variables with data from the World Values Survey 1989-1993 as a reference group to capture the change. In general, we find a reduction in tax morale between both time periods with stronger effects in the FSU countries. Only Poland and Bulgaria show a tendency to an increase in tax morale over time. These results might indicate that the transition processes entailed costs in terms of tax morale for their citizens.

1. Former Soviet Union Countries

1. Russia

Russia was affected by a deep economic recession throughout the years in our analysis (see, e.g., Graham and Pettinato 2002). *Table A2* (see Appendix) reports that in all years we find a decline of the GDP. The 1997 GDP Index (1989=100) is 52.2, which indicates an important decay (see Kolodko 1999). Kasper and Streit (1999) stress that in the Former Soviet Union countries law and order have been strongly violated and not well protected. They argue that in many parts of Russia we do not find a rule of law tradition which helps the institutional transformation process. Stiglitz (1999) compares the development of Russia and China and points out that over the decade beginning in 1989 China’s GDP doubled, while Russia’s GDP almost halved. Graham and Pettinato (2002) report with data from the Russia Longitudinal Monitoring Survey for 1995 to 1998 that 77 percent of the population in the sample had income declines. In general, Russia’s development over time might have a negative influence on tax morale.

In Russia, we find a rapid privatisation in the years 1994 and 1995. However, Fisher and Sahay (2000) point out that Russia has lagged in the implementation of structural reforms and failed to solve its fiscal problems, which led to a large fiscal deficit with a collapse in 1998. They report a continuous decay of GDP Index during the transition time. Between 1991 and 1994 the output declined by almost 40 percent (Jeffries 1996). Looking back, Nerré (2001) points out that in Russia's tax culture the personal income tax has only played a minor role compared to indirect taxation. Of the total revenue collected, personal income revenue was less than 10 percent. Bahl and Wallich (1995) criticised the lack of clarity in the fiscal system, not providing sub-national governments with adequate resources to meet their preferences and not offering the central government possibilities to have a control over the fiscal policy. They plead for a higher assignment of sub-national taxes.

Levin and Satarov (2000) analyse corruption and institutions in Russia. They criticise that corruption is an integral part of Russia's economy. Corruption has the negative consequence that citizens reduce their trust in the authority. Levin and Satarov state that the degree of corruption exceeds the total expenditures on science, education, health care, culture, and art. In some industrial branches criminal groups spend up to 50% of their revenues to bribe officials (p. 115). The authors report that in 1995, 270 cases of illegal tax inspector activities were exposed (p. 123). Russia made first steps of privatisation without an efficient legal regulation. Without such a legal protection, entrepreneurs have an incentive to search for special arrangements with state officials. Despite the tendencies to a higher degree of autonomy at lower levels in Russia, the system remains highly centralised as regional shares and local revenues or expenditures are dictated by a higher level of government (Lavrov, Litwack and Sutherland 2000). Levin and Satarov (2000) criticise the central structure of the tax system, where the taxes collected regionally go first to the "federal coffers and then returns to the regions in the form of transfers" (p. 120). Such a system reduces transparency and the possibility to consider local citizens' preferences. Levin and Satarov, for example, bring an example where local highway police supervised by elected self-governments were less corrupt than their counterparts.

However, the *Transition Report 2000* stresses that Russia had a stabilisation process since 1999, with a favourable economic environment and a rapid recovery which opens the possibility for a "fresh start in the country's transition process" (p. 202).

Table 9 indicates that we can observe a decaying tendency of tax morale over time. Inhabitants in Russia had a lower probability of reporting the highest tax morale in 1995 than in 1991, with marginal effects of around 7 percentage points. However, the coefficient in Eq.

1 to 4 is not significant. But it should be noticed that the level of tax morale in 1990 was already lower than the average of the Former Soviet Union countries. Looking at the variables we find that trust in legal system and trust in the government have a significant positive effect on tax morale. An increase in the scale of trust in the government (legal system) rises the share of persons indicating the highest tax morale by 3.6 (3.7) percentage points. In Eq. 3 we have also included the social capital variable “trust other people”⁹. Paldam and Svendsen (2000) point out that this variable might be the best available measure of social capital. They argue that people who lived in dictatorships/totalitarian systems have learned to distrust other people and lost the interest to take initiative. For transition countries, such a negative social capital is a barrier for an economic development which might explain the low level of GDP compared to their physical and human capital potential. *Table 9* indicates that social capital has a positive effect on tax morale. Trusting rather than distrusting others increases the probability of stating that tax evasion is never justified by 3.7 percentage points.

As further variables we separately integrated pride and size of the town where people lived into an equation. Similar to earlier results we find for Russia that pride has a significantly positive effect on tax morale. People who live in a small village are in strong interaction with each others which enhances closeness. Everyone can actually come to know everyone else. Own choices can easily be adapted to the others’, as everybody’s choices are known well enough. Norms of reciprocity, fairness, and social identification might be developed. The social capital level increases and might be higher than in an “anonymous” society. Thus, it could be argued that social capital could have a positive effect on tax morale. On the other hand, bigger town sizes in transition economies go in line with a higher economic development, a higher living standard offering better economic opportunities. The results indicate that the bigger the town where someone lives, the lower tax morale.

Looking at the control variables we find that a higher age is correlated with a higher tax morale, and people who are divorced or live together have a significantly lower tax morale than singles. Finally, self-employed, part-time employed, and unemployed individuals have a lower tax morale than full-time employees. They might feel the financial restriction much more strongly.

⁹ “Generally speaking, would you say that most people can be trusted (1) or that you can’t be too careful in dealing with people” (0), dummy (TRUST=1, NO TRUST=0)?

Table 9
Tax Morale in Russia 1991 and 1995

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Depend. V.: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.310***	0.123	0.356***	0.142	0.307***	0.122	0.300***	0.119	0.307***	0.122
AGE 50-64	0.610***	0.242	0.653***	0.259	0.621***	0.247	0.580***	0.231	0.635***	0.252
AGE 65+	0.811***	0.322	0.928***	0.369	0.892***	0.354	0.819***	0.325	0.936***	0.372
FEMALE	0.007	0.003	0.008	0.003	-0.006	-0.002	-0.001	0.000	0.008	0.003
b) Marital Status										
MARRIED	0.008	0.003	0.006	0.002	0.027	0.011	0.014	0.006	-0.007	-0.003
LIVING TOGETHER	-0.215**	-0.085	-0.198**	-0.079	-0.195**	-0.078	-0.128*	-0.051	-0.167**	-0.066
DIVORCED	-0.262***	-0.104	-0.221***	-0.088	-0.212***	-0.084	-0.212***	-0.084	-0.245***	-0.098
SEPARATED	-0.068	-0.027	-0.100*	-0.040	-0.107*	-0.043	-0.132**	-0.053	-0.077	-0.031
WIDOWED	-0.052	-0.021	-0.074	-0.029	-0.015	-0.006	-0.049	-0.019	-0.084	-0.033
c) Employment Status										
PART TIME EMPLOYED	-0.153***	-0.061	-0.144***	-0.057	-0.138***	-0.055	-0.128***	-0.051	-0.155***	-0.062
SELFEMPLOYED	-0.356***	-0.141	-0.365***	-0.145	-0.407***	-0.162	-0.368***	-0.146	-0.322***	-0.128
UNEMPLOYED	-0.132***	-0.052	-0.128***	-0.051	-0.105***	-0.042	-0.121***	-0.048	-0.125***	-0.050
AT HOME	-0.128***	-0.051	-0.082	-0.033	-0.113**	-0.045	-0.071	-0.028	-0.132***	-0.052
STUDENT	-0.377***	-0.150	-0.327***	-0.130	-0.358***	-0.142	-0.371***	-0.148	-0.335***	-0.133
RETIRED	0.109***	0.043	0.099***	0.039	0.074**	0.030	0.085**	0.034	0.054	0.022
OTHER	-0.248	-0.098	-0.170**	-0.068	-0.247***	-0.098	-0.237***	-0.094	-0.282***	-0.112
d) Time Variable										
RUSSIA 1995	-0.198	-0.079	-0.165	-0.066	-0.202	-0.080	-0.223	-0.088	-0.184***	-0.073
e) Institutional Trust										
TRUST IN LEGAL SYSTEM	0.090***	0.036								
TRUST IN GOVERNMENT			0.047***	0.019						
e) Social Capital										
TRUST					0.092***	0.037				
f) Further Variables										
PRIDE							0.116***	0.046		
TOWN SIZE									-0.043***	-0.017
Observations	3542		3427		3479		3498		3639	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, RUSSIA 1991, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

2. Baltic States

Now, we are going to focus on Baltic states. In 1991 they have been the first countries under direct control of the Soviet regime to get their independency. During the Soviet period they have been a very prosperous region. Furthermore they were quite well prepared to reform the economies and were among the first FSU countries to introduce their own national currencies, free prices, and to sell off state enterprises. However, despite the Baltic countries enjoy now a relatively high growth rate, many citizens' living standards fell in the post-Communist years and the countries were affected by a high inflation rate (Thompson 2000). *Table A2* indicates a decline in the annual rate of GDP growth in the years 90-93. In 94-97 we see a recovery in all three Baltic States Estonia, Latvia, and Lithuania. Regarding the GDP index between 1989 and 1997, Estonia reached the best performance (see Kolodko 1999).

In all three countries we find a significantly lower tax morale in 1996 compared to 1990. We are going to start with Estonia.

2.1. Estonia

Thompson (2000) defines Estonia as the “tiger” among the Baltic states with the highest terms of success, followed by Latvia and Lithuania. According to Campos and Coricelli (2002) Estonia reported the lowest negative output growth between 1991-1997. Sub-national governments control only 15.4 percent of their revenues. This indicates a low revenue autonomy. The sub-national governments in Poland, for example, control 35 percent of their revenues. However, in Latvia and especially in Lithuania the fiscal decentralisation is even lower¹⁰. Estonia is the only Baltic state that offers the sub-national government the possibility to control a small part of the tax rate. However, the local taxes are still very small, almost of no relevance as revenue sources (see Kungla 1999). There have been no direct democratic movements after the independency in 1991. Taxpayers have neither initiative nor referendum rights. There is only an obligatory constitutional referendum (Gross and Kaufmann 2002).

¹⁰ In general, there is a difference between developing and developed countries. In developed countries sub-national governments have a higher control over the tax rate and in most cases the base can not be changed without local agreement (Ebel and Yilmaz 2001).

Table 10
Tax Morale in Estonia in 1990 and 1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent V.: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.198**	0.079	0.202**	0.080	0.200**	0.079	0.238***	0.094	0.208***	0.083
AGE 50-64	0.455***	0.181	0.461***	0.183	0.456***	0.181	0.540***	0.214	0.470***	0.186
AGE 65+	0.504***	0.200	0.457***	0.182	0.449***	0.178	0.355**	0.141	0.473***	0.188
FEMALE	0.187***	0.074	0.186***	0.074	0.188***	0.075	0.210***	0.083	0.186***	0.074
b) Marital Status										
MARRIED	-0.005	-0.002	-0.016	-0.006	-0.029	-0.012	0.005	0.002	-0.010	-0.004
LIVING TOGETHER	-0.153	-0.061	-0.144	-0.057	-0.179	-0.071	-0.193	-0.077	-0.163	-0.065
DIVORCED	-0.108	-0.043	-0.168	-0.067	-0.165	-0.065	-0.232	-0.092	-0.128	-0.051
SEPARATED	0.065	0.026	0.035	0.014	0.042	0.017	-0.121	-0.048	0.070	0.028
WIDOWED	0.189	0.075	0.209	0.083	0.197	0.078	0.253	0.100	0.203	0.081
c) Employment Status										
PART TIME EMPLOYED	-0.048	-0.019	-0.073	-0.029	-0.063	-0.025	-0.016	-0.006	-0.051	-0.020
SELFEMPLOYED	-0.545***	-0.217	-0.547***	-0.217	-0.555***	-0.220	-0.484***	-0.192	-0.527***	-0.209
UNEMPLOYED	-0.093	-0.037	-0.100	-0.040	-0.114	-0.045	-0.106	-0.042	-0.111	-0.044
AT HOME	-0.310	-0.123	-0.355*	-0.141	-0.344*	-0.136	-0.404*	-0.160	-0.338*	-0.134
STUDENT	-0.082	-0.033	-0.073	-0.029	-0.095	-0.038	-0.075	-0.030	-0.068	-0.027
RETIRED	0.179	0.071	0.200	0.079	0.223*	0.089	0.123	0.049	0.202*	0.080
OTHER	-0.180	-0.072	-0.212	-0.084	-0.192	-0.076	-0.143	-0.057	-0.175	-0.070
d) Time Variable										
ESTONIA 1996	-0.759***	-0.301	-0.761***	-0.302	-0.667***	-0.264	-0.580***	-0.229	-0.688***	-0.273
e) Institutional Trust										
TRUST IN LEGAL SYSTEM	0.188***	0.075								
TRUST IN GOVERNMENT			0.116***	0.046						
e) Social Capital										
TRUST					0.022	0.009				
f) Further Variables										
PRIDE							0.192***	0.076		
TOWN SIZE									-0.001	0.000
Observations	1899		1895		1913		1654		1932	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, ESTONIA 1990, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Table 10 presents the results. We find a reduction in tax morale between 1990 and 1996. This suggests that inhabitants in Estonia had a significantly lower probability of reporting the highest tax morale in 1996 than in 1990. The marginal effects of around 30 percentage points are very high. Similar to the findings in Russia, trust in government, trust in the legal system, and pride have a significant positive effect on tax morale. Also an increase in the level of age has a positive effect on tax morale. We find that the marginal effects increase from a lower age group to a higher one. Furthermore, self-employers report a significantly lower tax morale than full-time employees. Contrary to Russia the coefficient for the variable FEMALE is now significant; females report a significantly higher tax morale than males. Finally, the coefficients of the social capital variable TRUST and the variable TOWN SIZE are not significant.

2.2. Latvia

According to Thompson (2000) Latvia is the most industrialised Baltic country. The state was able to promote the privatisation of enterprises. However, in 1992 Latvia was confronted with inflation problems. In 1995 Latvia suffered a banking crisis with many banks collapsing. The highest negative GDP rates can be found in the same years (-34.9 percent), but in 1994 the GDP growth was positive (Jeffries 1996). In 1999 Latvia could start EU accession negotiations. The *Transition Report 2000* mentions that for Latvia, it will be important to maintain macroeconomic stability under the restriction of large current account deficits and a low level of foreign direct investments.

Latvia has stronger direct democratic elements than Estonia. 10 percent of the electorate can initiate a change in the constitution or a new law, and parliament decisions can be subject to a referendum. But we find strong restrictive rules with a 50 percent participation requirement and with the exclusion of certain issues (Gross and Kaufmann 2002).

Table 11 presents the results, which are in line with the findings in Estonia. We also find a great difference between 1990 and 1996. Trust in legal system and the government, pride and a higher age lead to a higher tax morale. On the other hand, part-time employees, self-employed and unemployed people report a lower tax morale. However, *Table 11* shows that contrary to the findings in Estonia and in line with Russia, a bigger town size leads to a significantly lower tax morale. The social capital variable TRUST is not significant.

Table 11
Tax Morale in Latvia in 1990 and 1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent V.: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.277***	0.110	0.256***	0.101	0.252***	0.100	0.159**	0.063	0.250***	0.099
AGE 50-64	0.586***	0.232	0.578***	0.229	0.562***	0.223	0.508***	0.202	0.569***	0.226
AGE 65+	0.734***	0.290	0.720***	0.285	0.723***	0.287	0.576***	0.229	0.729***	0.289
FEMALE	0.208***	0.082	0.226***	0.089	0.216***	0.086	0.170***	0.068	0.222***	0.088
b) Marital Status										
MARRIED	0.038	0.015	0.054	0.021	0.051	0.020	0.103	0.041	0.051	0.020
LIVING TOGETHER	-0.203	-0.080	-0.204	-0.081	-0.215	-0.085	-0.173	-0.069	-0.223*	-0.089
DIVORCED	-0.042	-0.017	-0.063	-0.025	-0.046	-0.018	-0.048	-0.019	-0.032	-0.013
SEPARATED	-0.055	-0.022	-0.064	-0.025	-0.053	-0.021	-0.034	-0.013	-0.071	-0.028
WIDOWED	0.032	0.013	0.030	0.012	0.022	0.009	0.037	0.015	0.057	0.022
c) Employment Status										
PART TIME EMPLOYED	-0.251**	-0.099	-0.251***	-0.099	-0.251***	-0.100	-0.321***	-0.128	-0.263***	-0.104
SELFEMPLOYED	-0.456***	-0.181	-0.447***	-0.177	-0.461***	-0.183	-0.478***	-0.190	-0.454***	-0.180
UNEMPLOYED	-0.256**	-0.101	-0.250**	-0.099	-0.235**	-0.093	-0.173	-0.069	-0.250**	-0.099
AT HOME	-0.100	-0.040	-0.127	-0.051	-0.065	-0.026	-0.049	-0.020	-0.103	-0.041
STUDENT	-0.145	-0.058	-0.119	-0.047	-0.131	-0.052	-0.146	-0.058	-0.120	-0.048
RETIRED	0.096	0.038	0.082	0.033	0.141	0.056	0.127	0.051	0.106	0.042
OTHER	-0.018	-0.007	-0.015	-0.006	-0.073	-0.029	-0.023	-0.009	-0.053	-0.021
d) Time Variable										
LATVIA 1996	-0.798***	-0.316	-0.854***	-0.338	-0.791***	-0.314	-0.626***	-0.249	-0.794***	-0.315
e) Institutional Trust										
TRUST IN LEGAL SYSTEM	0.205***	0.081								
TRUST IN GOVERNMENT			0.147***	0.058						
e) Social Capital										
TRUST					0.043	0.017				
f) Further Variables										
PRIDE							0.190***	0.075		
TOWN SIZE									-0.031***	-0.012
Observations	1938		1941		1953		1628		1989	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LATVIA 1990, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

2.3.Lithuania

Lithuania introduced the personal income tax in 1990. We can observe a strong centralised tax administration. The central government sets the tax rate and the base. 91 percent of the sub-national governments' revenues derive from shared taxes set and controlled by the central government. Thus, sub-national governments have very little revenue autonomy, a situation which is particular to the Baltic countries (Ebel and Yilmaz 2001). In the early 90s strong privatisation movements resulted in the sale of 1.586 state enterprises (Jeffries 1996). After the introduction of its own currency in 1993, inflation ran up to 1.400 percent (Thompson 2000). Thompson evaluates Lithuania as the poorest and least industrialised Baltic state. In the years 1990 to 1993, the GDP growth was negative, while in 1994 it was positive. The unemployment rate rose from 1.9 to 4.2 in 1994 (Jeffries 1996). The *Transition Report 2000* mentions that the macroeconomic performance and the external balances are improving. In Lithuania we find the democratic elements of the obligatory constitutional referendum, the popular initiative, and the facultative referendum. However, similar to Latvia, the participation quorum is 50 percent, which reduces the incentive of participation.

The findings presented in *Table 12* are consistent with the findings in the other Baltic states. Lithuania has the lowest marginal effects regarding the time dummy variable LITHUANIA 1996, indicating the lowest decrease in tax morale. However, in general the decay between 1990 and 1997 in the Baltic countries is significant and strong.

Table 12
Tax Morale in Lithuania in 1990 and 1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Dependent V.: Tax Morale</i>								
Independent Variables	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Demographic Factors								
AGE 30-49	0.208***	0.083	0.188**	0.075	0.221***	0.088	0.172**	0.069
AGE 50-64	0.606***	0.242	0.575***	0.229	0.604***	0.241	0.540***	0.215
AGE 65+	0.722***	0.288	0.778***	0.310	0.804***	0.321	0.654***	0.261
FEMALE	0.287***	0.115	0.292***	0.116	0.295***	0.118	0.278***	0.111
b) Marital Status								
MARRIED	0.042	0.017	0.018	0.007	0.039	0.016	0.048	0.019
LIVING TOGETHER	-0.345*	-0.138	-0.379**	-0.151	-0.388**	-0.155	-0.389**	-0.155
DIVORCED	-0.120	-0.048	-0.095	-0.038	-0.111	-0.044	-0.073	-0.029
SEPARATED	0.103	0.041	0.178	0.071	0.079	0.031	0.114	0.045
WIDOWED	-0.182	-0.073	-0.150	-0.060	-0.133	-0.053	-0.048	-0.019
c) Employment Status								
PART TIME EMPLOYED	-0.137*	-0.055	-0.141*	-0.056	-0.137*	-0.055	-0.135*	-0.054
SELFEMPLOYED	-0.691***	-0.276	-0.699***	-0.279	-0.666***	-0.266	-0.648***	-0.258
UNEMPLOYED	-0.159	-0.063	-0.152	-0.061	-0.147	-0.059	-0.118	-0.047
AT HOME	-0.163	-0.065	-0.199	-0.080	-0.166	-0.066	-0.247	-0.098
STUDENT	-0.313*	-0.125	-0.342***	-0.136	-0.319**	-0.127	-0.385***	-0.153
RETIRED	-0.011	-0.004	0.045	0.018	0.043	0.017	0.035	0.014
OTHER	-0.238	-0.095	-0.218	-0.087	-0.214	-0.085	-0.231	-0.092
d) Time Variable								
LITHUANIA 1996	-0.340***	-0.136	-0.406***	-0.162	-0.361***	-0.144	-0.226***	-0.090
e) Institutional Trust								
TRUST IN LEGAL SYSTEM	0.215***	0.086						
TRUST IN GOVERNMENT			0.093**	0.037				
e) Social Capital								
TRUST					-0.030	-0.012		
f) Further Variable								
PRIDE							0.256***	0.102
Observations	1794		1777		1838		1799	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LITHUANIA 1990, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

3. Belarus

The unemployment rate in the years 1990 to 1994 was at a low rate (2.1 percent in 1994). A strong decay in the GDP growth rate has been found in 1994 (Jeffries 1996). However, Belarus's decline in the GDP growth rate was lower than in other countries as Georgia, Armenia, Azerbaijan, or Latvia, despite the slow stabilisation and reform process (see Fisher and Sahay 2002). Similar to the Baltic countries we do not find an increase in the average annual rate of GDP growth in the period 94-97 (see *Table A2*). Fisher and Sahay (2002) argue that the main explanation for the growth performance of Belarus is its closeness in trade with Russia, which helped to preserve a certain industrial production. But, Belarus was strongly affected by the Russian crisis in 1998. The *Transition Report 2000* criticises that Belarus has made little progress with the industrial restructuring. Relatively little private sector activities can be observed compared with other transition countries. In 1999 and 2000 we find a positive GDP growth but poverty is increasing. The 1997 GDP index (1989=100) was 56.8 (see *Table A2*)

The results in *Table 13* are similar to the ones found in the other transition economies with a significantly lower tax morale in 1996 compared to 1990 and a strong effect of the factors trust in government, trust in the legal system, pride, age, and self-employment on tax morale. Furthermore, we find that being married rather than single increases tax morale. It should be noticed that the marginal effects of the variable BELARUS 96 is lower than the ones in the Baltic countries.

Table 13
Tax Morale in Belarus in 1990 and 1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Variable</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>								
AGE 30-49	0.198***	0.078	0.184***	0.072	0.222***	0.087	0.189***	0.074
AGE 50-64	0.431***	0.168	0.414***	0.162	0.479***	0.188	0.435***	0.170
AGE 65+	0.590***	0.231	0.562***	0.220	0.632***	0.248	0.667***	0.260
FEMALE	-0.026	-0.010	-0.021	-0.008	-0.025	-0.010	-0.009	-0.004
<i>b) Marital Status</i>								
MARRIED	0.273***	0.107	0.228***	0.089	0.252***	0.099	0.213***	0.083
LIVING TOGETHER	0.076	0.030	0.116	0.045	0.101	0.040	0.007	0.003
DIVORCED	0.230**	0.090	0.215*	0.084	0.238**	0.093	0.195*	0.076
SEPARATED	0.239	0.093	0.292	0.114	0.196	0.077	0.154	0.060
WIDOWED	0.313***	0.122	0.304**	0.119	0.322***	0.126	0.297**	0.116
<i>c) Employment Status</i>								
PART TIME EMPLOYED	-0.037	-0.015	-0.021	-0.008	-0.018	-0.007	-0.063	-0.024
SELFEMPLOYED	-0.443***	-0.173	-0.325**	-0.127	-0.481***	-0.189	-0.405**	-0.158
UNEMPLOYED	0.055	0.021	0.052	0.020	0.047	0.018	0.145	0.057
AT HOME	-0.174	-0.068	-0.064	-0.025	-0.166	-0.065	-0.030	-0.012
STUDENT	-0.293*	-0.114	-0.284*	-0.111	-0.307*	-0.120	-0.352**	-0.137
RETIRED	0.104	0.041	0.065	0.026	0.126	0.049	0.077	0.030
OTHER	-0.023	-0.009	-0.030	-0.012	-0.046	-0.018	-0.044	-0.017
<i>d) Time Variable</i>								
BELARUS 1996	-0.232***	-0.091	-0.280***	-0.110	-0.174***	-0.068	-0.159***	-0.062
<i>e) Institutional Trust</i>								
TRUST IN LEGAL SYSTEM	0.200***	0.078						
TRUST IN GOVERNMENT			0.275***	0.108				
<i>e) Social Capital</i>								
TRUST					-0.046	-0.018		
<i>f) Further Variable</i>								
PRIDE							0.231***	0.090
Observations	2750		2719		2739		2693	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, BELARUS 1990, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

2. Central and Eastern Europe

1. Poland

Poland is one of the leading countries in the transformation process. Some reforms have already been made during the Communist era in the 80s as, e.g., the privatisation of the agriculture. Kasper and Streit (1999) point out that Poland's strategy after the fall of the Berlin Wall was a continuous and systematic institutional transformation without being too fast as in other countries. We find a strong economic growth in the years 1994 to 1997. Between 1989 and 1997 Poland had an average annual rate of GDP growth of 1.6, which was the highest among the transition countries (see *Table A2*). Thus, it is not surprising that Poland in our analysis, contrary to the FSU countries, improved tax morale over time. Kornai (2000) stresses that the main explanations for the success of development in Poland were the successful macro stabilisation, the bottom-up growth of the private sector, and the inflow of foreign capital. Poland was the first transition country after Hungary that reformed its income tax (Martinez-Vazquez and McNab 2000).

Bejaković (2000) describes the tax administration structure in Poland. It is divided in three levels. The lowest level consists of 344 tax offices where taxes are collected and assessed, tax audits are carried out, and penal tax cases are investigated. The second level (49 tax chambers) controls, among other things, the veracity of the tax bases. The highest level (Ministry of Finance) is responsible for the development of the income tax system and the collections of taxes. The structure shows a certain decentralisation of the administration. Barbone and Hicks (1995) define Poland as the "flagship of Central and Eastern Europe" in the decentralisation process. Under the Solidarity government a law passed which gave local governments legally protected autonomy. However, the central government maintained parts of revenue caps including, e.g., the real estate tax. Barbone and Hicks point out that local governments received shared personal income taxes which gave them a certain possibility set to fulfill local demands. The fiscal decentralisation is insofar restricted as they were not allowed to impose surcharges on shared national taxes which would give them control over the taxes.

In line with these decentralisation tendencies we find a democratic spirit in Poland. In 1987, two reform referendums helped make the Communist era collapse. However, similar to other transition countries, a high participation quorum reduces the effect of direct democratic

participation. Furthermore, the government has the possibility to deny citizens' request using the constitutional veto (Gross and Kaufmann 2002).

Table 14
Tax Morale in Poland in 1989 and 1997

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Dependent V. Tax Morale</i>	<i>Coeff.</i>		<i>Coeff.</i>		<i>Coeff.</i>		<i>Coeff.</i>	
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Demographic Factors								
AGE 30-49	0.295***	0.117	0.263***	0.105	0.284***	0.113	0.269***	0.107
AGE 50-64	0.577***	0.229	0.542***	0.216	0.574***	0.228	0.530***	0.210
AGE 65+	0.711***	0.282	0.713***	0.283	0.722***	0.287	0.663***	0.263
FEMALE	0.082	0.033	0.102*	0.041	0.106*	0.042	0.100*	0.040
EDUCATION	0.026	0.010	0.033*	0.013	0.032*	0.013	0.027	0.011
b) Marital Status								
MARRIED	0.003	0.001	0.010	0.004	-0.001	-0.001	0.015	0.006
LIVING TOGETHER	0.189	0.075	0.226	0.090	0.296	0.118	0.242	0.096
DIVORCED	0.060	0.024	0.103	0.041	-0.017	-0.007	0.046	0.018
SEPARATED	-0.123	-0.049	-0.131	-0.052	0.002	0.001	-0.018	-0.007
WIDOWED	0.051	0.020	-0.013	-0.005	-0.033	-0.013	0.010	0.004
c) Economic Situation								
UPPER CLASS	0.053	0.021	0.048	0.019	0.080	0.032	0.102	0.040
UPPER MIDDLE CLASS	0.076	0.030	0.085	0.034	0.036	0.014	0.072	0.028
LOWER MIDDLE CLASS	0.135	0.054	0.184	0.073	0.181	0.072	0.167	0.066
WORKING CLASS	0.143	0.057	0.173	0.069	0.157	0.063	0.160	0.064
d) Time Variable								
POLAND 1997	0.111	0.044	0.045	0.018	0.086	0.034	0.121	0.048
e) Institutional Trust								
TRUST IN LEGAL SYSTEM	0.074**	0.030						
TRUST IN GOVERNMENT			0.097***	0.039				
e) Social Capital								
TRUST					-0.053	-0.021		
f) Further Variable								
PRIDE							0.117**	0.046
Observations	1706		1692		1716		1805	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, POLAND 1989, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Table 14 shows that the coefficient of the time dummy variable is not negative which means that we do not find a decrease of tax morale over time. This is contrary to the results obtained for the FSU economies, but in line with the positive transformation process in Poland. However, similar to the countries before, trust in the legal system and the government, pride, and a higher age have a significant positive effect on tax morale. The data set from Poland offered the opportunity to also include individuals' economic situation, which does not seem to influence tax morale significantly.

2. Bulgaria

Bulgaria's transition process began in 1991 with first liberalisation efforts (e.g., elimination of quantitative restriction on foreign trade, reduction of producers' and consumers' subsidies). A main problem for Bulgaria was the strong dependency on the COMECON. Around 80 percent of the exports went to other COMECON members, 60% to the Soviet Union (Bristow 2000). Bulgaria fell into a depression with a strong decline in the beginning of the 90s. Between 1989 to 1997 the real GDP fell by 37.2% (see *Table A2*). Unemployment increased from 2% (1991) to 14% (1997). Furthermore, the real living standard decreased which reduced consumption (Bristow 2000). Bogetić (1995) points out that the initial transformation conditions in Bulgaria were more similar to FSU countries than to CEE countries. Bulgaria had a strong decline in revenues in the first years after the collapse of traditional tax bases, similar to the countries Albania, Moldova, Lithuania, Armenia, Georgia. However, at the end of 1994 considerable efforts have been made to liberalise the economy. Thus, output had started to grow. But Bogetić and Hassan (1997) criticise the income tax development in Bulgaria. The 1993 amendments have complicated the tax system and increased the marginal tax rates from 40 to 52%. Martinez-Vazquez (1995) analysed the decentralisation process in Bulgaria. He stresses that sub-national governments should have an adequate share of local revenues. The own responsibility for the provision of public goods would increase governments' efficiency. However, the author states that in 1994 Bulgaria has already established good revenue assignment systems as, e.g., local own-source revenues.

Bulgaria has no democratic tradition and we do not find an integration of direct democratic elements in the last ten years of transition (Gross and Kaufmann 2002).

Table 15
Tax Morale in Bulgaria in 1990 and 1997

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent V.: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.280***	0.107	0.277***	0.106	0.276***	0.104	0.259***	0.099	0.248***	0.094
AGE 50-64	0.449***	0.171	0.432***	0.165	0.451***	0.171	0.370***	0.142	0.405***	0.154
AGE 65+	0.488***	0.186	0.498***	0.191	0.559***	0.211	0.397**	0.152	0.493***	0.188
FEMALE	0.078	0.030	0.084	0.032	0.149**	0.056	0.075	0.029	0.092	0.035
b) Marital Status										
MARRIED	0.094	0.036	0.113	0.043	0.177*	0.067	0.040	0.015	0.094	0.036
LIVING TOGETHER	-0.372	-0.142	-0.370	-0.142	-0.356	-0.134	-0.272	-0.105	-0.347	-0.132
DIVORCED	-0.025	-0.009	-0.027	-0.010	0.069	0.025	-0.075	-0.029	-0.058	-0.022
SEPARATED	0.301	0.115	0.379	0.145	0.174	0.066	0.401	0.154	0.317	0.121
WIDOWED	0.028	0.011	0.032	0.012	-0.009	-0.004	-0.059	-0.023	-0.028	-0.011
c) Employment Status										
PART TIME EMPLOYED	-0.125	-0.048	-0.106	-0.041	-0.151	-0.057	-0.142	-0.054	-0.066	-0.025
SELFEMPLOYED	-0.221	-0.084	-0.287	-0.110	-0.416*	-0.157	-0.235	-0.090	-0.279	-0.106
UNEMPLOYED	-0.065	-0.025	-0.037	-0.014	-0.067	-0.025	-0.111	-0.043	-0.091	-0.035
AT HOME	-0.029	-0.011	0.034	0.013	-0.109	-0.041	0.073	0.028	-0.034	-0.013
STUDENT	-0.229	-0.088	-0.247	-0.094	-0.235	-0.089	-0.312	-0.120	-0.221	-0.084
RETIRED	0.016	0.006	0.030	0.012	-0.019	-0.007	0.029	0.011	0.020	0.008
OTHER	0.159	0.061	0.161	0.062	0.167	0.063	0.073	0.028	0.167	0.064
d) Economic Situation										
UPPER CLASS	-0.211	-0.080	-0.179	-0.068	-0.305	-0.115	-0.314	-0.121	-0.317	-0.121
UPPER MIDDLE CLASS	0.047	0.018	0.056	0.022	-0.012	-0.005	-0.037	-0.014	-0.017	-0.006
LOWER MIDDLE CLASS	-0.108	-0.041	-0.104	-0.040	-0.137	-0.052	-0.181	-0.070	-0.190	-0.072
WORKING CLASS	-0.024	-0.009	-0.023	-0.009	-0.156	-0.059	-0.117	-0.045	-0.131	-0.050
e) Time Variable										
BULGARIA 1997	0.232***	0.088	0.159**	0.061	0.275***	0.104	0.099	0.038	0.230***	0.088
e) Institutional Trust										
TRUST IN LEGAL SYSTEM	0.085**	0.032								
TRUST IN GOVERNMENT			0.086***	0.033						
e) Social Capital										
TRUST					0.164**	0.062				
f) Further Variable										
PRIDE							0.240***	0.092		
TOWN SIZE									-0.015	-0.006
Observations	1810		1813		1669		1759		1851	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, BULGARIA 1990, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Surprisingly, the results in *Table 15* show that Bulgaria is the only transition country with a significant tendency of increasing tax morale over time. Other factors that significantly improve tax morale are trust in the government and the legal system, pride, and a higher age. Looking at these factors, there seems to be no difference between FSU and CEE countries. In Bulgaria similar to Russia we find that trusting rather than distrusting others increases the probability of stating that tax evasion is never justifiable. In line with the findings in Poland we cannot observe a significant difference between the reference economic classes and the others. We find the tendency that a rural person has a lower tax morale, but the coefficient is not significant. Hassan and Bogetić (1996, p. 27) report that urban households pay higher income taxes (5.3% of their per capita income) than rural households (2.4 %).

2. Slovenia

According to Gray (2000) Slovenia is a good example of economic success. It is the richest and most developed country in Central and Eastern Europe with a relatively high standard of living (it doubles that of Hungary). During the Communist regime it had a quite liberal regime. Many politicians who were governing Slovenia before independency are still participating in the political process (Gray 2000). Contrary to many countries, the Slovenia GDP in 1997 had almost the level of the GDP in 1989 (see, e.g., *Table A2* or Fischer and Sahay 2000).

Gross and Kaufmann (2002) define Slovenia as one of the “new I&R (Initiative & Referendum) countries in Europe” (p. 16, parenthesis added). With the facultative referendum citizens can subject to the vote all laws passed by the Parliament. Citizens have also a non-binding initiative. However, in Slovenia we also find a 50 percent quorum and the restriction of popular rights solely to legislation, mechanisms that limit direct democratic instruments (Gross and Kaufmann 2002).

Slovenia is the only CEE economy in our country analysis that shows in almost all equations a significantly lower tax morale over time (see *Table 16*). Other results are in line with the findings in other countries.

Table 16
Tax Morale in Slovenia in 1992 and 1995

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Dependent V.: Tax Morale</i>								
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>								
AGE 30-49	0.278***	0.105	0.298***	0.113	0.323***	0.122	0.287***	0.109
AGE 50-64	0.434***	0.164	0.423***	0.161	0.481***	0.182	0.463***	0.176
AGE 65+	0.619***	0.234	0.589***	0.223	0.638***	0.242	0.659***	0.250
FEMALE	0.299***	0.113	0.293***	0.111	0.326***	0.123	0.308***	0.117
<i>b) Marital Status</i>								
MARRIED	0.143	0.054	0.170*	0.066	0.143	0.054	0.160*	0.061
LIVING TOGETHER	-0.092	-0.035	-0.057	-0.022	-0.041	-0.016	-0.103	-0.039
DIVORCED	0.203	0.077	0.234	0.089	0.216	0.082	0.192	0.073
SEPARATED	-0.133	-0.050	-0.070	-0.026	-0.028	-0.011	-0.131	-0.050
WIDOWED	0.153	0.058	0.179	0.068	0.192	0.073	0.176	0.067
<i>c) Employment Status</i>								
PART TIME EMPLOYED	-0.020	-0.008	0.055	0.021	-0.064	-0.024	-0.022	-0.008
SELFEMPLOYED	-0.290*	-0.110	-0.283*	-0.107	-0.275*	-0.104	-0.327**	-0.124
UNEMPLOYED	-0.127	-0.048	-0.114	-0.043	-0.003	-0.001	-0.086	-0.033
AT HOME	-0.087	-0.033	-0.104	-0.039	-0.149	-0.057	-0.138	-0.052
STUDENT	-0.383***	-0.145	-0.359**	-0.136	-0.324**	-0.123	-0.357**	-0.135
RETIRED	-0.048	-0.018	-0.019	-0.007	-0.123	-0.046	-0.082	-0.031
OTHER	-0.092	-0.035	-0.046	-0.018	0.027	0.010	-0.051	-0.019
<i>d) Economic Situation</i>								
UPPER CLASS	-0.306	-0.116	-0.309	-0.117	-0.206	-0.078	-0.311	-0.118
UPPER MIDDLE CLASS	-0.207	-0.078	-0.189	-0.072	-0.206	-0.078	-0.205	-0.078
LOWER MIDDLE CLASS	-0.110	-0.042	-0.105	-0.040	-0.085	-0.032	-0.106	-0.040
WORKING CLASS	-0.140	-0.053	-0.131	-0.05	-0.133	-0.051	-0.150	-0.057
<i>e) Time Variable</i>								
SLOVENIA 1995	-0.426***	-0.161	-0.441***	-0.167	-0.462***	-0.177	-0.457	-0.173
<i>e) Institutional Trust</i>								
TRUST IN LEGAL SYSTEM	0.065*	0.025						
<i>e) Social Capital</i>								
TRUST			-0.029	-0.011				
<i>f) Further Variable</i>								
PRIDE					0.212***	0.080		
TOWN SIZE							0.003	0.001
Observations	1874		1845		1792		1896	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, SLOVENIA 1992, NO TRUST. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

In general, the analysis in the different countries indicates that there is the tendency for tax morale to decrease over time. The effects seem to be stronger in the FSU economies than in CEE. The results obtained from the variables TRUST IN GOVERNMENT, TRUST IN THE LEGAL SYSTEM and PRIDE are robust throughout all countries showing a positive effect on tax morale. On the other hand, the coefficient of the variable TRUST is significant only in the countries Russia and Bulgaria. Similar, the effect of the town size is mixed, but shows the tendency that living in a bigger town with more inhabitants reduces tax morale. Looking at the demographic variables we find the robust result that a higher age has a positive effect on tax morale. Furthermore, in many countries females have a significantly higher tax morale than males and self-employed a significantly lower tax morale than full-time employees.

VI. CONCLUSIONS

In their survey Campos and Coricelli (2002) stress that in the first years of the transformation process the output fell, the labour moved away and physical capital stock shrank. The rapid collapse of institutional structures produced a vacuum in many countries, followed by large social costs, especially in terms of worsening income inequality and poverty rates. In a shift from a centrally controlled to a market economy the fiscal system has to be reformed (e.g., income taxing). As the population mostly was not aware of taxes or had no perception of the tax burden during the planned socialism, reforms might have repercussions on tax morale and tax compliance. As Martinez-Vazquez and McNab (2000) point out, voluntary compliance and self-filing, two important pillars in a modern tax system were absent just after the planned socialism.

Can we also observe a decay of tax morale? Actually, our findings indicate decreasing tax morale tendencies over time, with stronger effects in FSU countries than in CEE countries. These tendencies indicate that many countries have not succeeded to design tax systems, tax administrations, or government structures that taxpayers trust. A profound transformation of the tax system with an increase of the tax burden can enhance the self-justification for individuals to reduce tax morale and to not comply.

Our empirical findings in all countries indicate that increasing individuals' trust in the government and the legal system has a significant positive effect on tax morale. The transition process gives the opportunity to build new trustworthy institutions. Our results show that tax

administration and the government are forced to drastically change their structures and their relationship with taxpayers. As Casanegra de Jantscher et al. (1992) pointed out ten years ago:

“A major challenge for countries in transition will be to develop tax systems that facilitate rather than complicate compliance” (p. 140).

It seems that transition countries have to work on that goal as new institutional conditions are not created in a few years. The role of the state is a key determinant in the development of tax morale. Our empirical findings indicate that trust in the government and the legal system have a positive effect on tax morale. As we find a decay of tax morale in the transition process, reforms are needed concerning the political institutions. More direct democratic participation might be a key instrument to increase tax morale. It raises trust and honesty, improves social outcomes (Frey 2002) and reduces corruption (Levin and Satarov 2000).

Institutional arrangements which increase tax morale are necessary to stabilise individuals' tax compliance behaviour. Transition countries have the shortcoming that they do not provide their sub-national governments with much fiscal autonomy, allowing them to set their own tax rates or define the tax base (Bird et al. 1995). A higher fiscal decentralisation (local tax autonomy) would have the advantage that citizens' preferences can be better met. Decentralisation moves the government closer to the people. Thus, political and fiscal autonomy are two of the most important elements for a national transition process. Both institutions buttress each others. They might help to get more transparency regarding how government spends the tax revenue and help to build a tax system respecting taxpayers' preferences. If the transition process does not integrate taxpayers actively, tax morale might decrease. A decrease of tax morale can cause a negative spiral. The more a taxpayer believes that others have a low tax morale, the lower his/her moral costs will be to behave dishonestly. Thus, tax morale erodes. Furthermore, the tax system must be visible to local taxpayers. The income tax is a good instrument for a local structure.

It is interesting to notice that our data yields evidence that socio-demographic factors influence tax morale. Getting older has a positive effect on tax morale. Females report a significantly higher tax morale than males. Married people have the tendency to a higher tax morale than singles. Self-employed have a lower tax morale than full-time employees. This result is not surprising, especially in transition countries where self-employed individuals are confronted with and restricted by high transaction costs imposed by inefficient government

activities¹¹. The analysis of tax morale development over time offers a pessimistical view regarding the transition process. Pejovich (2000) stresses that the transition process started on the wrong foot:

“First, intellectuals and political leaders in the West interpreted the end of socialism in Eastern Europe to be a vote for capitalism. Second, neoclassical equilibrium analysis, which is a much closer substitute for *dirigisme* than for the spontaneous development of new rules of the game, dominated the transition debate” (p. 8).

Our empirical analysis of tax morale is strongly based on attitude questions. Future research could try to get data on institutions based on objective criteria and connect it to tax morale. In general, the paper’s approach using tax morale as dependent variable to analyse transition countries is novel and offers new challenges for further research attempts. To get robust findings, more tax morale indicators to reduce subjective components and more surveys are necessary. One key framework will be to analyse the relation between tax morale and tax evasion in transition countries.

¹¹ Djankov et al. (2000) show with data from 75 countries that in general heavier regulation of entry goes in line with a higher corruption and a higher shadow economy. On the other hand, countries with more democratic and limited governments have less entry regulations.

APPENDIX

Table A1
Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
EDUCATION	<p>POLAND</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. Some primary 2. Complete primary 3. Vocational 4. Some high school 5. High school grad 6. Some university 7. University grad
SATISFACTION	All things considered, how satisfied are you with your life as a whole these days? (scale 1 = dissatisfied to 10=satisfied)
HAPPINESS	Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)
PRIDE	<p>How proud are you to be? (enter your own nationality)</p> <ol style="list-style-type: none"> 1. Not at all proud 2. Not very proud 3. Quite proud 4. very proud
TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
TRUST IN LEGAL SYSTEM	Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)

SATISFACTION WITH NATIONAL OFFICERS	How satisfied are you with the way the people now in national office are handling the country's affairs ? Would you say you are very satisfied (4), fairly satisfied (3), fairly dissatisfied (2) or very dissatisfied (1) (scale 1 to 4).
EVALUATION OF THE POLITICAL SYSTEM	Where on a score from 1 to 10 would you put the political system as it is today (1=very bad, 10=very good).
TRUST	Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? 1. Most people can be trusted 2. Can't be too careful
PRO DEMOCRACY1	Would you say that having a democratic political system is a very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country (scale 1 to 4).
PRO DEMOCRACY2	Democracy may have problems but it's better than any other form of government (4=strongly agree, 1=strongly disagree).
TOWN SIZE	Size of town: 1. Under 2.000 2. 2.000 – 5.000 3. 5 – 10.000 4. 10 – 20.000 5. 20 – 50.000 6. 50 – 100.000 7. 100 – 500.000 8. 500.000 and more

Source: Inglehart et al. (2000).

Table A2
GDP in Transition Economies During the Years 1990-97

countries	Years of GDP decline	Average Annual Rate of GDP growth		1997 GDP Index (1989=100)
		1990-1993	1994-1997	
<i>Former Soviet Union</i>				
Russia	7	-10.1	-5.3	52.2
Estonia	5	-9.7	4.1	77.9
Latvia	4	-13.8	2.2	56.8
Lithuania	5	-18.3	0.5	42.8
Belarus	6	-5.4	-2.6	70.8
<i>Central/East Europe</i>				
Poland	2	-3.1	6.3	111.8
Bulgaria	6	-7.4	-3.6	62.8
Slovenia	3	-3.9	4.0	99.3

Source: Kolodko (1999, p. 4).

Table A3
Summary of the Main Findings

Country	Variables	Effect on tax morale
TRANSITION COUNTRIES (POOLED)	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	MARRIED	married people have a higher tax morale than singles
	SELFEMPLOYED	self-employed have a lower tax morale than full-time employees
	REGION	CEE has a higher tax morale than FSU
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	SATISFACTION WITH NATIONAL OFFICERS	positive effect
	PRIDE	positive effect
RUSSIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	SELFEMPLOYED	Self-employed have a lower tax morale than full-time employees
	TIME FACTOR	lower tax morale in 1995 compared to 1990 (not significant)
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
ESTONIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	SELFEMPLOYED	self-employed have a lower tax morale than full-time employees
	TIME FACTOR	lower tax morale in 1996 compared to 1990
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
LATVIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	SELFEMPLOYED	self-employed have a lower tax morale than full-time employees
	TIME FACTOR	lower tax morale in 1996 compared to 1990
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
LITHUANIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	SELFEMPLOYED	self-employed have a lower tax morale than full-time employees
	TIME FACTOR	lower tax morale in 1996 compared to 1990
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
BELARUS	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	SELFEMPLOYED	self-employed have a lower tax morale than full-time employees
	TIME FACTOR	lower tax morale in 1996 compared to 1990
	TRUST IN GOVERNMENT	positive effect

	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
POLAND	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	TIME FACTOR	higher tax morale in 1997 compared to 1989 (not significant)
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
BULGARIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	TIME FACTOR	higher tax morale in 1997 compared to 1990
	TRUST IN GOVERNMENT	positive effect
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect
SLOVENIA	AGE	positive effect
	FEMALE	females report a higher tax morale than males
	TIME FACTOR	higher tax morale in 1995 compared to 1992
	TRUST IN LEGAL SYSTEM	positive effect
	PRIDE	positive effect

REFERENCES

- Alm, J. and J. Martinez-Vazquez (2001). Societal Institutions and Tax Evasion in Developing and Transitional Countries, Conference Paper in Honor of Richard Bird, Public Finance in Developing and Transition Countries, April 4-6, Atlanta.
- Anderson, J. E. and L. Carasciuc (1999). Tax Evasion in a Transition Economy: Theory and Empirical Evidence from the Former Soviet Union Republic of Moldova, Chisinau, Moldova, Working Paper.
- Bahl, R. and C. I. Wallich (1995). Intergovernmental Fiscal Relations in the Russian Federation, in: M. Bird, R. D. Ebel and C. I. Wallich (eds.), *Decentralization of the Socialist State*. Washington: The World Bank: 321-378.
- Barbone, L. and J. F. Hicks (1995). Local and Intergovernmental Finances in Poland: An Evolving Agenda, in: M. Bird, R. D. Ebel and C. I. Wallich (eds.), *Decentralization of the Socialist State*. Washington: The World Bank: 153-182.
- Bejaković, P. (2000). Improving the Tax administration in Transition Countries, paper presented at the Conference Global Entrepreneurship in the New Millenium, School of Management Syracuse University, Syracuse, New York, USA , August 2000.
- Bird, R. M., R. D. Ebel and C. I. Wallich (1995). Fiscal Decentralization: From Command to Market, in: M. Bird, R. D. Ebel and C. I. Wallich (eds.), *Decentralization of the Socialist State*. Washington: The World Bank: 1-68.
- Bogetić, Ž (1995). Bulgaria in Transition: An Overview, in: Ž. Bogetić, and A. L. Hillman (eds.), *Financing Government in the Transition: Bulgaria*. Washington: The World Bank: 9-29.
- Bogetić, Ž. and F. M. A. Hassan (1997). Personal Income Tax Reform and Revenue Potential in Transition Economies: Bulgaria, *Journal for Institutional Innovation, Development and Transition*. 1: 24-36.
- Bogetić, Ž. and A. L. Hillman (1995). The Choice of the Tax System, in: Ž. Bogetić, and A. L. Hillman (eds.), *Financing Government in the Transition: Bulgaria*. Washington: The World Bank: 33-46.
- Bristow J. (2000). Bulgaria, in: P. Heenan, M. La Montagne (eds.), *The Central and East European Handbook*. Chicago: Glenlake Publishing: 56-67.
- Campos N. F. and F. Coricelli (2002). Growth in Transition: What We Know, What We Don't, and What We Should, *Journal of Economic Literature*. XL: 793-836.
- Casanegra de Jantscher, M., C. Silvani, C. L. Vehorn (1992). Modernizing Tax Administration, in: V. Tanzi (eds.), *Fiscal Policies in Economies in Transition*. Washington: International Monetary Fund: 120-141.
- de Soto, H. (2000). *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.

- Djankov, S., R. La Porta, F. Lozep de Silanes and A. Shleifer (2000). The Regulation of Entry, NBER Working Paper 7892.
- Ebel R. and S. Yilmaz (2001). Fiscal Decentralization: Is It Happening? How Do We Know?, Working Paper, Georgia State University, Atlanta.
- Eilat Y. and C. Zinnes (2000). The Shadow Economy in Transition Countries: Friend or Foe? A Policy Perspective, unpublished manuscript.
- Ensley, M. and M. C. Munger (2001). Ideological Competition and Institutions: Why “Cultural” Explanations of Development Patterns Are Not Nonsense, in: R. Mudambi, P. Navarra and G. Sobbrío (eds.), *Rules and Reason. Perspectives on Constitutional Political Economy*. Cambridge: Cambridge University Press: 107-122.
- Fischer, S. and R. Sahay (2000). The Transition Economies After Ten Years, NBER Working Paper Series, Nr. 7664.
- Frey, B. S. (2002). Direct Democracy for Transition Economies, paper for the Collegium Budapest, Institute for Advanced Study.
- Frey, B. S. and A. Stutzer (2002). *Happiness and Economics*. How the Economy and Institutions Affect Well-Being. Princeton: Princeton University Press.
- Gërxxhani, K. (2002) Tax Evasion in Albania: An Institutional Vacuum?, paper presented at the Annual Meeting of the European Public Choice Society, Belgrate.
- Gordon, R. H. (1994). Fiscal Policy during the Transition in Eastern Europe, in. O. J. Blanchard, K. A. Froot and J. D. Sachs (eds.), *The Transition in Eastern Europe*. Chicago/London: The University of Chicago Press: 37-70.
- Graham, C. and S. Pettinato (2002). *Happiness and Hardship*. Opportunity and Insecurity in New Market Economies. Washington, D.C.: Brookings Institution Press.
- Gray, G. (2000). Slovenia, Croatia, Bosnia-Herzegovina, and Macedonia, in: P. Heenan, M. La montagne (eds.), *The Central and East European Handbook*. Chicago: Glenlake Publishing: 104-115.
- Gross, A. and B. Kaufmann (2002). *IRI Europe Country Index on Citizenlawmaking 2002*. Amsterdam: Initiative & Referendum Institute Europe.
- Hassan, F. M. A. and Ž. Bogetić (1996). Effects of Personal Income Tax on Income Distribution: Example from Bulgaria, *Contemporary Economic Policy*. 14: 17-28.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Jeffries, I. (1996). *A Guide to the Economies in Transition*. London: Routledge.
- Kasper, W. and M. E. Streit (1999). *Institutional Economics*. Social Order and Public Policy. Cheltenham, UK: Edward Elgar.
- Kolodko, G. W. (1999). Ten Years of Post-Socialist Transition Lessons for Policy Reform, Policy Research Working Paper 2095, Washington: The World Bank.

- Kungla, T. (1999). Fiscal Decentralization in Estonia, LGI Discussion Papers, No.13, Budapest.
- Kornai, J. (1990). The Affinity Between Ownership Forms and Coordination Mechanism: The Common Experience of Reform in Socialistic Countries, *Journal of Economic Perspective*. 4: 131-147.
- Kornai, J. (1992). *The Socialist System*. The Political Economy of Communism. Princeton: Princeton University Press.
- Kungla, T. (1999). Fiscal Decentralization in Estonia, Local Government and Public Service Reform Initiative Discussion Paper, No. 13, Budapest.
- Lavrov, A., J. M. Litwack and D. Sutherland (2000). Fiscal Federalism in the Russian Federation: Problems and Reform Options, paper prepared for the Moscow seminar on Russian Economic Reform, IMF, 5-7 April.
- Levin, M. and G. Satarov (2000). Corruption and Institutions in Russia, *European Journal of Political Economy*. 16: 113-132.
- Lilienthal, D. (1949). *This I Do Believe: An American Credo*. New York: Harper.
- Martinez-Vazquez J. (1995). Intergovernmental Fiscal Relations in Bulgaria, in: M. Bird, R. D. Ebel and C. I. Wallich (eds.), *Decentralization of the Socialist State*. Washington: The World Bank: 183-222.
- Martinez-Vazquez, J. and R. M. McNab (1997). Tax Systems in Transition Economies, Working Paper 97-1, Georgia State University, Atlanta.
- Martinez-Vazquez, J. and R. M. McNab (2000). The Tax Reform Experiment in Transition Countries, *National Tax Journal*. 53: 273-298.
- Nerré, B. (2001). The Role of Tax Culture in Transformation Processes – The Case of Russia, paper presented at the First Annual Meeting of ASPE, May 25-26, St. Petersburg.
- Paldam, M. and G. T. Svendsen (2000). Missing Social Capital and the Transition in Eastern Europe, forthcoming in: *Journal for Institutional Innovation, Development and Transition*.
- Pejovich, S. (1997). The Transition Process in an Arbitrary State: The Case for the Mafia, *Journal for Institutional Innovation, Development and Transition*. 1: 1-18.
- Pommerehne, W. W. and H. Weck-Hannemann (1996). Tax Rates, Tax Administration and Income Tax Evasion in Switzerland, *Public Choice*. 88: 161-170.
- Raiser, M., C. Haerpfer, T. Nowotny and C. Wallace (2001). Social Capital in Transition: A First Look at the Evidence, EBRD working paper 61.
- Rodrik, D. (2001). Institutions for High-Quality Growth: What they Are and How to Acquire them, forthcoming in: *Studies in Comparative International Development*.
- Schneider, F. (2002). The Size and Development of the Shadow Economies of 22 Transition and 21 OECD Countries, Discussion Paper No. 514, June, IZA Bonn.
- Stiglitz, J. E. (1999). Whither Reform? Ten Years of the Transition, paper prepared for the Annual Bank Conference on Development Economics, Washington, D.C., April 28-30.

- Thompson, W. (2000). The Baltic States, in: P. Heenan, M. La Montagne (eds.), *The Central and East European Handbook*. Chicago: Glenlake Publishing: 23-39.
- Torgler, B. (2001a). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168.
- Torgler, B. (2001b). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.
- Torgler, B. (2003a). Tax Morale and Tax Compliance: Evidence from the United States, WWZ Working Paper, 03/02, Basel, University Basel.
- Torgler, B. (2003b). Tax Morale, Rule Governed Behaviour and Trust, forthcoming in: *Constitutional Political Economy*.
- Torgler, B. (2003c). Direct Democracy Matters: Tax Morale and Political Participation, *National Tax Association Papers and Proceedings* (Orlando, 2002).
- Transition Report (2000). *Employment, Skills and Transition*. Economic Transition in Central and Eastern Europe, the Baltic States and the CIS. London: European Bank for Reconstruction and Development.

CHAPTER XI

TAX MORALE IN LATIN AMERICA*

ABSTRACT

In the tax compliance literature, we observe a lack of empirical evidence on the degree of tax morale in developing countries. Thus, our paper as a novelty focuses on Latin America, analysing tax morale as dependent variable and searching for factors that systematically affect tax morale, working with the two data sets Latinobarómetro and World Values Survey. Our findings indicate that there is a significant correlation between tax morale and the size of shadow economy. Furthermore, people who said they knew/have heard about practised tax avoidance have a significantly lower tax morale than others. Looking at individuals' perception of reasons for tax evasion we found that the tax burden, lacking honesty, and corruption are seen as the main factors. We observed a significantly lower tax morale in South America/Mexico than in the Central America/Caribbean area. Furthermore, trust in the president and the officials, the belief that other individuals obey the law, and a pro democratic attitude have a significant positive effect on tax morale.

JEL classification: H260, K420, 9160

Keywords: tax morale, tax evasion, tax avoidance, shadow economy

* Benno Torgler (2003). Tax Morale in Latin America, WWZ-Discussion Paper 03/03, Basel: WWZ.

I. INTRODUCTION

Tax morale and tax compliance are important factors for guaranteeing an adequate provision of public goods. Especially in times when the costs of running public office have strongly increased, governments search for strategies to generate revenues. A high degree of tax evasion creates misallocations in resource use (see Alm and Martinez-Vazquez 2001). In developing countries tax evasion is often widespread (see, e.g., de Soto 2000). Such a high level of tax evasion reduces government's ability to work and thus to provide adequate services. Over the last decades, developing countries as, e.g., in Latin America have made considerable efforts to implement major reforms in tax policies and to improve the effectiveness of their tax administrations:

“These efforts frequently took place under unfavourable macroeconomic circumstances. Tax administrators often had to cope with a barrage of tax reforms, interspersed with numerous ad hoc changes in tax rates, exemptions, and payment periods introduced largely for revenue reasons” (Casanegra de Jantscher and Bird 1995, pp. 1-2).

It is interesting to notice that there is hardly any empirical evidence about the degree of tax morale and tax evasion in developing countries. Thus, the focus on Latin America in this paper is novel. We analyse tax morale as a dependent variable and search for factors that systematically affect tax morale. It is important to analyse the determinants that influence tax morale in developing countries as the environment is different from developed countries. On the other hand, if we observe similar tendencies, some effects might be independent of cultural environments. To get a robust picture we are going to analyse two different data sets: the World Values Survey (WVS) and the Latinobarómetro. The WVS covers the years from 1981 to 1997 and the Latinobarómetro the year 1998¹. In Section II we are going to give an overview on the tax system and tax administration in Latin America. Section III starts with a descriptive analysis evaluating the degree of tax morale in different Latin American countries and checking if there is a correlation between tax morale, tax avoidance and the size of shadow economy. In a second step, multiple regressions will be estimated pooling developing countries in a cross-section analysis, and differentiating between Middle and South America. The paper finishes with some concluding remarks.

¹ See *Table A1* in the Appendix for the years the surveys were made.

II. TAX POLICY: THE ART OF THE POSSIBLE RATHER THAN THE PURSUIT OF THE OPTIMAL

Taxation in developing countries is a challenging topic and has attracted increasing attention in the last two decades. Many problems observed as, for example, poor administration performances failing to collect sufficient tax revenues, tax structures where horizontal and vertical equity considerations are not integrated, lack of government and economic stability. Compared to OECD countries, the levels of tax revenues in percent of the GDP are much lower (around 18 percent compared to around 40 in OECD countries, see, e.g., Tanzi and Zee 2000, p. 303). We are going to pay attention to the tax administration as it plays an essential role in the tax policy, especially in those countries in which formal institutions are less stable and credible. In many developing countries we observe a low capacity of the tax administration to monitor compliance among taxpayers. Tanzi (2000) reports a case in Peru where corruption in the tax administration was so common that the government had to close down the existing administration to replace it completely. In many countries there was a very high demand for poorly paid jobs in the tax administration, which indicates that applicants were aware of the possibility to get extra incomes. Furthermore, in some countries these jobs can be bought (see also Tanzi 2000).

Most countries traditionally have no self-filling procedure but apply deductions. Bahl and Martinez-Vazquez (1992) criticised that developing countries have imitated the complex tax structures of developed countries with the disadvantage of lower tax administration capabilities. Tax reforms in the 80s had the intention to increase the stability in the revenue system. The 90s fiscal crises might have been motivating factors for reforms (see Das-Gupta and Mookherjee 1995). Jenkins (1995) points out that the income tax has performed very badly in Latin America, tending to give modest amounts of revenue. In general, it can be argued that an important aim of a tax reform is to find a good way to raise revenues, promoting equity and efficiency without crowding out tax morale.

We can also observe a fiscal decentralisation process in the 80s, delegating functions downwards but without increasing much the local fiscal autonomy. Aghón and Casas (1999) give an overview on fiscal decentralisation in Latin America. They point out that countries as Argentina, Brazil, Colombia, and Chile have a limited participation at the subnational governmental level with a strong dependency on intergovernmental transfers. On the other hand, Peru, Bolivia, Paraguay, Ecuador and Central America have the tendency to a higher revenue and expenditure centralisation. Looking at the distribution of revenues by source and

government level, we observe, e.g., in Argentina (1995) that property taxes and indirect taxes play an essential role for municipalities and provinces. Income taxes on the other hand covered only around 11 percent of the consolidation of tax revenues (see Rezk 1999). A similar picture can be observed in other Latin American countries. Personal income tax revenues are very low in an international comparison (around 1 percent of the GDP, OECD countries around 11 percent), and have been constant over the last two decades (see, e.g., Tanzi and Zee 2000). However, in Brazil, the income tax assignment is divided between the union (33.3% revenue disposition), the states (24.5%) and the municipalities (22.5%) (Rezk 1999, p. 112). Characteristics as, for example, a large agricultural sector, a high degree of shadow economy, small establishments, and a small proportion of wage income according to Tanzi and Zee (2000) reduce the possibility for developing countries to rely on modern taxes, such as personal income taxes (see also, Burgess and Stern 1993). The uneven income distribution with the political and financial power concentrated at the top level prevent modern tax reforms as the use of personal income or property taxes. Thus, it is not surprising that radical reforms can hardly be seen in such countries.

Latin American countries generally have their expenditures much more centralised than OECD countries. On the revenue side, national legislators set tax bases and tax rates. However, Aghón and Casas (1999) state that in the last years local taxes gained importance and local governments mostly act as tax collectors.

In 1991 important reforms were enacted in Peru creating an increase in revenues measured as a percentage of the GDP. The tax administration (Superintendencia Nacional de Administración Tributaria) reduced their workforce implementing higher standards and increased the salary to be competitive with the private sector (Bejaković 2000).

In Bolivia at the end of 80s, tax receipts increased rapidly. Important changes in the tax system and the tax administration have been made. Silvani and Radano (1992) analyse Bolivia and Uruguay. In both countries changes supported by international organisations have been made between 1985 and 1990. A main intention was to simplify the tax system, taxation and auditing procedures. Uruguay's changes were more gradual and thus less radical than in Bolivia, where new taxes were introduced and the fines adapted (from 50 percent to 100 percent of the unpaid taxes). Cabezas (1992) points out that drastic and sweeping changes were necessary as the situation had been chaotic before 1985. Tax area reforms went hand in hand with government changes. The Bolivia economy was restricted by strong government regulations and the public sector produced enormous fiscal deficits. The reforms tried to increase tax collection, to simplify the tax system, and to reduce tax evasion (Cabezas 1992).

They eliminated the business income tax and replaced it by a net wealth tax. A further objective was to avoid contact between taxpayers and administrators. It can be criticised that such a strategy might not be so efficient. Certainly, the objective was to reduce a discretionary and arbitrary behaviour of the tax administration. Corruption in the tax administration is a real problem in developing countries. There are many opportunities for a tax official to demand bribes. The effective tax burden might therefore be much higher than the official tax burden, e.g., due to the “special payments” to the tax officials. Tanzi (2000) offers a set of arguments why corruption is likely to be a major problem in tax administrations (p. 113):

- “1. the laws are difficult to understand and can be interpreted differently so that taxpayers need assistance in complying with them;
2. the payment of taxes requires frequent contacts between taxpayers and tax administrators;
3. the wages of the tax administrators are low;
4. acts of corruption on the part of the tax administrators are ignored, not easily discovered or, when discovered, are penalized only mildly;
5. the administrative procedures (for example, the criteria for the selection of taxpayers for audits) lack transparency and are not closely monitored within the tax or customs administrations;
6. tax administrators have discretion over important decisions, such as those related to the provision of tax incentives, determination of tax liabilities, selection of audits, litigations, and so on; and
7. more broadly, when the controls of the state (the principal) over the agents charged with carrying out its functions are weak”.

It might be more important that tax administration procedures in the contact with taxpayers are transparent and clear than to search for strategies to avoid contact with them. Feld and Frey (2002) point out

“If they treat taxpayers as partners in a psychological tax contract, instead of inferiors in a hierarchical relationship, taxpayers have incentives to pay taxes honestly” (p. 5).

Research findings indicate that a personal interaction between taxpayers and the tax administration is a key determinant regarding the degree of tax evasion. It might be more convenient to reduce corruption by imposing, for example, a periodical geographical mobility on civil servants, removing them from regions with close social or family relationships (see Tanzi 2000). Such a strategy can especially be used in large countries (for example in South

America). The privatisation of the revenue collection might be an alternative strategy, adopted in Indonesia in 1985 where a customs assessment was made by a foreign firm, or in Mexico where commercial banks collect domestic taxes (see Burgess and Stern 1993).

In Chile tax administration has been confronted with strong modernisation tendencies. Resources have been invested in education courses for the administration staff. Transparency has been increased informing via internet about the tax system (see Bejaković 2000).

In Guatemala in 1987 a tax reform created a dramatic increase of tax evasion. The government had missed the possibility to reform the tax administration and the changes in the tax base enhanced the incentives to avoid taxes, increasing the number of exemptions and deductions. Whereas the revenues increased from 1986 to 1988 (from 8.9 percent to 10.1 percent of the GDP), they fell back in the following years (in 1990, 6.5 percent of the GDP) (Bahl and Martinez-Vazquez 1992). Results indicate that the reform has produced only short-run effects. According to Pineada (1992, p. 116), less than 1 percent of the registered businesses were audited (200 out of 30'000) and in the years 1966-67, only 51 percent of the registered businesses (24'300) paid taxes.

Colombia reformed the tax administration in 1974. However, no increase in the tax revenues was achieved before the reforms in the late 80s which integrated tax system reforms as, e.g., tax simplification (Bejaković 2000). McLure and Pardo (1992) stress the positive effects of reforms on tax morale:

“Colombia has one of the best income taxes of any developing country ... Reforms ... in processing collections and refunds – have led to an improvement of taxpayer morale – at least, the morale of honest taxpayers. Rather than facing the prospect of dealing with dishonest officials who will demand bribes or otherwise cause trouble for the taxpayer ... the taxpayer can be relatively confident that payments will be handled properly” (pp. 124, 135).

However, too many reforms can produce instability in the tax system. In Mexico reforms took place in 1978-80, 1983, 1985, 1986, 1988, 1989, 1990-91, 1993, 1994, 1995-97, and 1998 (Martinez-Vazquez 2001, p. 29). Martinez-Vazquez (2001) points out that instability of the tax system makes tax enforcement more difficult and might lead to a lower tax revenue. Changes demand too much of the tax administration, create uncertainty and confusion among taxpayers and increase tax compliance costs. Contrary to other Latin American countries Mexico has a very modern tax revenue structure based on income taxes as the most important source of revenue (31 percent of total federal revenues in 1998). However, the structure is

very centralised, leaving the subnational governments only 6 percent of the government revenues (Martinez-Vazquez 2001, p. 9)

III. EMPIRICAL EVALUATION

In our analysis we are going to use two data sets: the World Values Survey and the Latinobarómetro. The Latinobarómetro has been conducted annually from 1997 to 2000 in seventeen countries covering most of Latin America with the exception of Cuba, the Dominican Republic, and Puerto Rico. In the survey of 1998 which we take as the basis of our analysis, tax compliance questions have been asked. The World Values Survey data covers 10 Latin American countries, and for some of them we have data from different years. Both data sets help get a relatively robust picture of the degree of tax morale and the determinants that shape tax morale in Latin America. To reduce possible bias in cross-country analysis, it makes sense to consider a relatively homogeneous region with similar characteristics.

1. Descriptive Analysis

1. Tax Morale and Tax Evasion

Table 1 in the columns 2, 3 and 4 shows for each country the percentage of individuals saying that tax evasion is never justifiable. Columns 5, 6, and 7 give the mean value for all countries based on a scale from 0 to 3, where 3 is the highest tax morale (value 0 integrates the values 4 to 10). It is difficult to get a clear idea about the development of tax morale over time, as only few countries have participated in the first two World Values Survey waves. Three out of four countries have a lower tax morale in the years 1995-1997 compared to 1991-1993. Only in Mexico tax morale has increased having been at a very low level in 1991-1993 and in 1981-1984. The low tax morale in Mexico corresponds to the low revenue performance (also compared to other developing countries), despite the tax structure is comparable to many OECD countries. Martinez-Vazquez (2001) tries to explain this so-called paradox. As he mentions, the modern tax system structure is undermined by factors as i) ad hoc policy measures, ii) lack of an adequate ability of tax administrations to deal with a modern tax system, and iii) Mexican's authority policy to keep tax efforts measured as the ratio of

revenues to GDP relatively constant, based on an agreement between the government and the private sector.

Table 1
Tax Morale Over Time (World Values Survey)

country	Tax Evasion Is Never Justifiable (%)			Mean		
	1981-1984	1990-1993	1995-1997	1981-1984	1990-1993	1995-1997
Argentina	64.4	80.5	72.1	2.136	2.563	2.314
Brazil		60.8	46.8		2.006	1.608
Chile		75.7	64.2		2.442	2.180
Colombia			72.2			2.382
Dominican Republic			70.4			2.399
Mexico	48.9	37.3	54.7	1.375	1.453	1.844
Peru			62.7			2.202
Puerto Rico			74.4			2.369
Uruguay			80.3			2.512
Venezuela			70.6			2.417
Average	56.7	63.6	66.8	1.756	2.116	2.223

Notes: Own calculations from the World Values Surveys. Columns 2, 3, and 4: percentage of individuals saying that tax evasion is “never justified”. Columns 5, 6, 7: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

The Latinobarómetro has integrated a similar question as the World Values Survey which allows to measure tax morale:

On a scale of 1 to 10, where 1 means not at all justifiable and 10 means totally justifiable, how justifiable do you believe it is to manage to avoid paying all his tax.

To compare both data sets tax morale has been coded as previously (3=highest tax morale, 0=lowest tax morale).

Table 2

Tax Morale and Tax Evasion 1998 (Latinobarómetro)

Country	Tax Evasion Is Never Justifiable (%)	Mean	Tax Avoidance
Argentina (Arg)	66.3	2.266	34.2
Bolivia (Bol)	49.2	2.044	34.8
Brazil (Bra)	65.1	2.165	37.8
Columbia (Col)	65.3	2.214	26.8
Costa Rica (Cos)	63.2	2.100	23.0
Chile (Chi)	60.4	2.209	22.2
Ecuador (Ecu)	52.6	1.910	43.0
El Salvador (El)	61.4	2.205	28.2
Guatemala (Gua)	78.7	2.556	17.7
Honduras (Hon)	79.6	2.519	24.9
Mexiko (Mex)	50.2	1.732	36.5
Nicaragua (Nic)	74.2	2.395	42.2
Panama (Pan)	66.7	2.228	24.7
Paraguay (Par)	68.5	2.373	34.6
Peru (Per)	53.1	2.058	33.6
Uruguay (Uru)	50.5	1.948	31.7
Venezuela (Ven)	68.8	2.310	35.0
Average	63.2	2.190	31.2

Notes: Own calculations from the Latinobarómetro. Column 2: percentage of individuals saying that tax evasion is "never justified". Column 3: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale. Column 4: percentage of individuals saying that they know or have heard that someone has managed to avoid taxes.

The average values in *Table 2* are in line with the findings obtained with the World Values Survey. 63.2 percent of the individuals state that tax evasion is never justifiable. The mean value 2.190 is lower than the WVS value in the period 1995-1997. In general, Central America seems to have a higher tax morale than South America. Guatemala has the highest tax morale among all Latin American countries, followed by Honduras. It is interesting to notice that Guatemala reduced the penalties in the tax reform of 1996. Before, penalty was twice the amount of the understated taxes. The basic sanction had been reduced to 160 percent with the possibility to even reduce this amount if a mistake has not been discovered by the tax administration (only 10 percent penalty, formerly 100), or if taxpayers agree to settle at the time of the initial field audit by the tax administration (20 percent, formerly 200).

Furthermore, the following conditions reduce the penalty: i) taxpayers' avowal to have evaded before going to court reduces penalty by 40 percent, (ii) avowal after court but before the final judicial determination by 80 percent. In 1990 an increase in the tax collection of 2.9 million US\$ was observed (McLure and Santiago 1992). Such results indicate that there are alternatives to a more severe deterrence (punishment) policy.

Compared to the World Values Survey the Latinobarómetro has the advantage to cover additional tax compliance questions. We have focussed on the following variable which we define as TAX AVOIDANCE:

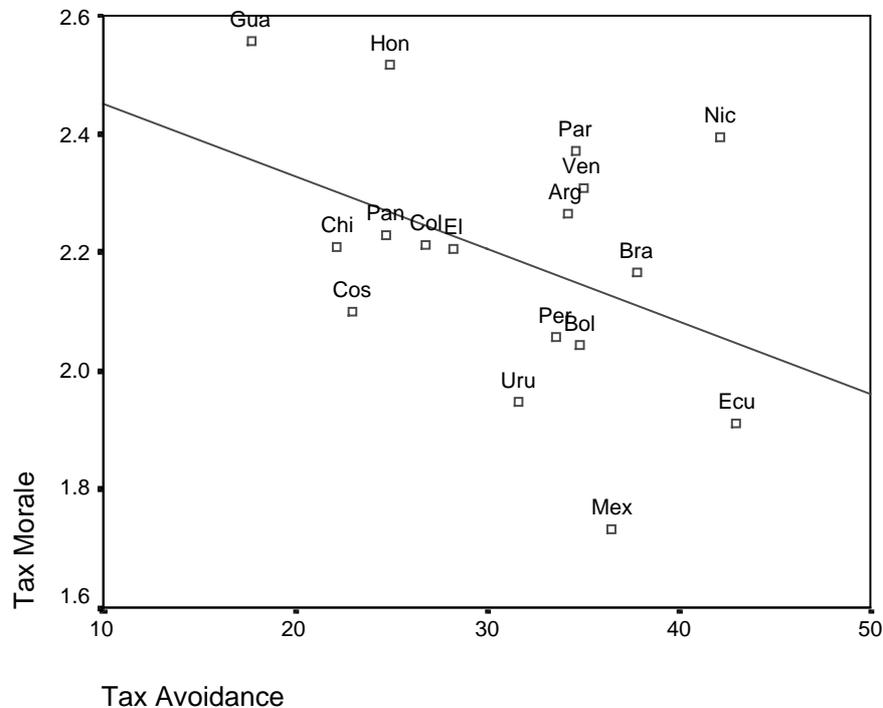
Could you tell me if recently you have known someone or have heard someone you know comment about somebody who has: Managed to avoid paying all his tax (1=yes, 0=no).

Table 2 indicates that countries with a low tax morale have a high rate of individuals stating that they know/heard about tax avoidance. One reason might be that individuals notice that many others evade taxes which crowds out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic. The moral costs to evade taxes decrease.

Guatemala has the lowest average rates. On the other hand, in Mexico we can not only observe a low tax morale but also a high degree of tax evasion. This result corresponds to the findings of Casanegra de Jantscher et al. (1996), measuring the level of tax evasion in Mexico for the VAT in 1996 as 59 percent.

To better check such a tendency we analyse if there is a significant correlation between both variables. *Figure 1* shows a strong negative correlation between the variables (-0.412), being significant at the 0.05 level (p-value = 0.05, sign. 2-tailed).

Figure 1
Correlation between Tax Morale and Tax Avoidance



In a next step we are going to analyse individuals' perceptions of the reasons why people evade taxes (see *Table 3*). Differences among countries and among reasons might give clues on how to enhance tax morale in a specific country.

1. Tax Burden

Taxpayers are often concerned about the burden of taxation. Over 46 percent of the respondents in Latin America considered a high tax burden to be a reason why people do not pay taxes. *Table 3* shows that tax burden ("because taxes are too high") has the highest percentage of all reasons mentioned. Anti-tax feelings arise if the tax burdens are seen as too high. Especially, self-employed might feel the tax burden more as taxes become more visible to them. The highest values in *Table 3* are observed in Argentina (65.6 percent), followed by Uruguay (63.7 percent) and Colombia (62.8 percent). The lowest values have been obtained from Guatemala, Venezuela and Chile.

2. Lack of Honesty/Lack of Civic Conscience

Lacking civic conscience and honesty have been mentioned very often (average percentage 44.5). Honduras (49.3), Ecuador (49.3) and Panama (41.1) have the highest values, Argentina (17.7) and Uruguay (20.3) the lowest. Honesty restricts the possibility set of an individual to act illegally. Taxpayers may be aware that their evasion could damage the welfare of the community they live in. As a consequence, evasion can produce psychological costs. People may not be comfortable with dishonesty (see Spicer 1986). The findings of Orviska and Hudson (2002) evaluating the British Social Attitudes Survey 1996 indicate that civic conscience has an impact on individuals' perceptions of whether tax evasion is right or wrong. Furthermore, Torgler (2003a) shows with the Taxpayer Opinion Survey that a higher obedience and respect for the authority leads to a significantly higher tax morale.

3. Corruption

The presence of corruption undermines tax morale of the citizens who become frustrated. As we can see in *Table 3*, on average 44.2 percent of the individuals in Latin America state that individuals evade taxes because there is corruption. Ecuador, Mexico, and El Salvador have the highest values, Argentina, Chile, and Peru the lowest.

There might be a crowding-out effect of morality among the tax administrators when there is a big number of corrupt colleagues. Corruption can be reduced with fair procedures. In the tax compliance literature, most studies include the assumption that tax collectors are intrinsically motivated (see, e.g., Hindriks, Keen and Muthoo 2002). Discretionary power over resource allocation can induce corruption. Especially in developing countries, agents as the political elite, administration staff, and legislators have a discretionary power, because institutions are neither credible nor working well. Over-regulation on the one hand and a lack of democratic procedures on the other hand offer a good field for illegal activities. Corruption reduces the efficiency of allocation and produces delays in transactions to acquire additional payments (see, e.g., Rose-Ackerman 1997, Jain 2001). In some countries tax collectors' wages have been raised to reduce the incentive for them to engage in corruption. Interestingly, such a strategy can also be reported from Ancient Egypt, where pharaohs increased the salary of tax agents (scribes)

or trained special agents to check corruption in the revenue bureaus (see Adams 1993). Hindriks et al. (1999) searched for anecdotal evidence in the literature and report that in Taiwan 94% of interviewed tax administrators admit having let themselves be bribed and that in India 76% of all government tax inspectors took bribes. De Soto (1989) and his research team conducted an experiment, setting up a small garment factory in Lima, with the aim to comply with the bureaucratic procedures and thus behave in accordance with the law. He reports that 10 times they were asked for a bribe to speed up the process and twice it was the only possibility to continue the experiment. It took 10 months in total to start the business. Similar to these findings our descriptive analyses indicate that people believe corruption to be a real problem in Latin America.

4. Benefits from Public Spending

Taxpayers are sensitive regarding the way the government uses the taxes. There is an input-output relation between what an individual pays with his/her taxes and what comes back from the government. Thus, individuals' tax compliance might be influenced by the benefits received from the government in form of public goods compared to the price they paid for them. Individuals might feel cheated if taxes are not spent adequately. Moral costs of evading taxes decrease and tax morale is crowded out. The reason "because taxes are ill spent" catches such a fiscal connection between revenues and expenditures. On average, 32.4 percent mentioned this point. The highest value is measured in Mexico (50.3 percent), followed by El Salvador (46.4) and Ecuador (45.8), and the lowest values are observed in Guatemala (20.1), Chile (22.6) and Peru (23.2).

5. Fiscal Knowledge

A certain fiscal knowledge helps put into account the connection between taxes and benefits. Better educated taxpayers might know more about tax law and fiscal connections and thus would be in a better position to assess the degree of compliance (see Lewis 1982). However, it should be noticed that there might possibly be people with a lower education who have acquired a high knowledge about taxation. This question can be measured with the following statement: "They don't see the point in paying taxes".

Similar to other reasons mentioned, Mexico (49.9 percent) has the highest values followed by El Salvador (44.8) and Honduras (41.3). On the other hand, Guatemala (15.3) and Argentina (19.7) have the lowest values. Our data indicates that there is a significant correlation between education and the above statement. Furthermore, only a comparatively small amount of individuals mentioned that taxes are not paid “because people are quick-witted and sly”. Interestingly and contrary to other reasons, the highest value is observed in Venezuela.

6. Detection and Punishment

Traditionally, the tax compliance literature has strongly focused on the effects of detection and punishment on tax evasion. However, the reason “because those that evade taxes go unpunished” has not been mentioned very often compared to the other reasons, indicating in *Table 3* with 23.1 percent the lowest average value of all the reasons. Mexico and El Salvador have the highest values, Peru and Columbia the lowest. Thus, this result indicates that an increase in detection and punishment might not be the only strategy to increase tax morale and tax compliance. Frey (1997, p. 44) points out that the

“spirit of law, including specific rules, should acknowledge the citizens’ basic good will”.

Table 3
Reasons Why Individuals Evade Taxes

Why do people not pay their taxes?	Arg	Bol	Braz	Col	Cos	Chi	Ecu	El	Gua	Hon	Mex	Nic	Pan	Par	Per	Uru	Ven	Average
Because the taxes are too high	65.6	37.1	50.0	62.8	37.6	32.0	50.8	54.3	24.1	47.2	55.8	57.6	38.5	42.9	50.2	63.7	25.3	46.8
Lack of honesty	17.7	47.0	45.5	31.3	54.0	54.7	53.8	58.5	49.6	53.5	39.2	36.0	49.8	47.3	41.6	20.3	57.5	44.5
Because there is corruption	32.0	42.4	48.9	48.7	43.7	32.5	59.0	52.5	43.2	44.4	54.6	41.9	40.5	47.0	32.8	41.0	45.7	44.2
Lack of civic conscience	15.3	35.3	32.0	28.9	24.9	39.5	49.3	40.4	20.2	49.3	38.3	33.4	41.1	37.4	34.2	24.2	40.7	34.4
Because the taxes are ill-spent	26.7	40.4	29.7	40.4	27.8	22.6	45.8	46.4	20.1	35.1	50.3	33.7	27.5	29.9	23.2	25.1	26.6	32.4
They don't see the point in paying taxes	19.7	28.5	25.9	24.4	21.2	30.3	37.8	44.8	15.3	41.3	49.9	30.4	26.9	29.9	21.4	23.4	29.2	29.4
Because nationals are quick-witted and sly	14.8	17.6	31.8	17.8	29.2	44.4	47.2	25.8	12.8	28.3	25.4	16.2	32.7	8.9	25.6	30.5	39.9	26.4
Because those that evade taxes go unpunished	26.0	23.0	24.3	16.6	19.2	18.1	31.3	36.4	13.4	24.6	36.5	21.0	18.6	19.9	14.6	26.5	22.3	23.1

Note: Percentage of Individuals that mentioned reasons why people do not pay their taxes.

2. Tax Morale and Shadow Economy

There is a lively discussion on how tax attitudes are related to individuals' action. Is there a correlation between tax morale and tax evasion? In a general context, social psychology literature has intensively focused on this topic (see, e.g., Ajzen and Fishbein 1980). Lewis (1982) points out that

“it could be that tax evasion is the only channel through which taxpayers can express their antipathy ... we can be confident in our general prediction that if tax attitudes become worse, tax evasion will increase”(p. 165, 177).

The connection between attitude and behaviour is an interesting question which can be analysed empirically. Torgler (2003a) shows in a multivariate analysis for the United States, using the *Taxpayer Opinion Survey*, that tax morale and tax evasion are negatively correlated. Furthermore, integrating European and Transition countries, Torgler (2001a) observed a significant negative correlation between tax morale and the size of shadow economy.

The informal sector plays an important role in developing countries. Employment in the informal sector seems to be a relevant income source for many people. Tanzi (2000) points out that it is realistic to assume that informal activities are more important in developing than in developed countries because it is easier to be underground as the exemption levels for income and value added taxes are lower, social security taxes higher and restrictions to enter formal economy activities also higher than in developed countries.

We are going to analyse whether there is a correlation between the size of shadow economy, measured as the degree of informal employment in percent of the total population (average 200/2001, estimated in Schneider 2002, p. 6), and tax morale (developed from the *Latinobarómetro*). *Figure 2* shows that there is a strong negative correlation between both variables (-0.511) significant at the 0.05 level (sign. 2-tailed: 0.043).

Figure 2

Correlation between Tax Morale and the Size of Shadow Economy



2. Multivariate Analysis (*Latinobarómetro*)

Taxpayers have different possibilities to express their attitudes towards a tax system. Research commonly treats tax evasion as a possible reaction to express preferences (see, e.g., Torgler 2001a). However, there are other possibilities as, e.g., tax avoidance (for a survey see Torgler 2002a). We have the possibility to analyse both components. Whereas the World Values Survey focuses on evasion, the *Latinobarómetro* puts into account tax avoidance.

Until now, we have only analysed whether there is a correlation between the variables. However, simple correlations do not per se tell us anything about causes and effects. In this subsection we therefore made a multivariate regression analysis in order to get deeper insights. First we are going to present some theoretical considerations about key determinants that may influence tax morale and thus allow to develop hypotheses. After that, weighted ordered probit estimations are going to be presented, using both data sets (*World Values Survey* and *Latinobarómetro*) pooling the countries together, but differentiating between

regions (South and Central America and Mexico). We have seen in the descriptive analysis that Mexico is a special case, indicating a very low tax morale. Furthermore, Mexico can be classified as an own region building the bridge between the United States and Central America. Thus, we use a separate dummy variable for Mexico. In general, a cross-country analysis with survey attitude questions might cause difficulties. Because of the biases connected with cross-country comparisons, we restrict our analysis to a comparable region as Latin America, building dummy variables to catch regional differences. We are going to start with the Latinobarómetro as this data set with 17 countries offers a broader picture of Latin America than the World Values Survey. As dependent variable we use tax morale (scale from 0 to 3). Besides the control variables, in the first four estimations, we will consider some main factors.

1. Main Variables

1.1 Avoid Paying Taxes

We have already discussed this variable in the descriptive analysis observing a significant correlation between this variable and tax morale. We are going to check to which extent this correlation remains negative and significant, controlling for a couple of variables. Thus, we would hypothesise that taxpayers who know or have heard about citizens who have managed to avoid taxes have a lower tax morale than others. If individuals notice that many others evade taxes intrinsic motivation to comply is crowded out.

Lewis (1982, p. 144) points out that there might be a

“tax subculture, with its own set of unwritten rules and regulations. Thus I am more likely to evade not only because I have friends who, I know, have got away with it (so why shouldn't I?) but also because evasion is ethically acceptable among my friends ... Furthermore, ‘no friends of mine can be criminals’ may come the reply: ‘What’s good enough for fine, upstanding citizens like Fred Bloggs, John Doe, Donald Campbell, Herman Schmitt and Hans Anderson is good enough for me’”.

1.2 Trust that People Obey the Law

This variable measures the contrary effect compared to the previous one. If we believe that most people obey the law and pay their taxes, moral costs of not being obedient increase². The hypothesis would be that an increase in the level of “trust that other people obey the law” increases tax morale.

1.3 Perceived Probability of Being Caught

Traditionally, tax compliance literature stresses the relevance of deterrence factors as the probability of being caught and fine rates. However, when we analyse tax morale as dependent variables, it can be doubted that the perceived probability of being caught has a positive effect on tax morale³. A higher perceived probability of being caught can be interpreted by the taxpayers as a signal that the government distrust them, which might crowd out tax morale (see Frey 1997).

1.4 Trust in the President

Governments with a certain authoritarian political structure are not untypical for developing countries. Thus, presidents have often a strong political role, and active democratic political participation is often disregarded. We are going to analyse whether trust in the president has a positive effect on tax morale⁴. The government plays an important role in developing countries, where greater difficulties must be confronted than in developed countries. Taxes can be seen as a price paid for government’s positive actions. If taxpayers trust the president, they are more inclined to be honest. On the other hand, if the president acts trustworthily, taxpayers might be more willing to comply with the taxes. This leads to the hypothesis that a higher degree of trust in the president leads to a higher tax morale.

² The following question has been asked: “In general, would you say that people always obey the law, or are there exceptions or particular occasions when people can follow their consciences even if it means breaking the law” (1= always obey the law, 0= follow their consciences).

³ The *Latinobarómetro* has asked the respondents the following question: Would you say that it is very possible, fairly, a little, or not at all possible that a person in our country who has committed an illegal act gets caught.

⁴ Trust in government has been measured the following way: Please tell me how much confidence you have in the president (1=not at all, 4=a lot).

2. Results

Table 4 presents the results using *weighted* ordered probit estimations. We can observe that South America and Mexico have a significantly lower tax morale than Central America (reference group). Being from South America (Mexico) rather than from Central America reduces the probability of stating that tax avoidance is never justified by more than 10 percentage points (20 percentage points). Knowing about individuals who avoid taxes has a significantly negative effect on tax morale. Thus, the first hypothesis cannot be rejected. An increase in the scale of the variable AVOID PAYING TAXES reduces the share of individuals arguing that tax avoidance is never justifiable by more than 6 percentage points. Furthermore, the hypotheses regarding the variables TRUST PEOPLE OBEY THE LAW and TRUST PRESIDENT cannot be rejected either, whereas not surprisingly PERCEPTION BEING CAUGHT is not significant showing a coefficient with a negative sign.

Looking at the control variables we observe that all age groups from 30 to 65+ have a significantly higher tax morale than the reference group 16-29. For example, the proportion of persons of the age 65+ who report the highest tax morale is 12.5 percentage points higher than for the reference age group. Marginal effects increase with an increase of the age. Furthermore there is the tendency that married people or people who live together have a significantly higher tax morale than singles. The proportion of self-employees, individuals salaried in a private company and people in charge of a household who report the highest tax morale is higher than for people salaried in a public company. Tax administration's collecting problems affect the monitoring of self-employed individuals, as it is very difficult and costly to gather information about them. Thus many enterprises, especially small ones, remain invisible (Burgess and Stern 1993). Regarding tax morale such a situation does not mean that those individuals' morale is lower. On contrary, they do not feel the tax burden as the government and the administration have difficulties to capture their existence. This might also explain the difference between people salaried in a private and in a public company.

Table 4
Determinants of Tax Morale, Latinobarómetro 1998

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Dependent Variable: Tax Morale</i>								
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
a) Demographic Factors								
AGE 30-49	0.086***	0.033	0.061**	0.023	0.068***	0.026	0.070***	0.026
AGE 50-64	0.167***	0.063	0.129***	0.048	0.148***	0.056	0.159***	0.060
AGE 65+	0.332***	0.125	0.264***	0.099	0.334***	0.126	0.321***	0.121
FEMALE	0.007	0.003	0.036	0.013	0.022	0.008	0.021	0.008
EDUCATION	0.005**	0.002	0.003	0.001	0.004*	0.002	0.004	0.001
b) Marital Status								
MARRIED/LIVING TOGETHER	0.047*	0.018	0.045*	0.017	0.043*	0.016	0.039	0.015
DIVORCED/WIDOWED	-0.033	-0.012	-0.052	-0.020	-0.040	-0.015	-0.044	-0.017
c) Employment Status								
SELFEMPLOYED	0.032	0.012	0.063*	0.024	0.050	0.019	0.056	0.021
SALARIED IN A PRIVATE COMPANY	0.065*	0.025	0.072*	0.027	0.070*	0.026	0.073**	0.028
UNEMPLOYED	-0.048	-0.018	-0.027	-0.010	-0.039	-0.015	-0.030	-0.011
RETIRED	0.010	0.004	0.058	0.022	0.006	0.002	0.000	0.000
IN CHARGE OF HOUSEHOLD	0.117**	0.044	0.109***	0.041	0.121***	0.046	0.133***	0.050
STUDENT	0.037	0.014	0.041	0.016	0.036	0.014	0.049	0.018
f) Regional Variable								
SOUTH AMERICA	-0.300***	-0.113	-0.310***	-0.117	-0.289***	-0.109	-0.292***	-0.110
MEXICO	-0.626***	-0.236	-0.631***	-0.237	-0.639***	-0.241	-0.637***	-0.200
g) Further Variables								
AVOID PAYING TAXES	-0.172***	-0.065						
TRUST PEOPLE OBEY THE LAW			0.227***	0.086				
PERCEPTION BEING CAUGHT					-0.002	-0.001		
TRUST PRESIDENT							0.021***	0.008
Observations	14823		14409		15274		15282	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, SALARIED IN A PUBLIC COMPANY, CENTRAL AMERICA. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

It might be interesting to integrate a proxy for income into the estimations. The Latinobarómetro has no specific information about the income of the subjects. Thus, the following proxies are integrated into further equations: OWN HOUSE, SOCIO-ECONOMIC

STATUS⁵ and FORTUNE⁶. Interestingly, all coefficients are not significant, showing low marginal effects. The coefficients for the regional variables remain significant.

Table 5
Tax Morale and Status in Latin America, Latinobarómetro 1998

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent Variable: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>Eq. 5</i>		<i>Eq. 6</i>		<i>Eq. 7</i>	
<i>a) Demographic Variables</i>	included		included		included	
<i>b) Marital Status</i>	included		included		included	
<i>c) Employment Status</i>	included		included		included	
<i>d) Regional Variable</i>						
SOUTH AMERICA	-0.297***	-0.112	-0.283***	-0.107	-0.321***	-0.121
MEXICO	-0.626***	-0.236	-0.624***	-0.236	-0.650***	-0.245
<i>e) Fortune and Status</i>						
OWN HOUSE	0.024	0.009				
SOCIO-ECONOMIC STATUS			-0.007	-0.003		
FORTUNE					0.005	0.002
Number of observations	15371		14987		14567	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, SALARIED IN A PUBLIC COMPANY, CENTRAL AMERICA. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

3. Multivariate Analysis (World Values Survey)

In a second step we are going to evaluate the World Values Survey (WVS) wave 1995-1997 data. Compared to the Latinobarómetro, the data set covers a wider range of questions on attitudes and socio-economic characteristics. We are going to evaluate the wave 1995-1997, covering the highest amount of countries (see *Table 1*). Similarly, we are going to build

⁵ Socio-economic status (4=very good, 1=very bad).

⁶ As a proxy for FORTUNE we take the aggregated sum of the following factors: colour tv, freezer, computer, washing machine, phone, car, second house, drinking water, sewage system (value 0 to 9).

regional dummy variables. The WVS has the disadvantage that Central America has not been covered sufficiently. Thus, instead of differentiating between South and Central America, we build additional dummies for Mexico and the Dominican Republic (Caribbean area). *Table 6* indicates in line with the Latinobarómetro findings that Mexico has a significantly lower tax morale compared to the reference group (other Latin American countries).

Instead of trust in the president we use satisfaction with officials. This allows to check the robustness of the trust variable expanding it to other state agents. The coefficient is highly significant and the marginal effects show that an increase in the level of satisfaction by one unit raises the share of individuals stating that tax morale is never justifiable by 1 percentage point.

We have obtained comparable results regarding the control variables. A higher age has a positive effect on tax morale. Furthermore, married people (females) have a higher tax morale than singles (males). The coefficient of the variable EDUCATION has now a negative sign. However, the significant effect on tax morale is not robust throughout all equations. We also controlled for the economic situation of the individuals. The results show the tendency that the lowest group (reference group) has a higher tax morale than the groups with a better economic situation. However, only the coefficient for the variable LOWER MIDDLE CLASS indicates a significant difference to the variable LOWER CLASS. We also checked if people with a stronger religiosity have a higher tax morale⁷. Religiosity might act as a restriction to acting illegally (see Torgler 2002b). *Table 6* shows a positive correlation between tax morale and religiosity.

⁷ We have developed a religiosity variable from the following question in the WVS: Independently of whether you go to church or not, would you say your are a religious person (value 3), not a religious person (2), a convinced atheist (1).

Table 6
Determinants of Tax Morale, WVS 1995-1997

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>	
<i>Dependent Variable : Tax Morale</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Independent Variables</i>	<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>	
a) Demographic Factors								
AGE 30-49	0.090***	0.033	0.086***	0.032	0.101***	0.037	0.086***	0.032
AGE 50-64	0.304***	0.112	0.298***	0.109	0.284***	0.105	0.281***	0.104
AGE 65+	0.509***	0.187	0.500***	0.183	0.501***	0.184	0.441***	0.162
FEMALE	0.109***	0.040	0.101***	0.037	0.091***	0.034	0.109***	0.040
EDUCATION	-0.011	-0.004	-0.018***	-0.007	-0.014**	-0.005	-0.006	-0.002
b) Marital Status								
MARRIED	0.095***	0.035	0.081**	0.030	0.090***	0.033	0.076**	0.028
LIVING TOGETHER	-0.006	-0.002	-0.008	-0.003	-0.004	-0.001	-0.009	-0.003
DIVORCED	-0.067	-0.025	-0.042	-0.015	-0.042	-0.016	-0.045	-0.017
SEPARATED	0.017	0.006	0.019	0.007	-0.008	-0.003	0.034	0.013
WIDOWED	0.158**	0.058	0.116	0.043	0.139*	0.051	0.169**	0.062
c) Employment Status								
PART TIME EMPLOYED	0.013	0.005	0.038	0.014	0.030	0.011	0.018	0.007
SELFEMPLOYED	0.061	0.023	0.060	0.022	0.056	0.021	0.056	0.021
UNEMPLOYED	0.015	0.005	0.009	0.003	0.027	0.010	0.021	0.008
AT HOME	-0.034	-0.012	-0.008	-0.003	-0.019	-0.007	-0.022	-0.008
STUDENT	0.120***	0.044	0.116***	0.043	0.134***	0.049	0.106***	0.039
RETIRED	0.008	0.003	0.041	0.015	0.056	0.021	0.049	0.018
OTHER	0.021	0.008	-0.008	-0.003	0.015	0.006	-0.009	-0.003
d) Economic Situation								
UPPER CLASS	-0.027	-0.010	-0.072	-0.027	-0.015	-0.006	-0.037	-0.014
UPPER MIDDLE CLASS	-0.014	-0.005	-0.050	-0.019	-0.024	-0.009	-0.012	-0.004
LOWER MIDDLE CLASS	-0.098**	-0.036	-0.135***	-0.050	-0.115**	-0.042	-0.079*	-0.029
WORKING CLASS	-0.019	-0.007	-0.061	-0.022	-0.043	-0.016	-0.022	-0.008
e) Religiosity								
RELIGIOUS	0.092***	0.034	0.094***	0.034	0.091***	0.033	0.060***	0.022
f) Regional Variable								
MEXICO	-0.274***	-0.101	-0.239***	-0.088	-0.264***	-0.097	-0.285***	-0.105
DOMINICAN REPUBLIC	0.313***	0.115	0.239***	0.088	0.269***	0.099	0.280***	0.103
g) Further Variables								
SATISFACTION WITH NATIONAL OFFICERS	0.028***	0.010						
PRO DEMOCRACY 1			0.200***	0.073				
PRO DEMOCRACY 2					0.123***	0.045		
PRIDE							0.249***	0.092
Observations	7422		7233		7146		7483	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, SOUTH AMERICA. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Political participation is a social innovation for Latin America and produces beneficial effects. In the last decades we observe a strengthening of democracy in some Latin American countries, as, e.g., in Chile, Mexico and Argentina. Torgler (2003b) found that a pro democratic attitude has a highly significant positive effect on tax morale in transition countries. We are going to analyse whether this results can also be found for Latin America using the same variables (PRO DEMOCRACY 1⁸ and PRO DEMOCRACY 2⁹). *Table 6* indicates that pro democratic attitudes have a highly significant positive effect on tax morale. An increase in the pro democracy scale by one unit in both cases raises the proportion of persons indicating the highest tax morale by 7.3 (4.5) percentage points. Similarly, we also analyse the effect of pride on tax morale. *Table 6* indicates a positive correlation between pride and tax morale. An increase in pride by one unit raises the share of persons arguing that tax morale is never justifiable by 9.2 percentage points.

We also explore the effects of satisfaction variables on tax morale. We start with the variable FINANCIAL SATISFACTION which is more strongly related to tax payments. To get a broader view, we include then the variables SATISFACTION¹⁰ and HAPPINESS¹¹. *Table 7* presents the results. All three variables significantly affect tax morale in a positive way. Interestingly, the variable HAPPINESS has the highest marginal effects which also corresponds to the findings obtained by Torgler (2003b).

⁸ The question is : “Would you say that having a democratic political system is a very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country” (scale 1 to 4).

⁹ “Democracy may have problems but it’s better than any other form of government” (4=strongly agree, 1=strongly disagree).

¹⁰ All things considered, how satisfied are you with your life as a whole these days? (scale 1 = dissatisfied to 10=satisfied).

¹¹ Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).

Table 7
Tax Morale and Satisfaction, WVS 1995-1997

<i>weighted ordered probit</i> <i>Dependent Variable</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>
<i>Independent Variables</i>	<i>Eq. 5</i>		<i>Eq. 6</i>		<i>Eq. 7</i>		<i>Eq. 8</i>	
<i>a) Demographic Variables</i>	included		included		included		included	
<i>b) Marital Status</i>	included		included		included		included	
<i>c) Employment Status</i>	included		included		included		included	
<i>d) Economic Situation</i>	included		included		included			
INCOME							0.052***	0.019
<i>e) Religiosity</i>	included		included		included		included	
<i>f) Regional Variable</i>								
MEXICO	-0.302***	-0.111	-0.306***	-0.112	-0.256***	-0.094	-0.292***	-0.108
DOMINICAN REPUBLIC	0.289***	0.106	0.277***	0.102	0.299***	0.110	0.289***	0.107
<i>g) Satisfaction</i>								
FINANCIAL SATISFACTION	0.018***	0.006						
SATISFACTION			0.038***	0.014				
HAPPINESS					0.199***	0.073		
Number of observations	7572		7580		7572		7052	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, SOUTH AMERICA. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

IV. CONCLUSIONS

We find a couple of publications about the informal sector in Latin America, but hardly any study that has analysed tax morale. Most of the empirical evidence is centered on the USA, evaluating, e.g., the TCMP program or amnesty data. Thus, it is difficult to know to which extent findings from the United States can be transferred to other countries. Furthermore, audit and amnesty data have a selection bias as only specific individuals participate in an amnesty and not all individuals (especially tax evaders) are measured with audit data. Our data sets have also the advantage that they include a broad variety of socio-economic data. Working with two data sets (Latinobarómetro and World Values Survey) allows to get a robust picture about tax morale in Latin America. These two data sets offer the possibility to do a more refined study covering more than one year.

Our findings indicate that there is a significant correlation between tax morale and the size of shadow economy. Furthermore, people who said they knew/have heard about practised tax avoidance have a significantly lower tax morale than others. Looking at individuals' perceptions of reasons for tax evasion we found that the tax burden, the lack of honesty, and corruption are seen as the main factors. A tax system must be fair in the view of the taxpayers. If a taxpayer feels that she/he is in a sort of unfair contract she/he will probably be less likely to comply (see Torgler 2001b).

In our multivariate analysis we use entire pooled samples to check the robustness of the findings. We could observe a significantly lower tax morale in South America/Mexico than in Central America/Caribbean Area. Especially Mexico has a very low tax morale.

In general, the results indicate that there are alternative tax policy strategies to those assuming that people are knaves who must be controlled to reduce their self-interested behaviour and thus tax evasion. It is not necessary to develop a constitution designed for knaves. Tax law should consider the "spirit of trust", i.e., should include specific rules as self-declaration, which gives taxpayers more scope of their own and supports trustfulness as a motivation to pay taxes. Trust in the president and the officials, the belief that other individuals obey the law and a pro democratic attitude have a significant positive effect on tax morale. The governments and the tax administration have to create confidence in their credibility and their capacity to deliver promised returns for taxes. If such rules yield good results and taxpayers make their decisions to comply with taxation according to past experiences, social capital associated with paying taxes can be created or maintained. Such a social capital stock can reduce the costs of running the government.

APPENDIX

Table A1

Countries

country	years			
Argentina	1984 (WVS)	1991 (WVS)	1995 (WVS)	1998 (LatBa)
Bolivia				1998 (LatBa)
Brazil		1991-1992 (WVS)	1997 (WVS)	1998 (LatBa)
Columbia			1997-1998 (WVS)	1998 (LatBa)
Costa Rica				1998 (LatBa)
Chile		1990 (WVS)	1996 (WVS)	1998 (LatBa)
Dominican Republic			1996 (WVS)	
Ecuador				1998 (LatBa)
El Salvador				1998 (LatBa)
Guatemala				1998 (LatBa)
Honduras				1998 (LatBa)
Mexico	1984 (WVS)	1990 (WVS)	1995-1996 (WVS)	1998 (LatBa)
Nicaragua				1998 (LatBa)
Panama				1998 (LatBa)
Paraguay				1998 (LatBa)
Peru			1996 (WVS)	1998 (LatBa)
Puerto Rico			1995 (WVS)	
Uruguay			1996 (WVS)	1998 (LatBa)
Venezuela			1996 (WVS)	1998 (LatBa)

Notes: WVS: World Values Survey, LatBa: Latinobarómetro.

Table A2

Derivation of Some Variables (Latinobarómetro)

Variable	Derivation
TAX MORALE (dependent variable)	On a scale of 1 to 10, where 1 means not at all justifiable and 10 means totally justifiable, how justifiable do you believe it is to manage to avoid paying all his tax.
TAX AVOIDANCE/AVOID PAYING TAXES	Could you tell me if recently you have known someone or have heard someone you know comment about somebody who has: Managed to avoid paying all his tax (1=yes, 0=no).
TRUST PEOPLE OBEY THE LAW	In general, would you say that people always obey the law, or are there exceptions or particular occasions when people can follow their consciences even if it means breaking the law" (1= always obey the law, 0= follow their consciences).
PERCENTION BEING CAUGHT	Would you say that it is very possible, fairly, a little, or not at all possible that a person in our country who has committed an illegal act gets caught.
TRUST PRESIDENT	Please tell me how much confidence you have in the president (1=not at all, 4=a lot).
SOCIO-ECONOMIC STATUS	Socio-economic status (4=very good, 1=very bad).
FORTUNE	Aggregated sum of the following factors: colour tv, freezer, computer, washing machine, phone, car, second house, drinking water, sewage system (value 0 to 9).
EDUCATION	Age respondent finished education.

Source: Latinobarómetro (1998).

Table A3

Derivation of Some Variables (WVS)

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
EDUCATION	<p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree
RELIGIOUS	We have developed a religiosity variable from the following question in the WVS: Independently of whether you go to church or not, would you say you are a religious person (value 3), not a religious person (2), a convinced atheist (1).
HAPPINESS	Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)
PRIDE	<p>How proud are you to be? (enter your own nationality)</p> <ol style="list-style-type: none"> 1. Not at all proud 2. Not very proud 3. Quite proud 4. very proud
SATISFACTION WITH NATIONAL OFFICERS	How satisfied are you with the way the people now in national office are handling the country's affairs ? Would you say you are very satisfied (4), fairly satisfied (3), fairly dissatisfied (2) or very dissatisfied (1) (scale 1 to 4).
PRO DEMOCRACY1	Would you say that having a democratic political system is a very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country (scale 1 to 4).
PRO DEMOCRACY2	Democracy may have problems but it's better than any other form of government (4=strongly agree, 1=strongly disagree).

Source: Inglehart et al. (2000).

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Alm, J. and J. Martinez-Vazquez (2001). Societal Institutions and Tax Evasion in Developing and Transitional Countries, Conference Paper in Honor of Richard Bird, Public Finance in Developing and Transition Countries, April 4-6, Atlanta.
- Aghón G. and C. Casas (1999). Strengthening Municipal Financing: Difficulties and New Challenges for Latin America, in: K. Fukasaku and L. R. De Mello, Jr. (1999), *Fiscal Decentralisation in Emerging Economies*. Governance Issues. Paris: OECD: 75-86.
- Bahl, R. and J. Martinez-Vazquez (1992). The Nexus of Tax Administration and Tax Policy in Jamaica and Guatemala, in : M. Casanegra de Jantscher and R. M. Bird (eds.), *Improving Tax Administration In Developing Countries*. Washington: International Monetary Fund: 66-110.
- Bejaković, P. (2000). Improving the Tax Administration in Transition Countries, paper presented at the Conference Global Entrepreneurship in the New Millenium, School of Management Syracuse University, Syracuse, New York, USA , August 2000.
- Burgess, R. and N. Stern (1993). Taxation and Development, *Journal of Economic Literature*. 31: 762-830.
- Cabezas, R. M. (1992). Comments to: Tax Administration Reform in Bolivia and Uruguay, in : M. Casanegra de Jantscher and R. M. Bird (eds.), *Improving Tax Administration in Developing Countries*. Washington: International Monetary Fund: 60-65.
- Casanegra de Jantscher, M. and R. M. Bird (1992). The Reform of Tax Administration, in : M. Casanegra de Jantscher and R. M. Bird (eds.), *Improving Tax Administration in Developing Countries*. Washington: International Monetary Fund: 1-18.
- Casanegra de Jantscher, M. , P. dos Santos, J. Escolano, P. Castro (1996). Mexico : Fortalecimiento de la Administración Tributaria Federal, Fiscal Affairs Department, International Monetary Fund, Washington, D.C.
- de Soto, H. (1989). *The Other Path*. The Invisible Revolution in the Third World. New York: Harper & Row.
- de Soto, H. (2000). *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Das-Gupta, A. and D. Mookherjee (1995). Reforming Indian Income Tax Enforcement, IED Discussion Paper Series, No. 52, Institute for Economic Development, Boston University.
- Feld, L. P. and B. S. Frey (2002). The Tax Authority and the Taxpayer. An Exploratory Analysis, paper presented at the 2002 Annual Meeting of the European Public Choice Society Belgirate.
- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.

- Hindriks, J., M. Keen and A. Muthoo (1999). Corruption, Extortion and Evasion, *Journal of Public Economics*. 74: 395-430.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Jain, A. (2001). Corruption: A Review, *Journal of Economic Surveys*. 15: 71-120.
- Jenkins, G. P. (1995). Perspectives for Tax Policy Reform in Latin America in the 1990's, Working Paper, Harvard Institute for International Development (HIID).
- Latinobarómetro (1998). *Codebook 1998*. Chile: Corporación Latinobarómetro.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Martinez-Vazquez J. (2001). Mexico : An Evaluation of the Main Features of the Tax Administration, Working Paper, 01-12, Georgia State University, Atlanta.
- McLure, C. Jr. and S. R. Pardo (1992). Improving the Administration of the Colombia, in: M. Casanegra de Jantscher and R. M. Bird (eds.), *Improving Tax Administration in Developing Countries*. Washington: International Monetary Fund: 66-110.
- Orviska, M. and J. Hudson (2002). Tax Evasion, Civic Duty and the Law Abiding Citizen, *European Journal of Political Economy*. 19: 83-102.
- Rezk, E. (1999). Experiences of Decentralisation and Intergovernmental Fiscal Relations in Latin America, in: K. Fukasaku and L. R. De Mello, Jr. (1999), *Fiscal Decentralisation in Emerging Economies*. Governance Issues. Paris: OECD: 101-120.
- Rose-Ackerman, S. (1997). The Political Economy of Corruption, in: K. A. Elliott (ed.), *Corruption and the Global Economy*. Washington DC: Institute for International Economics: 31-66.
- Schneider, F. (2002). The Size and Development of the Shadow Economies and Shadow Economy Labor Force of 16 Central and South American and 21 OECD Countries: First Results for the 90s, Working Paper, Johannes Kepler University of Linz.
- Silvani C. A. and A. H. J. Radano (1992). Tax Administration Reform in Bolivia and Uruguay, in : M. Casanegra de Jantscher and R. M. Bird (eds.), *Improving Tax Administration in Developing Countries*. Washington: International Monetary Fund: 19-59.
- Spicer, M. W. (1986). Civilisation at a Discount: The Problem of Tax Evasion, *Journal of Public Economics*. 46: 13-20.
- Tanzi, V. (2000). *Policies, Institutions and the Dark Side of Economics*. Cheltenham, UK: Edward Elgar.
- Tanzi, V. and H. H. Zee (2000). Tax Policy for Emerging Markets: Developing Countries, *National Tax Journal*. 53: 299-322.
- Torgler, B. (2001a). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168.
- Torgler, B. (2001b). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.

- Torgler, B. (2002a). The Economic Analysis of “Creative” Compliance, WWZ-Discussion Paper 02/04, Basel: WWZ.
- Torgler, B. (2002b). Preaching Matters: Tax Morale and Religiosity, WWZ-Discussion Paper 02/03, Basel: WWZ.
- Torgler, B. (2003a). Tax Morale and Tax Evasion: Evidence from the United States, WWZ-Discussion Paper 03/02, Basel: WWZ.
- Torgler, B. (2003b). Tax Morale in Transition Countries, forthcoming in: *Post-Communist Economies*.

CHAPTER XII

TAX MORALE IN ASIAN COUNTRIES*

ABSTRACT

This paper analyses tax morale in several Asian countries. The descriptive analysis indicates that tax morale is very low in the Philippines and relatively high in Japan, China, and Bangladesh. In general Asia has a higher tax morale than OECD countries, which might indicate cultural differences. The paper also analyses tax morale as dependent variable and thus gives answers to what shapes tax morale. Pooling the Asian countries indicates, e.g., that trust in government and the legal system have a positive effect on tax morale. These results remain robust for the two countries India and Japan in a time series analysis.

JEL classification: H260, K420, 9160

Keywords: tax morale, tax evasion, shadow economy

* Benno Torgler (2003). Tax Moral in Asian Countries, WWZ-Discussion Paper 03/04, Basel: WWZ.

I. INTRODUCTION

Since the 60s Asia has been a rapidly growing area. But the Asia financial crisis of 1997 led to an output “crash”. Thus, structural reforms have been realised in many countries. Some countries have implemented an expanding fiscal policy (see, e.g., Chang et al. 2002 for South Korea). East Asia provided for many years relatively stable institutional structures. Weder (2002, p. 4) characterised the institutional framework as closely tied with business. Many recent studies stressed the relevance of good economic institutions to perform well. Looking at tax morale and tax compliance, public sector institutions play an essential role. Such institutions include, e.g., a transparent and fair tax system, uncorrupt tax bureaucrats, and a government taxpayers trust. The perceived quality of the public administration and the government creates trust and positively influences tax morale (see, e.g., Torgler 2002a, 2003a). In general, the bureaucrats in East Asia are seen as competent, independent and highly motivated, securing property and contract rights (Weder 2002). However, we are going to see that in some Asian countries there are deficits in the tax administrations. We are going to analyse countries in East Asia (China, South Korea, Japan, Taiwan), in South Asia (Bangladesh and India), and in South East Asia (Philippines).

Some Asian countries are faced with a redefined state role, setting new constitutional rules. In China, e.g., reforms towards a market economy are observed. In line with these movements, fiscal reforms regarding the design of the taxes and the organisation and administration of tax departments are observed. Asian countries have in general a modern tax system but corruption of the tax administration is a common phenomenon.

This paper attempts to analyse tax morale in Asian countries evaluating the World Values Survey. We are going to work with a pooled sample to get a robust picture of tax morale in Asia and will pay attention to specific cases covering more than one year to undertake a more refined study of the factors that influence tax morale. Only a few papers have focused on tax evasion in Asia (see, for example, Das-Gupta, Lahiri and Mookherjee 1995, Wong 2001, Manasan 2000). Thus, new empirical evidence helps reduce these shortcomings.

When implementing cross-country studies it could be criticised that a translation of the questions to assess tax morale into different languages and cultures might cause biases in the analysis. However, we believe that this problem can be reduced focusing on a specific region as Asia and controlling for possible cultural differences with dummy variables. Furthermore, we do not only compare levels of tax morale but rather seek to identify determinants of tax

morale in a multivariate analysis. A broad data set allows to get better insights regarding these determinants and time series analysis help to find out general tendencies rather than time specific influences.

Section II gives a general overview on taxation in Asia. Section III covers the empirical part. We start with a descriptive analysis of the size of tax morale in the countries Bangladesh, China, India, Japan, Taiwan, South Korea, and the Philippines, covering the years between 1981 and 1997. The multivariate analysis works with the broadest data basis (years 1995-1997) differing between East Asia, South Asia, and South East Asia and pooling the data. Section IV focuses on India and Japan in a multivariate time series analysis. The paper finishes in Section V with some concluding remarks.

II. TAXATION IN ASIA

The tax system and the tax administration in a country might be key determinants that influence tax compliance. However, one of the main problems of many countries, especially developing countries, is the limited ability to collect tax revenues. Thus, many countries are faced with the challenge to modernise the tax administration. In the implementation of the tax system, tax administrations play a key role. Many researchers point out that tax administration is tax policy (see, e.g., Casanegra de Jantscher and Bird 1995). As tax morale might be influenced by equity considerations, the input-output relationship and thus the link between tax paid by the citizens and the work done by the government and the administration are important.

In some Asian countries we can observe a change of the fiscal system which might have an effect on tax morale. We observe, for example, a transition from a plan to a market system in China. China is a unitary country with central government tax power. All tax bases and tax rates are determined centrally. Local governments with 50'000 entities collect the taxes and have the control over fiscal resources. This allows a certain autonomy in revenue and expenditure for the local governments. Since the market reforms the intergovernmental transfer system has changed several times, remaining complicated and not transparent (Rao 2001). Transformation processes are often faced with problems when, for example, income taxes are relatively new like in China. Wong (2001) gives an overview on tax resistance in China. Since the economic reforms in the late 80s, the centre had problems to extract revenues from the lower jurisdiction levels, as due to a more severe competition of townships and

villages, enterprises have been removed from central government control. Tax resistance, for example, increased after 1994 when tax reforms were designed to increase the central revenues with the consequence of a higher tax burden in areas with little new industries. Wong (2001, p. 81) cites Jacob (1996) who mentions a case where a farmer refused to pay taxes in Shandong. As the authority persuaded him to pay, he blew himself and a tax administrator up with 7 kg of explosives.

Thus, it might be important that the transformation process goes in line with a decentralisation of structures and institutions. Many economists point out the relevance to give sub-national governments the taxing power (see, e.g., Bahl 1999). The strength of decentralised systems is a better transparency of this input-output relationship. It has the advantage that citizens' preferences can be met better. Decentralisation is relevant, especially in large countries as China or India. In such states the collecting process can cause some difficulties, imposing high costs and generating a low amount of tax revenues. India, e.g., has a high proportion of low income households and thus only a low percentage of individuals who have to pay income taxes. Modern information systems could help increase the identification of potential taxpayers. Das-Gupta and Mookherjee (1995) report about reforms in India aiming at computerising the information system with a basic taxpayer identification. They mention that computerisation has the following benefits:

“(i) a tamper-proof, readily accessible and updateable information base on the identity of taxpayers, their payment records, and third party information; (ii) cross-matching of information from different sources concerning the activities of any taxpayer, (iii) efficient collection of tax recovery operations; (iv) sophisticated audit selection programs and enhanced information on taxpayer activities speedily available to tax auditors during audits; (v) less corruption owing to reduced scope for person-to-person contact between officials and taxpayers, and reduced auditor discretion over conduct of audits; (vi) improved taxpayer information and assistance services; and (vii) a comprehensive information base for managerial planning and supervision” (p. 20).

However, computerisation needs the adequate knowledge. In China, e.g., the process of computerising the tax administration encountered difficulties due to deficits in staff trainings and hardware/software maintenance. They had to reduce the computerisation efforts from 30'000 collection stations to 3'000 (Silvani and Baer 1997, p. 20). As a consequence, a transfer from the lowest operational level to the district level has been observed. This result indicates the importance of regularly training the tax administration staff from the lowest to

the highest level. Furthermore, decentralised stations need enough own resources to maintain the infrastructure and enough autonomy regarding various aspects as local revenues and the structure of the tax administration (salaries, training etc.) to maintain flexibility. Good working conditions including salaries are essential to enhance the productivity of a tax administration.

As our multivariate analysis is particularly focused on India and Japan, the following subsections treat taxation issues of these countries.

1. India

India, a former British colony with a multiparty democratic policy, is an interesting country to analyse. Functions and finances are cut off between the centre and the 28 states. Rao (2001) defines India as “quasi-federal” (p. 7). The centre taxes non-agricultural incomes. On the other hand, agricultural income and sales taxes are levied by the states. Rao (2001) however criticises that

“The quarter million rural local governments representing over 65 per cent of population of the country raise 0.04 per cent of GDP or 0.3 per cent of total revenues and after receiving transfers from the states, they have command over fiscal resources of only 1.3 per cent of GDP or 6.4 per cent of total revenues” (p. 10).

This indicates the low fiscal decentralisation at the regional level. Thus, according to Rao (2001) it is difficult for local governments to deliver adequate services.

Das-Gupta et al. (1995) report that collection from income taxes was very low during the years 1971-1990, covering about 1.2% of the GDP with an average per capita income below \$360. *Table 1* shows the tax structure in India compared to other countries. We can observe that income taxes as a percentage of GDP and as a percentage of total taxes are at a very low level. In these years two main tax reforms have been done (e.g., reduction of tax rates and progressivity, changes in the enforcement strategies). Das-Gupta et al. (1995) analysed empirically the compliance development over time and found that compliance declined over the period 1971-1990, contrary to the positive trend of the income tax revenues. An increase in the average tax rates reduced tax compliance. On the other hand tax cuts done in 1974 and 1985 went in line with a higher compliance. Interestingly these authors found that prosecution activities are ineffective for increasing compliance.

In the 90s India reformed the tax rates but relatively few efforts have been made to improve tax administration (see Das-Gupta and Mookherjee 1995). The authors criticised that corruption was widespread at the Indian Income Tax Department and tax procedures imposed high compliance costs on taxpayers.

Table 1
Tax Structure in India Compared to Other Countries in the late 80s

Income Tax Revenues			
	Total	Individual	Corporate
<i>As percentage of GDP</i>			
<i>Per Capital Income (Countries)</i>	3.5	1.4	2.2
360-749 \$	5.7	2.5	2.9
750-1619 \$	6.0	2.2	4.1
1620-6000 \$	6.8	2.1	3.8
All Developing	5.5	2.1	3.3
Above 6000 \$ (Industrial)	11.0	8.5	2.4
<i>India</i>	<i>2.1</i>	<i>1.0</i>	<i>1.1</i>
<i>As percentage of total tax revenues</i>			
<i>Per Capital Income (Countries)</i>			
Below 360 \$	24.7	9.7	15.6
360-749 \$	29.2	12.9	14.9
750-1619 \$	32.1	11.7	21.9
1620-6000 \$	34.4	10.8	19.2
All Developing \$	30.5	11.5	18.2
Above 6000 \$ (Industrial)	35.1	27.1	7.6
<i>India</i>	<i>18.4</i>	<i>8.7</i>	<i>9.6</i>

Source: Burgess and Stern (1993, p. 771), Das-Gupta and Mookherjee (1995, p. 18).

In 1991 the new Indian government conducted fiscal reforms with a more market oriented focus. Reforms reduced the gross fiscal deficit of the Union government but not the states' fiscal deficits. *Table 2* reports that the centre (states) average revenue receipts (total tax revenue) as % of GDP fell from 9.8 (7.4) in the 80s to 9.2 (6.7) percent. On the other hand the states' average values remained stable in the 80s and 90s (see Sarma and Gupta 2002). The authors report that tax reforms at the Union level had a positive impact on direct taxes, with an annual growth rate of 19.5 percent in the 1990s compared to 11.9 percent in previous

decades. Particularly personal taxes performed better with an annual growth rate of 25.3 percent. As possible reasons the authors mention that the tax reforms covered “tax rate, rationalization, simplification, and measures towards easy compliance” (p. 12).

Table 2
Revenue Receipts as % of GDP in India

Year	Centre		States	
	Total Revenue Receipts	Total Tax Revenue	Total Revenue Receipts	Total Tax Revenue
1981-1982	8.9	6.8	10.9	7.4
1982-1983	9.2	6.9	11.2	7.5
1983-1984	9.0	7.0	10.9	7.2
1984-1985	9.5	7.1	11.1	7.3
1985-1986	10.0	7.5	11.9	7.8
1986-1987	10.6	7.8	12.2	8.0
1987-1988	10.4	7.9	12.4	8.2
1988-1989	10.3	8.0	11.9	7.8
1989-1990	10.7	7.9	11.6	8.0
1990-1991	9.7	7.6	11.7	7.8
1991-1992	10.1	7.7	12.3	8.1
1992-1993	9.9	7.2	12.2	8.1
1993-1994	8.8	6.2	12.3	8.0
1994-1995	9.0	6.7	12.1	8.0
1995-1996	9.3	6.9	11.6	7.9
1996-1997	9.3	6.9	11.2	7.8
1997-1998	8.8	6.3	11.2	8.0
1998-1999	8.5	5.9	10.0	7.3
1999-2000	9.3	6.6	11.1	7.7
2000-2001	8.8	6.3	11.2	8.1
Average 80s	9.8	7.4	11.6	7.7
Average 90s	9.2	6.7	11.5	7.9
Rate of Growth 80s (%)	16.3	16.2	15.4	15.5
Rate of Growth 90s (%)	13.6	13.0	12.7	14.1

Source: Sarma and Gupta (2002, p. 27).

Das-Gupta and Mookherjee (1995, pp. 27-29) describe the audit process in India. While in the early 1970s about 60 percent of taxpayers were audited, in the 1990s we observe values below 3 percent, which is in line with international practice as e.g., in the United States (for the United States, see, e.g., Andreoni, Erard and Feinstein 1998). The growing workload over the decades might be one reason. In line with this decrease the audit intensity was increased. However, Das-Gupta and Mookherjee (1995) critically point out that a tax officer on average

has three days time to spend per audit putting into account that on average only about 20 percent of the time is spent on field enquiries.

In general, the situation in India indicates that there is room for tax administration reforms which might have a positive effect on tax compliance and tax morale. In the next subsection we are going to see the reform process in Japan which seems to be a successful story.

2. Japan

In 1940 the income tax was exclusively applied to separate corporate income taxation from the single form of income taxation (see, e.g., Okada 2002a, Usui 2002). Since then it has developed as the most dominant tax item covering around 40 percent of total national tax revenues since the 70s¹. Contrary to India more than 40 percent of the population paid income taxes in 1999. The revenue collected in the fiscal year 2000 was 157.9 billion US\$ (Usui 2002, p.1).

The country had to be reorganised after World War II. In 1949 the National Tax Agency (NTA) was established and a self-assessment system for the main taxes was introduced signalling trust in taxpayers (Okada 2002b). Usui (2002, p. 6) reports that in 1948 around 70 percent of the taxpayers who were required to fill out the tax return had made filling mistakes or had not filled the returns at all. The percentage of tax delinquency exceeded 40 percent. These results indicated that the self-assessment system was implemented too fast. Furthermore, the fact that Japanese people were confronted with high tax burdens undermined the efficiency of a self-assessment system. In 1950 main reforms were realised: a reduction of the income tax burden, the simplification of the tax returns, and the development of a certified tax accountant system to improve taxpayer assistance. The income tax revenue however decreased in 1950 (92.6 billion Yen) compared to 1949 (137.3 billion Yen) (Usui 2002, p. 8). On the other hand, the end of inflation improved stability. Furthermore, a substantial reduction of the income tax burden, and the intense interaction between tax administration and taxpayers (taxpayers had to visit the tax office to prepare the tax return under tax officials' guidance) considerably reduced the amount of corrections and tax determinations (Usui 2002).

¹ However, Usui (2002) reports that the modern tax system for personal income already started with the implementation of Income Tax Law in July 1887, being one of the earliest records of income tax in the world.

Okada (2002b) points out that at present the tax agency has made great efforts to provide the public with tax information via television, radio, internet and newspapers, distributing pamphlets and booklets and organising every November a “Know-Your-Tax” (p. 2) with round-table discussions and essay competitions for students about taxation. It is interesting to see how taxpayers are treated by the tax administration. If taxpayers make obvious errors they are informed and the result of the examination is explained to them, to make them understand the errors. Such procedures indicate that the tax administration in Japan tries to be fair to the taxpayers. Institutions and procedures taxpayers perceive as fair and efficient might have a positive effect on tax morale. Interestingly, Feld and Frey (2002) found in an empirical analysis in Switzerland that respectful treatment of taxpayers by the tax administration reduces tax evasion.

Okada (2002b) also gives a broad survey on training programs for tax administrators. The central organisation is the National Tax College (NTC) including 12 branches nationwide, which work together with academics, among them many university professors giving lectures at the college. Such a structure shows that Japan contrary to other Asian countries invests efforts to have a highly trained tax administration. Furthermore, the salaries of the tax administrators according to Okada (2002b) are slightly higher than for officials engaged in other government sections, which are paid at a level comparable to the private sector. This reduces the incentive for tax officials to demand bribes.

In the years 1994, 1995, and 1996 tax reforms reduced taxpayers’ tax burden. In 1999 the top tax rate was cut from 50% to 37% and a proportional tax reduction of 20% was observed (Okada 2002a, p. 2). Okada (2002a, p. 4) reports in 2001 a ratio of tax burden (ratio of taxes to the national income) of 22.6%, lower than in the United States (1997, 26.1%), UK (1996, 38.2%), Germany (1997, 29.2%, France (36.7%) and Italy (42.2%).

In general, the intense interaction between the tax administration and the taxpayers, based on trust, might be an essential determinant for tax compliance and the very high tax morale in Japan, as we will see in the following.

III. EMPIRICAL ANALYSIS

1. Descriptive Analysis

Before starting with the multiple regression, we present a descriptive analysis of the degree of tax morale in Asian countries. *Table 3* presents the results. Columns 2, 3, 4 show for different years for each country the percentage of individuals saying that tax evasion is never justifiable, and the columns 5, 6, and 7 indicate the mean values for all countries based on a scale from 0 to 3, where 3 is the highest tax morale (value 0 integrates values 4 to 10).

We can observe relatively stable values in Japan, China and India. On the other hand, South Korea's values change strongly, with the peak point for the years 1990-1993. Compared to the other countries the Philippines have a very low tax morale. Only 38.2 percent of the individuals state that cheating on tax is never justifiable, and the average scale value is only 1.583. These results go in line with the degree of tax evasion reported by Manasan (2000). He reports high individual income tax evasion rates in the years 1985 to 1999, but with a decay over time between these two years. In 1985 the tax evasion rate was 73.10 percent compared to 60.81 in 1999. *Table 3* shows that Taiwan has also a relatively lower tax morale than other Asian countries. Chu (1990, p. 393) reports that in Taipei, 94% of interviewees in a survey admitted to having been led to bribe corrupt tax administrators in exchange of their collusion in tax evasion. Furthermore, out of 54 certified public accountants 46 admitted to having the experience of bribing the tax officials in charge.

It might be interesting to compare the degree of tax morale with another region. *Table A1* in the Appendix reports the degree of tax morale in OECD countries. We can observe a significantly higher tax morale in Asian countries. In general, some authors have stressed that in Asian cultures the relevance of not deviating from society norms is valued very highly. Such a norm compliance might also be reflected by a high degree of tax morale. Helliwell (1996), for example, points out that

“the development success in Asia, and especially in South-East Asia, lies in a tighter and more robust set of social institutions than those found elsewhere in the modern world” (p. 13).

Table 3
Tax Morale in Asia

Country	Tax Evasion Is Never Justifiable (%)			Mean		
	1981-1984	1990-1993	1995-1997	1981-1984	1990-1993	1995-1997
Bangladesh			96.3			2.930
China		78.7	79.0		2.619	2.613
India		82.9	77.0		2.614	2.519
Japan	81.8	81.9	80.6	2.603	2.636	2.621
Philippines			38.2			1.583
South Korea	76.4	89.9	71.6	2.560	2.697	2.416
Taiwan			63.7			2.263
Average	79.1	83.4	72.3	2.582	2.641	2.421

Notes: Own calculations from the World Values Surveys. Columns 2, 3 and 4: percentage of individuals saying that tax evasion is “never justified”. Columns 5, 6, 7: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

In a next step, we are going to look at the size of shadow economy in Asian countries. Measuring the underground economy is one method to assess the extent of tax evasion. Furthermore, while tax morale covers the values/attitude dimension, the size of shadow economy can be seen as an output variable. *Table 4* presents the size of shadow economy in percent of the GDP/GNP. Similar to our findings where we have observed that the Philippines had the lowest tax morale among the evaluated Asian countries. They also have the biggest size of shadow economy. On the other hand, countries as Japan and China have a high tax morale and a small size of shadow economy. A contradictory result can only be observed for Bangladesh, having a high tax morale but a relatively big size of shadow economy.

Table 4

Size of Shadow Economy (as % of GDP and GNP) in Asia

Country	Average 1989-90 (as % of GDP)	Average 1990-93 (as % of GDP)	Average 1999/2000 (as % of GNP)
Bangladesh			35.6
China			13.1
India	22.4		23.1
Japan	13.2	8.5	11.3
Philippines	50.0		43.4
South Korea	38.0	20.3	27.3
Taiwan		16.5	19.6

Source: Schneider and Enste (2000, p. 100). Schneider (2002, p. 9).

2. Multivariate Analysis: What Shapes Tax Morale in Asia?

We are going to build dummies to control different cultures. We differentiate between East Asia, South Asia, and South East Asia. Furthermore, our data set allows to differentiate former British colonies (India, Bangladesh in South Asia) and other countries. In general, the British colonies had a more limited government. In line, the Common law allowed greater political freedom and bureaucratic efficiency (La Porta et al. 1999). The tax system of the British colonies was influenced by the British tax structure (e.g., assessment, legal customs, tax administration structure and rules). Furthermore, much importance has been given to the procedures of law. Treisman (1999) cites Eckstein (1966, p. 265) who pointed out that

“The British ... behave like ideologists in regard to rules and like pragmatists in regard to policies. Procedures, to them, are not merely procedures, but sacred rituals”.

Such a structure might have a positive effect on tax morale and it could be hypothesized that countries with a former British tradition have a higher tax morale than other countries. In our data India and Bangladesh have been former British colonies. Thus, we are going to differentiate with dummy variables former British (in South Asia) and non-British countries (in East Asia). As the Philippines cannot be classified as a former British colony, but have a different cultural background than other non former British colonies (in South East Asia) in our data, we have built an additional dummy variable for this country. It should be noticed

that our number of countries does not allow a clear and robust comparison of this differentiation. Furthermore, the high value of Bangladesh might strongly affect this comparison. Thus, the results should be treated with caution.

Table 5 presents the results. Looking at the regional variables, the regression results are comparable to the descriptive statistics. People from the Philippines have a significantly lower tax morale than people from the reference group (non former British countries NFB). Being Philippine rather than from a NFB country reduces the probability of stating that tax evasion is never justified by 27.8 percentage points. In the least squares estimation, Philippines on average report around 0.84 score points less tax morale than the reference group. Furthermore, former British colonies have a higher tax morale than the reference group.

Age groups from 30 to 65+ have the tendency to a higher tax morale than the reference group 16-29. The highest marginal effects can be observed for the category 50-64, having a highly significant coefficient. The proportion of persons in this group who report the highest tax morale is 6 percentage points higher than for the reference age group. One reason might be that age is correlated with acquirement of social stakes (see, e.g., Tittle 1980). Married and widowed people have a significantly higher tax morale than singles. The proportion of self-employees (unemployed) who report the highest tax morale is 6.1 (5.7) percentage points lower than of full-time employees. The results are in line with the argumentation that higher compliance costs and higher opportunity costs of being honest reduce tax morale. Furthermore, unemployed individuals might have a higher incentive to act in the shadow economy which might influence their attitude regarding tax evasion.

The intention in the first estimations was to maximise the number of observations, because in the data screening process answers as “don’t know” and missing values have been eliminated in all estimations. In further estimations we are going to control for education and the economic situation.

One of the main variables we will analyse in the pooled estimations and in the specific country estimations is trust in government and the legal system. Thus, we are going to analyse trust as a key factor that influences tax morale (see also Torgler, 2002a, Torgler 2003a, 2003b, 2003c). In Section II we have stressed the relevance of the government and the tax administration to enhance tax morale. Thus, we are going to integrate proxies that measures taxpayers’ trust. *Table 6* presents the results, focusing only on weighted ordered probit models.

Table 5
Determinants of Tax Morale in Asia (WVS 1995-1997)

<i>Dependent Variable: Tax Morale</i>	<i>Weighted Least Squares</i>		<i>Weighted Ordered Probit</i>		
<i>Independent Variables</i>	<i>Eq. 1</i>	<i>t-Stat</i>	<i>Eq. 2</i>	<i>z-Stat.</i>	<i>Marg.</i>
	<i>Coeff.</i>		<i>Coeff.</i>		
a) Demographic Factors					
AGE 30-49	0.042	1.538	0.052*	1.699	0.017
AGE 50-64	0.142***	3.945	0.181***	4.550	0.060
AGE 65+	0.065	1.131	0.103*	1.748	0.034
FEMALE	0.027	1.120	0.041*	1.649	0.013
b) Marital Status					
MARRIED	0.056*	1.819	0.084***	2.653	0.028
LIVING TOGETHER	0.117	1.113	0.198*	1.712	0.066
DIVORCED	0.193*	1.805	0.266*	1.821	0.088
SEPARATED	0.091	0.734	0.159	0.998	0.053
WIDOWED	0.126**	2.434	0.212***	3.401	0.070
c) Employment Status					
PART TIME EMPLOYED	0.039	1.021	0.076*	1.853	0.025
SELFEMPLOYED	-0.136***	-4.624	-0.185***	-5.866	-0.061
UNEMPLOYED	-0.165***	-3.443	-0.172***	-3.449	-0.057
AT HOME	-0.036	-1.045	-0.055	-1.421	-0.018
STUDENT	-0.018	-0.366	-0.007	-0.151	-0.002
RETIRED	-0.046	-0.733	-0.081	-1.268	-0.027
OTHER	0.125*	1.744	0.295***	3.620	0.097
e) Regional Variable					
FORMER BRITISH COLONY (SOUTH ASIA)	0.224***	8.690	0.381***	10.180	0.126
PHILIPPINES	-0.842***	-27.142	-0.843***	-27.432	-0.278
Observations	9634		9634		
Prob(F-statistic)	0.000				
Prob(LM-statistic)			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NON FORMER BRITISH COLONY STATES (EAST ASIA). Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). Weighting variable: country weight variable was multiplied by a constant for each country, in order to produce an equal weighted N for each survey.

Table 6
Tax Morale and Trust in Asia (1995-1997)

<i>Weighted Ordered Probit</i>	<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent Variable: Tax Morale</i>						
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>						
AGE 30-49	0.034	0.011	0.083**	0.027	0.079**	0.026
AGE 50-64	0.166***	0.055	0.268***	0.087	0.267***	0.087
AGE 65+	0.167**	0.056	0.155**	0.050	0.109	0.035
FEMALE	0.026	0.009	0.040	0.013	0.043	0.014
EDUCATION	0.029***	0.010				
<i>b) Marital Status</i>						
MARRIED	0.082**	0.027	0.017	0.006	0.032	0.011
LIVING TOGETHER	0.088	0.029	0.029	0.010	0.046	0.015
DIVORCED	0.309	0.103	0.195	0.063	0.179	0.058
SEPARATED	0.168	0.056	0.124	0.040	0.014	0.005
WIDOWED	0.205**	0.068	0.133*	0.043	0.147*	0.048
<i>c) Employment Status</i>						
PART TIME EMPLOYED	0.060	0.020	0.062	0.020	0.059	0.019
SELFEMPLOYED	-0.197***	-0.066	-0.196***	-0.064	-0.192***	-0.062
UNEMPLOYED	-0.163***	-0.055	-0.174***	-0.057	-0.185***	-0.060
AT HOME	-0.036	-0.012	0.016	0.005	0.016	0.005
STUDENT	0.018	0.006	-0.009	-0.003	-0.009	-0.003
RETIRED	-0.023	-0.008	-0.092	-0.030	-0.055	-0.018
OTHER	0.412***	0.137	0.191**	0.062	0.215**	0.070
<i>d) Economic Situation</i>						
UPPER CLASS	-0.748***	-0.249	-0.636***	-0.207	-0.651***	-0.211
UPPER MIDDLE CLASS	-0.144***	-0.048	-0.087*	-0.028	-0.073	-0.024
LOWER MIDDLE CLASS	0.003	0.001	0.065	0.021	0.072	0.023
WORKING CLASS	-0.097**	-0.032	0.016	0.005	0.021	0.007
<i>e) Regional Variable</i>						
FORMER BRITISH COLONY	0.399***	0.133	0.554***	0.180	0.566***	0.184
PHILIPPINES	-0.915***	-0.305	-0.857***	-0.279	-0.851***	-0.276
<i>f) Trust</i>						
TRUST IN GOVERNMENT			0.061***	0.020		
TRUST IN THE LEGAL SYSTEM					0.074***	0.024
Observations	7272		6833		6899	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, NON FORMER BRITISH COLONY STATES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). Weighting variable: country weight variable was multiplied by a constant for each country, in order to produce an equal weighted N for each survey.

Both trust variables are highly significant. An increase in the trust in government (trust in legal system) scale by one unit increases the share of subjects indicating the highest tax morale by 2 (2.4) percentage points. Thus, trust is highly correlated with tax morale in a positive way. Previous control variables remain stable. Education as an additional variable has a significant positive effect on tax morale. Better educated taxpayers are supposed to be better aware of the benefits and services the state provides for the citizens from the revenues, which might have positive effects on tax morale. Furthermore, people who defined themselves as members of the upper class, upper middle class and working class have a significantly lower tax morale than the lowest class.

Table 7
Tax Morale and Happiness in Asia (1995-1997)

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent Variable: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>Eq. 6</i>		<i>Eq. 7</i>		<i>Eq. 8</i>	
<i>a) Demographic Variables</i>	included		included		included	
<i>b) Marital Status</i>	included		included		included	
<i>c) Employment Status</i>	included		included		included	
<i>d) Economic Situation</i>	included		included		included	
<i>d) Regional Variable</i>						
FORMER BRITISH COLONY	0.528***	0.167	0.460	0.144	0.410	0.132
PHILIPPINES	-0.889***	-0.281	-0.941	-0.295	-0.914	-0.295
<i>e) Satisfaction</i>						
FINANCIAL SATISFACTION	0.018***	0.006				
SATISFACTION			0.025***	0.008		
HAPPINESS					0.105***	0.034
Number of observations	8488		7308		8626	
Prob(LM-statistic)	0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, NON FORMER BRITISH COLONY STATES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). Weighting variable: country weight variable was multiplied by a constant for each country, in order to produce an equal weighted N for each survey.

We also explore the effects of satisfaction variables on tax morale (see also Torgler 2003b, 2003c). We start with the variable FINANCIAL SATISFACTION². To get a broader view and to consider the fact that quite a few citizens in some Asian countries as India, the Philippines, or Bangladesh have a low living standard, we include the variables SATISFACTION³ and HAPPINESS⁴. *Table 7* presents the results. All three variables significantly affect tax morale in a positive way, showing the highest marginal effects for the variable HAPPINESS which is in line with the evaluations done by Torgler (2002b, 2002c).

3. Multivariate Analysis in India and Japan

In a further step, the paper looks at two different Asian countries: India, a former British colony with a multiparty democratic policy and with a low average living standard, and Japan, a highly developed and important OECD country. This allows to check to which extent the effects of the independent variables on tax morale are similar, despite institutional and cultural differences.

Furthermore, we are going to analyse the development of tax morale over time and check if the independent variables are robust over time. In India, data from the years 1995/1996 and 1990 are available, in Japan for the years 1981, 1990 and 1995. We are going to analyse the newest data separately before pooling them together using time dummy variables. This allows to undertake a more refined study. However, such a procedure will reduce the number of observable variables as not all mean independent variables have been integrated in all WVS waves.

1. India

Table 8 presents the results of the year 1995/96. Similar to the pooled estimations, the coefficient for the variable TRUST IN GOVERNMENT is significant. The marginal effects are also comparable showing that an increase in the trust scale by one unit increases the share of

² How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied).

³ All things considered, how satisfied are you with your life as a whole these days? (scale 1 = dissatisfied to 10=satisfied).

⁴ Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).

subjects indicating that tax morale is never justifiable by 2.5 percentage points. Furthermore, the variable pride has been integrated into the equation. We find a positive correlation between pride and tax morale. An increase in pride by one unit raises the share of persons arguing that tax morale is never justifiable by 6.4 percentage point

As already mentioned, India has a multiparty democratic structure. Thus, it might be interesting to analyse whether a pro democratic attitude has a positive effect on tax morale (PRO DEMOCRACY 1⁵ and PRO DEMOCRACY 2⁶). The results indicate that this hypothesis cannot be rejected. We observe a significant correlation between a pro democracy attitude and tax morale with a higher marginal effect for the second variable (for similar results see Torgler 2003b, 2003c).

In the estimations where we have pooled countries, we have not considered the variable income in the models, because of measurement difficulties for comparisons between the countries. Looking at specific countries as Japan and India we have the possibility to integrate this variable into the equations. However, as the income variable has many lacking values, we integrate it separately in the estimations.

Looking at the control variables we observe the tendency that the lowest age group has the lowest tax morale. Furthermore, in the equation with the highest observation education has a positive effect on tax morale. In the same equation the coefficient for the variable SELFEMPLOYED is significant with a negative sign and a marginal effect of 6.6 percentage points. Students tend to have a higher tax morale than full-time employed. Robust results can be found regarding the economic situation of the taxpayers using the two proxies economic status and income. A higher economic situation leads to a significantly lower tax morale. We can observe that the marginal effects increase with an increase in the economic class and an increase in the income scale by one unit reduces the share of individuals stating that tax evasion is never justifiable by 2.2 percentage points.

⁵ The question is : “Would you say that having a democratic political system is a very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country” (scale 1 to 4).

⁶ “Democracy may have problems but it’s better than any other form of government” (4=strongly agree, 1=strongly disagree).

Table 8
Tax Morale in India 1995-1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent Variable: Tax</i>										
<i>Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.235**	0.062	0.184**	0.052	0.139	0.034	0.094	0.023	0.219**	0.060
AGE 50-64	0.285*	0.075	0.165	0.046	0.271*	0.066	0.210	0.051	0.229	0.060
AGE 65+	0.114	0.030	0.003	0.001	0.149	0.037	0.088	0.021	0.041	0.034
FEMALE	0.119	0.031	0.139	0.039	0.154	0.038	0.179	0.044	0.166	0.041
EDUCATION	0.033*	0.009	0.046***	0.013	0.012	0.003	0.015	0.004	0.008	0.002
b) Marital Status										
MARRIED	0.158	0.041	0.167	0.047	0.207	0.051	0.197	0.048	0.054	0.019
DIVORCED	-0.316	-0.083	-0.068	-0.019	-0.426	-0.104	-0.610	-0.148	6.641	1.791
SEPARATED	-1.085**	-0.284	-0.504	-0.142	-0.851*	-0.208	-0.759	-0.184	-1.149**	-0.302
WIDOWED	-0.025	-0.007	-0.086	-0.024	0.790	0.193	0.737	0.179	-0.268	-0.039
c) Employment Status										
PART TIME EMPLOYED	-0.073	-0.019	0.037	0.011	-0.124	-0.030	0.053	0.013	0.002	-0.009
SELFEMPLOYED	-0.117	-0.031	-0.233**	-0.066	-0.160	-0.039	-0.120	-0.029	-0.171	-0.049
UNEMPLOYED	-0.101	-0.026	-0.145	-0.041	-0.133	-0.033	-0.029	-0.007	-0.062	-0.014
AT HOME	0.142	0.037	-0.009	-0.003	0.083	0.020	0.117	0.028	-0.027	-0.011
STUDENT	0.367**	0.096	0.304	0.086	0.320*	0.078	0.314*	0.076	0.233	0.063
RETIRED	-0.051	-0.013	-0.020	-0.006	-0.182	-0.045	-0.090	-0.022	-0.117	-0.044
OTHER	-0.458***	-0.120	-0.737	-0.208	-1.548	-0.379	6.493	1.576	-0.546	-0.157
d) Economic Situation										
UPPER CLASS	-0.915***	-0.240	-1.107***	-0.312	-0.837***	-0.205	-0.804***	-0.195		
UPPER MIDDLE CLASS	-0.508***	-0.133	-0.728***	-0.205	-0.512***	-0.125	-0.466***	-0.113		
LOWER MIDDLE CLASS	0.081	0.021	-0.098	-0.028	0.069	0.017	0.119	0.029		
WORKING CLASS	0.044	0.012	-0.308	-0.087	0.025	0.006	0.120	0.029		
INCOME									-0.082***	-0.022
e) Further Variables										
TRUST IN GOVERNMENT	0.096**	0.025								
PRIDE			0.229***	0.064						
PRO DEMOCRACY 1					0.100*	0.024				
PRO DEMOCRACY 2							0.240***	0.058		
Observations	1585		1819		1484		1393		1424	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

In a next step we are going to estimate the same equations implementing the information about individuals' religion. Region might have an effect on tax morale. Looking at Asia, religion can be seen as a proxy for a specific culture as, e.g., Hinduism, Islam or Buddhism. In literature it has been used as a proxy for work ethic, tolerance, trust and other characteristics (see, e.g., La Porta et al. 1999). Thus, it could be hypothesized that tax morale differs among religions.

Table 9
Religion and Tax Morale in India, 1995-1996

<i>Weighted Ordered Probit</i> <i>Dependent Variable: Tax</i> <i>Morale</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Independent Variables</i>	6	<i>Effect</i>	7	<i>Effect</i>	8	<i>Effect</i>	9	<i>Effect</i>
a) Demographic Variables	included		included		included		included	
b) Marital Status	included		included		included		included	
c) Employment Status	included		included		included		included	
d) Economic Situation	included		included		included		included	
e) Religion								
CHRISTIAN	0.136	0.035	0.174	0.049	0.225	0.055	0.137	0.033
MOSLIM	0.432***	0.112	0.318***	0.089	0.268**	0.065	0.323**	0.077
NO RELIGION	0.485**	0.126	0.483**	0.135	0.509**	0.124	0.709***	0.170
OTHER RELIGION	0.503**	0.130	0.598***	0.167	0.509**	0.124	0.492*	0.118
e) Further Variables								
TRUST IN GOVERNMENT	0.086**	0.022						
PRIDE			0.225***	0.063				
PRO DEMOCRACY 1					0.102*	0.025		
PRO DEMOCRACY 2							0.231***	0.055
Number of observations	1580		1813		1480		1389	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, HINDU. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

The descriptive analysis shows that most of the interviewed individuals were Hindus (77.4 percent), followed by Muslims (12 percent). Thus, we use the dummy variable HINDU as reference group. *Table 9* indicates that the minority (religion) groups have a significantly higher tax morale than the reference group. The marginal effects for the groups Muslim, other religion and no religion are relatively high. Other main variables remain robust.

In a next step we are going to pool the data from 1990 and 1995/1996 to obtain a robust picture about what shapes tax morale in India. *Table 10* presents the results. We can observe a significant decay of tax morale over time. Inhabitants of India had a lower probability of reporting the highest tax morale in 1995/1996 than in 1990, with high marginal effects between 6 and 12.5 percentage points. The main variables TRUST IN GOVERNMENT, TRUST IN SYSTEM and PRIDE remain significant. Looking at the religion, Muslims and people without a religion report a significantly higher tax morale than Hindus. On the other hand citizens with another religion report now a significantly lower tax morale than Hindus. The results regarding the economic situation also remain robust, showing that a better economic situation goes in line with a significantly lower tax morale. Furthermore education has a positive effect on tax morale. The coefficient of the variable FEMALE is now highly significant with a positive sign. On the other hand only the age groups 30-49 and 50-64 indicate a higher tax morale than the reference group while the oldest group surprisingly shows a significantly lower tax morale. Looking at the employment statuses we observe that part-time employed, retired people, and individuals being at home report a higher, and self-employed a lower tax morale than full-time employed people. The marital status shows that separated individuals have a significantly lower and widowed a higher tax morale than singles.

Table 10
Tax Morale in India 1990 and 1995/1996

<i>Weighted Ordered Probit</i>	<i>Eq. 10</i>		<i>Eq. 11</i>		<i>Eq. 12</i>		<i>Eq. 13</i>		<i>Eq. 14</i>	
<i>Dependent Variable: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
<i>a) Demographic Factors</i>										
AGE 30-49	0.106***	0.029	0.163***	0.043	0.127***	0.032	0.133***	0.036	0.091***	0.025
AGE 50-64	0.049*	0.013	0.076***	0.020	0.048*	0.012	0.077***	0.021	0.035	0.009
AGE 65+	-0.208***	-0.056	-0.184***	-0.049	-0.263***	-0.067	-0.173***	-0.047	-0.278***	-0.075
FEMALE	0.124***	0.033	0.118***	0.031	0.127***	0.033	0.128***	0.034	0.123***	0.033
EDUCATION	0.057***	0.015	0.026**	0.007	0.018*	0.005	0.047***	0.013	0.023**	0.006
<i>b) Marital Status</i>										
MARRIED	0.047	0.013	-0.007	-0.002	0.045	0.012	0.035	0.010	0.048	0.013
DIVORCED	0.148	0.040	-0.012	-0.003	-0.015	-0.004	0.097	0.026	0.107	0.029
SEPARATED	-0.629***	-0.170	-0.708***	-0.187	-0.763***	-0.195	-0.433***	-0.116	-0.564***	-0.153
WIDOWED	0.291***	0.079	0.331***	0.087	0.382***	0.098	0.308***	0.083	0.312***	0.085
<i>c) Employment Status</i>										
PART TIME EMPLOYED	0.165***	0.044	0.122***	0.032	0.144***	0.037	0.172***	0.046	0.199***	0.054
SELFEMPLOYED	-0.064**	-0.017	-0.036	-0.010	-0.025	-0.006	-0.052**	-0.014	-0.073***	-0.020
UNEMPLOYED	0.079*	0.021	0.059	0.016	0.047	0.012	0.063	0.017	0.046	0.013
AT HOME	0.079***	0.021	0.114***	0.030	0.118***	0.030	0.084***	0.023	0.018	0.005
STUDENT	0.206*	0.056	0.202*	0.053	0.227**	0.058	0.210*	0.056	0.192*	0.052
RETIRED	0.108**	0.029	0.207***	0.055	0.217***	0.056	0.090**	0.024	0.034	0.009
OTHER	-0.531	-0.143	-0.367	-0.097	6.562	1.678	-0.583	-0.157	-0.428	-0.116
<i>d) Economic Situation</i>										
UPPER CLASS	-0.775***	-0.209	-0.614***	-0.162	-0.590***	-0.151	-0.790***	-0.212		
UPPER MIDDLE CLASS	-0.397***	-0.107	-0.229**	-0.061	-0.176*	-0.045	-0.393***	-0.106		
LOWER MIDDLE CLASS	-0.337***	-0.091	-0.212**	-0.056	-0.190*	-0.049	-0.357***	-0.096		
WORKING CLASS	-0.171*	-0.046	0.040	0.011	0.064	0.016	-0.183*	-0.049		
INCOME									-0.002***	-0.001
<i>e) Religion</i>										
CHRISTIAN	0.067	0.018	0.052	0.014	0.047	0.012	0.045	0.012	0.137**	0.037
MOSLIM	0.229***	0.062	0.290***	0.077	0.254***	0.065	0.225***	0.061	0.255***	0.069
NO RELIGION	0.447**	0.121	0.384*	0.101	0.349*	0.089	0.400**	0.108	0.506**	0.137
OTHER RELIGION	-0.226***	-0.061	-0.279***	-0.074	-0.288***	-0.074	-0.233***	-0.063	-0.260***	-0.071
<i>e) Time</i>										
India 1995/1996	-0.399***	-0.108	-0.125**	-0.033	-0.118**	-0.030	-0.328***	-0.088	-0.222***	-0.060
<i>e) Further Variables</i>										
TRUST IN GOVERNMENT			0.036***	0.010						
TRUST IN SYSTEM					0.018**	0.005				
PRIDE							0.112***	0.030		
Observations	4310		3944		4066		4238		4315	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, HINDU, INDIA 1990. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

2. Japan

In a next step we are going to analyse Japan which offers the possibility to integrate three years (1981, 1990 and 1995) in a time series analysis. However, as the number of observable variables is lower in the years 1981 and 1990, we start with an empirical analysis of the year 1995 before pooling the data set. Instead of trust in the government we use satisfaction with officials⁷ as a proxy for trust in the *current politico-economic process*. This is especially interesting as the theoretical part has pointed out a strong interaction between tax officials and the taxpayers. This allows to check the robustness of the trust variable expanding it to other state agents.

Table 11 presents the results. The coefficient for the variable SATISFACTION WITH NATIONAL OFFICERS is highly significant and the marginal effects show that an increase in the level of satisfaction by one unit raises the share of individuals stating that tax morale is never justifiable by 4.1 percentage points. The coefficient for the variable trust in the legal system is also significant with similar marginal effects (4.5 percentage points). In line with the results of India the age group 50-64 has the highest tax morale and self-employed have a significantly lower tax morale than full-time employees. In Japan, married people have a lower tax morale than singles and unemployed people have a lower tax morale than full-time employed.

In line with the data evaluation in India we estimate the same equation including individuals' religion denomination. As a high quantity of survey participants (66.2%) do not belong to a religion denomination we use them as the reference group. The amount of people without a religion is followed by the religion Buddhism (26.9%). *Table 12* indicates that Buddhists have a significantly higher tax morale than people without a religion. Other main variables remain robust.

⁷ How satisfied are you with the way the people now in national office are handling the country's affairs? Would you say you are very satisfied (4), fairly satisfied (3), fairly dissatisfied (2) or very dissatisfied (1) (scale 1 to 4).

Table 11
Tax Morale in Japan 1995

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Dependent Variable: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.121	0.032	0.283**	0.076	0.214*	0.057	0.229*	0.060	0.181	0.048
AGE 50-64	0.489***	0.128	0.712***	0.191	0.635***	0.168	0.603***	0.157	0.612***	0.162
AGE 65+	0.091	0.024	0.626*	0.168	0.248	0.066	0.258	0.067	0.262	0.069
FEMALE	0.052	0.014	0.004	0.001	0.041	0.011	-0.001	0.000	0.097	0.026
b) Marital Status										
MARRIED	-0.263**	-0.069	-0.262**	-0.070	-0.279***	-0.074	-0.377***	-0.098	-0.218*	-0.058
DIVORCED	-0.081	-0.021	0.151	0.041	-0.070	-0.019	-0.173	-0.045	-0.002	-0.001
SEPARATED	6.277	1.646	6.175	1.654	6.179	1.639	6.138	1.592	6.182	1.638
WIDOWED	-0.562	-0.147	-0.179	-0.048	-0.538*	-0.143	-0.739**	-0.192	-0.513	-0.136
c) Employment Status										
PART TIME EMPLOYED	0.088	0.023	-0.045	-0.012	0.050	0.013	0.107	0.028	0.112	0.030
SELFEMPLOYED	-0.284***	-0.075	-0.183	-0.049	-0.274**	-0.073	-0.226*	-0.059	-0.249**	-0.066
UNEMPLOYED	-0.970***	-0.254	-0.991***	-0.265	-0.937***	-0.249	-1.024***	-0.266	-1.920***	-0.509
AT HOME	0.307*	0.081	0.288*	0.077	0.285**	0.076	0.345**	0.090	0.194	0.052
STUDENT	-0.307**	-0.081	0.013	0.003	-0.178	-0.047	-0.050	-0.013	-0.092	-0.025
RETIRED	-0.024	-0.006	-0.352	-0.094	-0.071	-0.019	-0.056	-0.015	-0.130	-0.034
OTHER	-0.337*	-0.088	-0.413**	-0.111	-0.353*	-0.094	-0.361*	-0.094	-0.401*	-0.106
d) Economic Situation										
UPPER CLASS	-0.041	-0.011	0.026	0.007	-0.005	-0.001	-0.152	-0.040		
UPPER MIDDLE CLASS	0.127	0.033	0.210	0.056	0.103	0.027	0.132	0.034		
LOWER MIDDLE CLASS	0.125	0.033	0.241	0.065	0.113	0.030	0.168	0.044		
WORKING CLASS	0.137	0.036	0.172	0.046	0.075	0.020	0.113	0.029		
INCOME									0.013	0.004
e) Further Variables										
TRUST IN SYSTEM	0.172***	0.045								
SATISFACTION WITH NATIONAL OFFICERS			0.153***	0.041						
PRIDE					0.054	0.014				
PRO DEMOCRACY 1							0.152**	0.039		
Observations	930		850		968		876		838	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Table 12
Tax Morale and Religion in Japan 1995

<i>Weighted Ordered Probit</i> <i>Dependent Variable: Tax Morale</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>	<i>Coeff.</i>	<i>Marg.</i> <i>Effect</i>
<i>Independent Variables</i>	6		7		8		9	
a) Demographic Variables	included		included		included		included	
b) Marital Status	included		included		included		included	
c) Employment Status	included		included		included		included	
d) Economic Situation	included		included		included		included	
e) Religion								
BUDDHIST	0.279***	0.073	0.251**	0.067	0.284***	0.075	0.255**	0.066
OTHER RELIGION	-0.167	-0.044	-0.172	-0.046	-0.115	-0.030	-0.073	-0.019
CHRISTIAN/JEW	0.698	0.182	0.743	0.198	0.767	0.202	0.658	0.169
e) Further Variables								
TRUST IN SYSTEM	0.178***	0.046						
SATISFACTION WITH NATIONAL OFFICERS PRIDE			0.111*	0.030				
PRO DEMOCRACY 1					0.043	0.011		
							0.176***	0.045
Number of observations	905		829		943		855	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Contrary to India the quality of the data do not allow to integrate the religion of the individuals in a time series analysis. We use another proxy instead: as a religious variable we take the proxy frequency of church attendance (CHURCH ATTENDANCE⁸) (see Torgler 2002b for a theoretical consideration). *Table 13* shows that a higher church attendance leads to a higher tax morale. Furthermore, consistent with previous findings, the sign of the coefficient for the variable TRUST IN SYSTEM is positive being highly significant with

⁸ We have developed a religiosity variable from the following question in the WVS: Independently of whether you go to church or not, would you say your are a religious person (value 3), not a religious person (2), a convinced atheist (1).

marginal effects of 4.7 percentage points. Integrating all three years induces that the coefficient of the variable PRIDE is now highly significant.

Table 13
Tax Morale in Japan 1981-1995

<i>Weighted Ordered Probit</i>	<i>Eq. 10</i>		<i>Eq. 11</i>		<i>Eq. 12</i>		<i>Eq. 13</i>		<i>Eq. 14</i>	
<i>Dependent Variable: Tax Morale</i>										
<i>Independent Variables</i>	<i>Coeff.</i>	<i>Marg.</i>								
a) Demographic Factors										
AGE 30-49	0.222***	0.058	0.215***	0.056	0.225***	0.059	0.212***	0.055	0.217***	0.056
AGE 50-64	0.318***	0.083	0.268***	0.069	0.275***	0.071	0.285***	0.074	0.295***	0.077
AGE 65+	0.310***	0.081	0.276***	0.071	0.254***	0.066	0.288***	0.075	0.328***	0.085
FEMALE	0.108**	0.028	0.110**	0.029	0.093**	0.024	0.099**	0.026	0.090*	0.023
b) Marital Status										
MARRIED	0.233***	0.061	0.219***	0.057	0.224***	0.058	0.223***	0.058	0.263***	0.068
DIVORCED	0.145	0.038	0.198	0.051	0.160	0.042	0.143	0.037	0.170	0.044
SEPARATED	-0.076	-0.020	-0.059	-0.015	-0.317	-0.082	-0.118	-0.031	-0.250	-0.065
WIDOWED	0.630***	0.164	0.751***	0.195	0.616***	0.160	0.617***	0.160	0.554***	0.144
c) Employment Status										
PART TIME EMPLOYED	-0.111	-0.029	-0.114	-0.030	-0.103	-0.027	-0.102	-0.027	-0.157*	-0.041
SELFEMPLOYED	-0.226***	-0.059	-0.234***	-0.061	-0.176***	-0.046	-0.224***	-0.058	-0.223***	-0.058
UNEMPLOYED	-0.401***	-0.104	-0.374***	-0.097	-0.333***	-0.087	-0.391***	-0.101	-0.332***	-0.086
AT HOME	0.045	0.012	0.059	0.015	0.092	0.024	0.050	0.013	0.069	0.018
STUDENT	0.156*	0.041	0.170*	0.044	0.139	0.036	0.155*	0.040	0.197*	0.051
RETIRED	0.079	0.020	0.066	0.017	0.137	0.036	0.062	0.016	0.038	0.010
OTHER	-0.355*	-0.092	-0.335*	-0.087	-0.346*	-0.090	-0.345*	-0.090	-0.394*	-0.102
d) Economic Situation										
INCOME									-0.013*	0.004
e) Time										
JAPAN 1990	-0.032	-0.008	0.017	0.005	-0.026	-0.007	-0.035	-0.009	-0.022	-0.006
JAPAN 1995	-0.058	-0.015	-0.057	-0.015	-0.058	-0.015	-0.066	-0.017	-0.067	-0.017
e) Further Variables										
TRUST IN SYSTEM			0.182***	0.047						
PRIDE					0.072***	0.019				
CHURCH ATTENDANCE							0.047***	0.012		
Observations	3065		2968		2921		3062		2662	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, JAPAN 1981. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Looking at the variable AGE, we observe that all age groups from 30 to 65+ have a significantly higher tax morale than the reference group 16-29. Contrary to the findings for the year 1995, married people have a higher tax morale than singles. Furthermore, females have a higher tax morale than males and widowed a higher one than singles. Being self-employed or unemployed reduces tax morale compared to full-time employed. Looking at the development of tax morale over time we observe a decay of tax. However, the coefficients are not significant.

IV. CONCLUSIONS

In this paper we have analysed tax morale in Asian countries not only measuring the degree of tax morale but also trying to give an answer to what shapes tax morale. The empirical part has paid attention to get robust findings not only considering more than one particular time period in the countries India and Japan, but also pooling the Asian countries in a cross-country evaluation. According to the author's knowledge there is no study that has empirically analysed tax morale in Asia.

In a descriptive analysis we found that tax morale in the Philippines is very low. High tax morale values have been found for Bangladesh, Japan, and China. In general, the tax morale values are higher than in OECD countries which might indicate that cultural differences have an effect on tax morale. However, such cross-country conclusions should be treated with caution.

In the relatively homogenous region of Asia, we have analysed what shapes tax morale in a multiple regression. The results indicate that trust in government and the legal system and the satisfaction with national officials have a significant positive effect on tax morale. Thus, trust seems to be a key determinant to maintain and increase tax morale and thus taxpayers' willingness to contribute to a public good. Other variables as pride, pro democratic attitudes, (financial) satisfaction and religiosity also influence tax morale positively. These results are robust throughout the pooled analysis and the country studies in India and Japan over time. Furthermore, tax morale in former British colonies (in South Asia) are higher than non British colonies (in East and South East Asia). However, this result should be treated with caution as we had only a limited number of countries in our data set and the high tax morale in Bangladesh does not, contrary to other countries, correspond to a low size of shadow economy. In general, we observed a significant difference between religions.

However, this paper cannot give an answer on how tax morale changed after the Asian financial crisis in 1997 followed by institutional changes. This can be analysed as soon as further World Values Survey waves are available. Furthermore, it has to be mentioned that the World Values Survey until now offers only a limited amount of Asian countries, which reduces the possibility to compare cultural and institutional differences between Asian countries in a robust manner. Thus, the effects in the pooled regression cannot be representative for Asia as a whole, but it shows certain tendencies. In a next step it would be important to extend the number of observable countries including, e.g., Indonesia, Thailand or Singapore.

APPENDIX

Table A1
Tax Morale in Europe 1989-1990

Countries	<i>Tax Evasion Is Never Justifiable (%)</i>	<i>Mean</i>
<i>Northern Countries</i>		
Austria	62.3	2.260
Belgium	33.9	1.276
Denmark	57.3	2.025
Finland	40.3	1.637
West-Germany	40.4	1.659
East-Germany	67.2	2.344
Great Britain	53.9	1.945
Iceland	56.0	2.000
Ireland	48.8	1.798
North-Ireland	69.7	2.248
Netherlands	42.9	1.644
Norway	43.1	1.642
Sweden	56.4	2.013
Switzerland	63.8	2.100
Average	52.6	1.899
<i>Romanic Countries</i>		
France	46.5	1.688
Italy	55.2	1.967
Portugal	39.9	1.483
Spain	58.4	2.021
Average	50.0	1.790
Total Average	52.0	1.875

Notes: Own calculations from the World Values Survey. Second column: percentage of individuals saying that tax evasion is "never justified". Third column: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

Table A1
Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
EDUCATION	<p>In general:</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree <p>India:</p> <ol style="list-style-type: none"> 1. Illiterate 2. Primary or less 3. Some secondary 4. Secondary completed or some university 5. University degree or more
SATISFACTION	All things considered, how satisfied are you with your life as a whole these days? (scale 1 = dissatisfied to 10=satisfied)
HAPPINESS	Taking all things together, would you say you are : very happy (4), quite happy (3), not very happy (2), not at all happy (1).
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)
PRIDE	<p>How proud are you to be? (substitute your own nationality for ...)</p> <ol style="list-style-type: none"> 1. Not at all proud 2. Not very proud 3. Quite proud 4. very proud
TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)

TRUST IN LEGAL SYSTEM	Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
SATISFACTION WITH NATIONAL OFFICERS	How satisfied are you with the way the people now in national office are handling the country's affairs ? Would you say you are very satisfied (4), fairly satisfied (3), fairly dissatisfied (2) or very dissatisfied (1) (scale 1 to 4).
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deduction.</p> <p>Japan 1990</p> <ol style="list-style-type: none"> 1. Under 2 million yen per year 2. 2.00-2.99 million yen 3. 3.00-3.99 million yen 4. 4.00-4.99 million yen 5. 5.00-5.99 million yen 6. 6.00-6.99 million yen 7. 7.00-7.99 million yen 8. 8.00-8.99 million yen 9. 9.00-9.99 million yen 10. More than 10 million yen per year <p>Japan 1995</p> <ol style="list-style-type: none"> 1. Less than 3.00 2. 3.00-4.00 3. 4.00-5.00 4. 5.00-6.00 5. 6.00-7.00 6. 7.00-8.00 7. 8.00-9.00 8. 9.00-10.00 9. 10.00-12.00 10. 12.00 or more <p>India (annual)</p> <ol style="list-style-type: none"> 1. up to 12.000 rupees per year 2. 12001-18.000 3. 18001-24.000 4. 24001-30.000 5. 30001-36.000 6. 36001-48.000 7. 48001-60.000 8. 60001-90.000 9. 90001-120.000 10. over 120.000 rupees per year
PRO DEMOCRACY1	Would you say that having a democratic political system is very good (4), fairly good (3), fairly bad (2) or very bad (1) way of governing this country (scale 1 to 4).
PRO DEMOCRACY2	Democracy may have problems but it's better than any other form of government (4=strongly agree, 1=strongly disagree).

Source: Inglehart et al. (2000)

REFERENCES

- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Bahl, R. W. (1999). Implementation Rules for Fiscal Decentralisation, Working Paper No 10, International Studies Program, Georgia State University, Atlanta
- Burgess, R. and N. Stern (1993). Taxation and Development, *Journal of Economic Literature*. 31: 762-830.
- Casanegra de Jantscher, M. and R. M. Bird (eds.) (1992). *Improving Tax Administration in Developing Countries*. Washington: International Monetary Fund.
- Chang, T., W. Liu and H. Thompson (2002). The Viability of Fiscal Policy in South Korea, Working Paper 02-09, Andrew Young School of Policy Studies.
- Chu, C. (1990). Income Tax Evasion with Venal Tax Officials – The Case of Developing Countries, *Public Finance*. 392-408.
- Das-Gupta, A., R. Lahiri and D. Mookherjee (1995). Income Tax Compliance in India: An Empirical Analysis, *World Development*. 12: 2051-2064.
- Das-Gupta, A. and D. Mookherjee (1995). Reforming Indian Income Tax Enforcement, IED Discussion Paper Series, No. 52, Boston University.
- Eckstein, H. (1966). *Division and Cohesion in Democracy: Study of Norway*. Princeton: Princeton University Press.
- Feld, L. P. and B. S. Frey (2002). The Tax Authority and the Taxpayer. An Exploratory Analysis, paper presented at the 2002 Annual Meeting of the European Public Choice Society Belgirate.
- Helliwell, J. F. (1996). Economic Growth and Social Capital in Asia, NBER Working Paper Series No. 5470, February.
- Jacob, R. (1996). The Taxman Cometh, *Time International*, March, 11.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny (1999). The Quality of Government, *Journal of Law, Economics, and Organization*. 15: 222-278.
- Manasan, R. G. (2000). Improving Tax Administration: A New View from the Theory of Tax Evasion in a Corrupt Regime, *Policy Notes*. 11:1-8.
- Okada, Y. (2002a). The Tax System in Japan, paper presented at the conference New Challenges in Tax Compliance: Japan's Experience and its Significance for Latin America, June 11-12.
- Okada, Y. (2002b). The Japanese Way, paper presented at the conference New Challenges in Tax Compliance: Japan's Experience and its Significance for Latin America, June 11-12.
- Rao, G. (2001). Challenges of Fiscal Decentralization in Transitional Economies: An Asian Perspective, Conference Paper, Public Finance in Developing and Transition Countries: A Conference in Honor of Richard Bird, International Studies Program, Georgia State University, Atlanta, April 4-6.

- Sarma, A. and M. Gupta (2002). A Decade of Fiscal Reforms in India, Working Paper 02-04, International Studies Program, April.
- Schneider, F. (2002). The Value Added of Underground Activities: Size and Measurement of the Shadow Economies of 110 Countries all over the World, Working Paper, Johannes Kepler University of Linz.
- Silvani, C. and K. Baer (1997). Designing a Tax Administration Reform Strategy: Experiences and Guidelines, IMF Working Paper 97/30.
- Treisman, D. (1999). The Causes of Corruption: A Cross-National Study, unpublished manuscript, Department of Political Science, University of California.
- Torgler, B. (2002a). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.
- Torgler, B. (2002b). Preaching Matters: Tax Morale and Religiosity, WWZ-Discussion Paper 02/03, Basel: WWZ.
- Torgler, B. (2003a). Tax Morale, Rule-Governed Behaviour and Trust, forthcoming in: *Constitutional Political Economy*.
- Torgler, B. (2003b). Tax Morale in Transition Countries, forthcoming in: *Post-Communist Economies*.
- Torgler, B. (2003c). Tax Morale in Latin America, WWZ-Discussion Paper 03/03, Basel: WWZ.
- Usui, N. (2002). Penetration of the Self-Assessment System for Income Tax: Half-a-Century's Experience in Postwar Japan, paper presented at the conference New Challenges in Tax Compliance: Japan's Experience and its Significance for Latin America, June 11-12.
- Weder, B. (1999). *Model, Myth, or Miracle?* Reassessing the Role of Governments in the East Asian Experience. New York: United Nations University Press.
- Wong, R. B. (2001). Tax Resistance, Economy and State Transformation in China and Europe, *Economics of Governance*. 2: 69-83.

II. SOCIAL NORMS

When two tribes of primeval man, living in the same country came into competition, if the one tribe included ... a greater number of courageous, sympathetic and faithful members, who were always ready to warn each other of danger, to aid and defend each other, this tribe would without doubt succeed best and conquer the other ... Selfish and contentious people will not cohere, and without coherence, nothing can be effected (p. 156).

Charles Darwin (1873). *The Descent of Man*. New York: D. Appleton and Company.

CHAPTER XIII

TO EVADE TAXES OR NOT TO EVADE:

THAT IS THE QUESTION*

ABSTRACT

Tax evasion seems to be a growing problem in almost all countries. The paper analyses possibilities and limitations of game theoretical aspects to analyse tax evasion. However, empirical findings indicate that most people pay more taxes than the traditional economic approach would predict. Thus, it might be important to go a step back and analyse tax morale, the intrinsic motivation to pay taxes, as endogenous variable. With data from the World Values Survey, choosing Canada, strong evidence has been found that trust in government, pride, and religiosity have a systematic positive influence on tax morale. This effect tends to persist even after controlling for age, income, education, gender, marital status, and employment status.

JEL classification: H260, C700

Keywords: tax morale, tax compliance, tax evasion, game theory

* Forthcoming: Benno Torgler (2003). To Evade Taxes or Not to Evade: That Is the Question, *Journal of Socio-Economics*.

I. INTRODUCTION

The paper is going to show that the tax compliance literature was influenced by game theory. Thus, the opportunities and limitations of game theory in a tax compliance context are shown. We are going to see that experiments which are attractive to test predictions indicate that tax evasion is not just a simple game. Elffers (2000) points out that there are different steps until a person finally evades taxes. Only in the last step (phase) people will compare the expected value of evading taxes. Thus, it might be important to focus on the lower steps and, e.g., analyse factors that shape tax morale. We are going to use World Values Survey Data and treat tax morale as a dependent variable, which is defined as negative value regarding tax evasion.

II. INSPIRING SOURCE AND LIMITATIONS OF GAME THEORY

Game theory helps to create and evaluate an analytic explanation of a particular situation. It is not new to use a game-theoretic approach in tax compliance literature (see, e.g., Greenberg, 1984, Graetz, Reinganum and Wilde 1986, Cowell 1990, Frey and Holler 1998, Van Vugt et al. 2000). The strength of game theory is that it makes explicit strategic aspects of social interactions. Furthermore, the logic of game theory helps to simplify the complexity of tax compliance. It outlines the range of choices available to a player. Levi (1997) argues that to understand why one path becomes an equilibrium path, it is important to understand why individuals did not follow other possibilities. She argues that game theory allows to specify the behaviour that failed to happen because it is off an equilibrium path.

A taxpayer might receive a higher personal outcome minimising the amount of tax that he pays, as her/his contribution does not really make much difference in the contribution of public goods. Difficulties only arise if a large number of taxpayers evade taxes so that public good provision is not guaranteed. If a taxpayer does not pay the taxes, public goods will not immediately disappear. Game theory has paid attention to the aspects of cooperation. It helps to think about the interaction between taxpayers themselves and the government or the tax administration in a simple and compelling manner. Game theory can be a solid analysis foundation. It examines the equilibrium of the game in which interaction takes place. However, empirical evidence (especially experiments) indicates that cooperation can not be explained with the traditional portfolio analysis, focusing mainly on deterrence components.

Elffers (2000) argues that “the gloomy picture of massive tax evasion is a phantom” (p. 185). He argues that social dilemma situations do not degenerate to defection, even in a system without harsh control mechanisms.

Cooperation problems have been analysed with games as the Prisoner’s Dilemma (see Tucker, 1950; for social dilemma situations, see Hardin 1968), iterated Prisoner’s Dilemma (see Axelrod 1984), the Assurance Game (see Sen 1967, 1973, 1974) which compared to the Prisoner’s Dilemma has a different preference order, or the Chicken Game (see Kahn 1965). Vital to these games is the embedding of an interpersonal situation which characterises specific incentives. Early works are based on the concept of a “rational taxpayer” who is able to project the consequences of possible actions, estimates the probability of events, and maximises personal gains. Repeated events put into account that subjects have to pay taxes regularly. Previous behaviour becomes important. Nobody knows when he will die and so stop paying taxes. An analysis of individual’s decision to evade taxes or not over time would use life cycle models. When the same game is played repeatedly the strategic option for the players expands. There is the possibility of punishment and reward inside the group. However, there is a considerable problem with such group sanctions. It is assumed that the strategy “evade taxes” is visible and assigned. This is a very strong assumption in the analysis of tax compliance.

Tax compliance is a more complex topic than a simple game with two taxpayers. A social dilemma situation is closer to reality. The consequences of the extension are that defection can not be observed easily and that the existence of the public good does not depend on the consequence of the act, that is, it does not depend on whether a person cheats or not. Thus, one’s own outcome is unaffected by one’s own contribution to the public good. The n-player case is often referred to as a *Tragedy of the Commons* (see Hardin 1968). For taxpayer *i* it is always better not to pay taxes. So each taxpayer’s dominant strategy is not to pay, because it yields the best payoff regardless of what the others do. The social dilemma illustrates that the incentives to evade increase if the total sum of taxpayers increases. It can be argued that cooperativeness will probably not increase *ceteris paribus* as the number of taxpayers does. If someone chooses to pay the taxes she/he will be worse off than before because she/he has to support the parasitic other. Maital (1982) states:

“Tax evasion falls solidly in the free-rider box. The more people seek free rides and evade taxes, the more those who do pay have to fork over, and the greater the incentive to evade” (p. 257).

If we assume that the public good requires a certain level of contribution before it is produced, taxpayers calculate that they receive a greater payoff from contributing than from defecting if they are certain that others will also contribute (see Hardin 1982). If other members of the group have already paid their taxes and so contributed the bulk of the cost, then an individual might stand to benefit more from final supply of the good than the additional increment required for the provision. However, Hardin (1982) argues that anomic groups commonly face a twofold obstacle to cooperation:

“they cannot contract with themselves to cooperate, and they cannot be very confident of their expectations of each other’s behavior” (p. 59).

Furthermore, once a minimum production is achieved, the situation of a Prisoner’s Dilemma is reached.

Here we have not taken into account that in a small community a considerable amount of copycat behaviour can take place. If every taxpayer in the game is aware of this, such copycat behaviour might have a significant restraining influence on antisocial behaviour of each person.

All these games have the limitation that they do not integrate an important player into the analysis: the tax administration. The discussion of the provision of the public good is not only a cat-and-mouse game played between taxpayers. One could imagine that taxpayers and tax agents interact in a sequential-move game (see Alm 1999). First, taxpayers decide how much income to report. In the second state, the tax administration decides about the audit process. An empirical possibility to analyse what happens if the tax administration varies parameters as audit probability or penalties are experiments. This allows us to accurately measure the influence of a specific effect and can be adjusted to test theoretical predictions. In the 80s and 90s economists, psychologists and sociologists have used experiments to investigate tax compliance. Most experiments intended to replicate the structure of a voluntary income reporting. Blackwell (2002) has conducted a meta-analysis, focusing on experiments which have examined the impact of traditional determinants as the tax rate, audit probability and the fine rate. The results indicate that an increase of the audit and the fine rate will increase tax compliance. There is a tendency for higher tax rates to reduce tax compliance, but it is not significant.

Generally, early tax compliance experiments tried to test the relevance of the well articulated expected utility theory, influenced by the model of Allingham and Sandmo (1972) and other authors as, e.g., Yitzhaki (1974). This process helped to analyse the change in tax

compliance as a response to different deterrence policies. However, experiments mostly report a higher level of income reporting than the expected utility model would predict (see Alm 1999). These results which were contrary to a “gamble” perspective, motivated tax compliance researchers to expand the traditional expected utility theory and to check the relevance of other theories or to implement new experiments focusing on new variables without a clear theory .

As already mentioned, it is essential to integrate the government as a player. The game theoretic strategies have given great impulse for the integration of the authority. Authors such as Landsberger and Meilijson (1982) and Greenberg (1984) have been among the first to use game theory to analyse enforcement strategies. The work of Graetz, Reinganum and Wilde (1986) put the attention on the information transmission and helped to treat tax administration as endogenous component. Their game-theoretic approach offers the integration of different kinds of taxpayers. Pommerehne, Hart and Frey (1994) used a dynamic, recursive analysis of the relationship between government’s public good provision, government waste, fairness considerations, and taxpayer compliance. They concentrate on morale as a human predisposition that might account for actual behaviour, and pay attention to taxpayer’s behaviour under different institutional settings. They modelled this interaction between individuals and institutions as a dynamic process enabling to trace phenomena such as an endogenous erosion of morale. The taxpayer’s decision about tax compliance is central to the model. After each period, the individual reflects on the experience of the previous period and decides how much taxes to pay. Factors like greater deviation between the individual’s optimal choice of public good provision and the actual level, a higher number of fellow citizens having underpaid their taxes, a higher level of government waste in the previous period, lead to less individual willingness to pay taxes. Thus, the simulation model assumes that taxpayers follow a tit for tat strategy. The simulation indicates the need of adjusting the output of the political sector to people’s needs. Direct democracy induces less deviation compared to a representative democracy and thus reduces tax evasion.

The government and the tax administration have an interest to alter individuals’ calculations of payoffs by changing the costs and benefits of the game. Levi (1988) stresses the relevance of benefits and brings in a historical context. Events like war, natural disaster, e.g., are events that require cooperative behaviour. Rulers have used such events to raise additional revenues.

Andreoni, Erard and Feinstein (1998) argue that tax compliance models fall into two groups: (i) principal-agent models, where the tax administration can announce and commit to

its audit rule before taxpayers file return and (ii) game-theoretical concepts with a sequential structure, where tax administration decides about the audit process after all returns have been filed. This means that cutoff-rules fall into the first model, the other rules into the second one. The authors intensively analyse pros and cons of the two concepts evaluating in terms of their empirical implications and in terms of the reasonableness of their assumptions. Generally, in both concepts they criticise the assumption that taxpayers (i) only experience a cost from being audited if they are found to have underreported their income, (ii) only report taxable income to the tax agency, (iii) are certain of their true tax liability, and (iv) can correctly deduce the audit rule (pp. 833-834).

Some criticised points can also be found in the design of the experiments. In most of them individuals can only decide about the amount to declare. Alm (1999) stresses that the income declaration is not a single choice decision, but consists of a number of other decisions as, e.g., deductions (see also Webley and Halstead 1986). In recent years theories and experiments have been trying to catch more realism expanding the cost definition (see next sections, e.g., Erard and Feinstein, 1994) and introducing asymmetry of information over tax administration policies. Alm, Jackson and McKee (1992c), for example, introduced treatments with uncertainty in the fiscal parameters tax rate, fine rate, and probability of detection. The findings indicate that such a ‘veil of uncertainty’ increases tax compliance.

III. PUBLIC GOOD STRUCTURE IN EXPERIMENTS

For an in-depth analysis of free-riding behaviour, one can design a tax compliance experiment with a public good character. Such experiments can have the following basic design. Each individual in a group receives income that he has to declare. Paid taxes are allocated in a sort of group account. Based on the tax rate, the tax payment contribution reduces the accumulated income over a couple of rounds. On the other hand, the payments in the group account are enjoyed by all group members because the resulting amount of tax payments in each round is redistributed to them in equal shares. Alm, McClelland and Schulze (1992) have determined the optimal one period strategy for a subject in such a situation. If it is assumed that the individual’s goal is to maximise the expected value and that an individual takes the actions of others as given, the expected value from the choice of how much income to report can have the following structure:

$$EV = Y - t Y^D + m s (G + t Y^D) - p f (t(Y - Y^D)) \quad (1)$$

where:

Y is income before taxation

Y^D is the declared income

t is the tax rate

m is the surplus multiplier

s is the individual's share of the group tax fund

G are taxes paid by all other group members, thus, $G + t Y^D$ are the total group taxes

p is the probability of detection and f the fine rate on unpaid taxes.

If Equation 1 is maximized by the declared income Y^D , individuals will report the whole income if:

$$p f + m s \geq 1 \quad (2)$$

Equation 2 can be applied according to the experiment settings.

In a second step, such experiments have analysed what happens when the surplus multiplier is varied. Subjects might be more inclined to comply if the returns from tax payments are higher. Such an exchange relationship simulates the perceived fairness between what taxpayers receive from the “government” in exchange of their paid taxes. A higher redistribution based on a higher surplus multiplier can be seen as a positive action by the government which has the goal to increase taxpayers' positive attitudes and commitment to comply. A surplus multiplier higher than one indicates that the group received more than they pay in (see Alm 1999). Alm, McClelland and Schulze (1992, p. 25) argue that such a group surplus multiplier reflects the consumers' surplus that taxpayers derive from government provision of a public good. Their data indicates that the average compliance is always higher in treatments where public goods are included compared to treatments without public good provision, even if there is no possibility of punishment and detection (see also Alm, Jackson and McKee, 1992a, 1992b). These findings are in line with traditional public good games which show that contributions increase with the individual payoff from the public good, relative to private good (private account) (see van Winden 2002 and Ledyard 1995)¹. However, the empirical results of Alm, Jackson and McKee (1992b) indicate that the

¹ The contribution to the public good can be interpreted as an individual tax payment (see Feld and Tyran 2002).

coefficient of the presence of the public good is negative and weakly significant (measured as dummy variable, dependent variable: tax compliance). On the other hand, the coefficient of the payoff to the public good is positive and significant. The coefficient is an interaction term between the dummy variable “public good” and the amount of group fund received by each subject in the previous round. The authors conclude that the results indicate the presence of some free riding behaviour but individuals increase their compliance when they know that others also contribute. Thus, it might be important to make individuals aware of the benefits financed by their tax payments. Similar, Torgler (2002a) has made experiments which take into account dynamic aspects using event history analysis (duration models). Generally his findings indicate that the effect of the variation of the surplus multiplier is not so clear. There is a tendency that positive actions (integrating the surplus multiplier) are intended to increase taxpayers’ positive attitudes and commitment to the tax-payment and thus compliant behaviour. However, while a subject in a group with a surplus multiplier of 1.5 is significantly less likely to experience full tax evasion, the coefficient for the group with surplus multiplier 2 is not significant. The author concludes that the net effect seems to depend on taxpayers’ behaviour within the group. Moral costs are reduced if people see that other group members also evade taxes. Individuals in the experiment could deduce from the transfer amount how the other group members had behaved. As a consequence tax morale is crowded out and tax evasion is seen as a mechanism to restore equity. It seems that people are more likely to evade if they see that others are also evading. These results show that taxpayers do not take decisions isolated from other taxpayers. We find interactions between taxpayers themselves.

Feld and Tyran (2002) used a simple public good experiment design to analyse the effect of voting on tax compliance. Their basic design was a one-shot tax evasion game where subjects could decide between putting their money in a private or a group account. In a first treatment subjects could contribute to the collective good without sanctions. In a second treatment fines were integrated and in the third subjects could vote on the fine. Their findings indicate that tax compliance on average is higher in the endogenous fine treatment than in the exogenous one. Furthermore, the results show that subjects in the endogenous fine treatment, who approve the fine, have a higher tax compliance than subjects in the exogenous fine treatment. The compliance rates are also higher when the fine is accepted than when the fine is rejected. These findings show the relevance of procedural fairness as a factor that helps to establish or even increase tax morale. A minor restriction might be that the number of individuals in a group was three. This helps to increase the number of voting procedures and

ensures a majority. However, it might have been interesting to increase the group size to better simulate a social dilemma situation.

IV. MORAL COSTS AND SOCIAL NORMS

Baldry (1986) argues that the decision whether or not to evade is influenced by “moral compunctions” (p. 333). Baldry’s (1987) experimental findings show that the prediction that a taxpayer will not attempt some evasion, as long as the expected gain is positive, could not be supported. He states:

“the ‘standard’ model provided a good basis for the analysis of tax evasion, but needed to be augmented in some way, for example by including ‘moral costs’ and average or marginal tax rates as separate arguments in the agent’s utility function” (p. 333).

Such experimental findings indicate the importance of social interaction inside a group and the relevance of alternative theories to understand the high level of tax compliance. Subjects do not act as isolated individuals playing a “game against nature”. No taxpayer is an island, entire of itself. Tax compliance experiments, at first strongly motivated by theory, get an incentive to go beyond simple theoretical concepts based on the traditional deterrence factors and check the relevance of social and institutional factors (for surveys, see Torgler 2001, 2002b). Taxpayers may be driven by moral rules and sentiments. He might bear moral costs if he does not pay the taxes and act as a free-rider. Elffers (2000) shows that it is a long way before a person becomes a tax evader. Many researchers have argued that many individuals do not even think of tax evasion. Pyle (1991) criticises the assumption that individuals are amoral utility maximisers:

“Causal observation suggests that not all individuals think quite like that. Indeed, it seems that whilst the odds are heavily in favour of evaders getting away with it, the vast majority of taxpayers behave honestly” (p. 173).

Frey (1999) uses the expression “ipsative possibility set” (p. 196) and shows that there are taxpayers who do not even search for ways to cheat at taxes. Long and Swingen (1991, p. 130) argue that “some individuals are simply predisposed NOT to evade”. Experiments

indicate that there are individuals who always comply, that is, a certain compliance exists even without (low) penalties and audits. In a second step, Elffers (2000) argues that not everyone with “an inclination to dodge his taxes is able to translate his intention into action” (p. 187). Many individuals do not have the opportunity or the knowledge and resources to evade. And in a third step, you can find individuals that feel inclined to not comply and check for the opportunity to evade taxes. Elffers states that this is the phase where standard economic theory comes into play, where individuals evaluate the expected value of evasion.

The presented model of Elffers (2000) reduces the significance of coercive instruments to resolve the social dilemma of tax payments. His conclusion is to try to prevent people from reaching the final step of the staircase. Thus, the instrument of deterrence has not the influence to make individuals comply. It can even be contra-productive, as Frey (1997) points out. With increasing monitoring and penalties for noncompliance, individuals notice that intrinsic motivation is not recognised, which might open the door to an opportunistic behaviour. On the other hand, regulations might help that taxpayers do not reach the last step, if honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations which prevent free riding by others and establish fairness and equity help preserve tax morale. This indicates that the government has to consider different strategies for different taxpayers.

Erard and Feinstein (1994) stress the relevance of integrating moral sentiments into the models to provide a reasonable explanation of actual compliance behaviour. Taxpayers anticipate guilt when filling out their return underreporting and escaping from detection, and anticipate shame if being caught subsequently. Bosco and Mittone (1997) show that on one side you find approaches related to Kant’s definition of morality, based on the assumption that a fair tax is a tax which a taxpayer believes to be fair for all other taxpayers. On the other hand you find concepts which stress the concept that taxpayers are not only interested in their own welfare but also concerned about the general welfare. This concept is based on the concept of sympathy found in the work of Adam Smith (1976) and David Hume (1978).

According to Kant (1785/1964) true rationality lies in obeying the categorical imperative:

“Act only according to that maxim by which you can at the same time will that it should become a universal law” (p. 88).

Thus, evasion would not pass the categorical imperative. As we have seen, evasion can be instrumentally rational, assuming that the taxpayer is only concerned with her/his welfare.

Furthermore, there is only a small chance of being fined for evasion². If the taxpayer considers evading and presumes that other taxpayers act the same way, he

“would be committed to the predictable result that society would break down and life would become nasty, brutish and probably short as government support for law and order, health care, road building, etc., collapsed ... Thus for Kant the rational person should not allow reason to be a slave to the passions ...; instead our rationality, and the fact that we share it, should lead us to the categorical imperative and the payment of taxes” (Heap and Varoufakis 1997, p. 16).

A false declaration can generate anxiety, guilt or a deterioration of the taxpayer's self-image. It is assumed that a taxpayer feels these costs only if he believes that his tax share is not higher than what is defined as fair. If he is paying a higher amount, evasion can be seen as a sort of self-defence.

According to Smith (1976), man is enabled by his imagination to set himself in the position of somebody else and to understand him by mere cogitation. Like an observer or an invisible spectator, a human being can judge the behaviour of another, just by reflecting how she/he would feel in the same situation. Sentiments and behaviour of people also depend on decisions in their own heart, the conscience (see Recktenwald 1999). Game specific preferences can be interpreted as a reduced form of some underlying universal preferences (Sethi and Somanathan 2001). Preference specifications of people caring not only about their own material payoffs but about the entire distribution of payoffs, meaning that players have some aversion to inequity, can explain results from laboratory experiments (see Fehr and Schmidt 1999 and Bolton and Ockenfels 2000).

However, these approaches have some weaknesses. It can not be derived from economic or psychological theory how guilt and shame should enter into the utility function. Furthermore, as guilt and shame are not directly observable, identification is based on the form of the assumptions. Kirstein and Schmidtchen (1997) argue that there is the danger of modifying the utility function so that it fits the observations. Such a procedure would not be satisfactory from a methodological point of view. Similar, Kirchgässner (2000) points out that using psychological costs, any theory can be protected from falsification. Thus, the predictive power of theories is reduced.

² According to Andreoni, Erard and Feinstein (1998), in 1995 the audit rate in the United States for individual tax return was 1.7 percent, the civil penalty for underpayment of taxes is calculated as 20 percent of the underpayment that results from wrongful conduct.

Schnellenbach (2002) integrates the concept of cognitive dissonance into traditional neoclassic models. He assumes that psychological costs that result from cognitive dissonance are considered by the taxpayer *ex ante* in his marginal choice of tax evasion. This opens the possibility that effects from the politico-economic process can have an impact on tax evasion. This means that the model allows not only for the interaction between individual taxpayers but also between taxpayer and the government. A higher tax compliance can be shown with this modification of the traditional models. It is an important step to analyse such models.

There are only few experiments which systematically analyse moral costs in tax experimental design. A first possibility has been shown by Bosco and Mittone (1997) who tested whether feelings of collective blame influence the decision to evade taxes, and the knowledge of damaging others by reducing social welfare reduces tax evasion.

We have similar problems if we argue that there is a social norm of paying taxes or not. But where are the origins of social norm? To which extent do they influence tax compliance behaviour? Do they influence systematically all individuals in the same way? We have seen that there are limits for a government to increase compliance using traditional policies such as audit and fines. Thus, can these norms be changed by deliberate government policies? If this is the case, how can governments influence norms to reduce tax evasion?

Posner (2000) defines social norm as equilibrium-signaling behaviour:

“When people shake hands, wear ties or high heels, eat with forks, give money to charities, exchange gifts with family members, and engage in similar ritualised activities, they are sending signals. Signals once started, tend to repeat themselves” (p. 1788).

Posner criticises that the tax compliance literature has not paid more attention to the costs of sanctioning the violation of norms and the case where social norms are undesirable. If others conform their behaviour according to a socially accepted mode of behaviour, the individual will also behave appropriately. Thus, individuals will comply and pay taxes as long as they believe that compliance is a social norm (see Alm, McClelland and Schulze 1999). Wenzel's (2001a, 2001b) experimental results indicate that taxpayers misperceive and underestimate others' tax morale. This can have a negative effect on their cooperation behaviour. Taxpayers might feel some pressure to behave in line with the assumed behaviour of others. Confronting individuals with this can have positive effects on cooperation.

V. EMPIRICAL EVIDENCE

Elffers (2000), as already stated, argues that it is important that people remain at the lower level of the staircase to tax evasion. Thus, it might be interesting to focus on the “willingness step”, which means that attitudes regarding tax evasion play an essential role. Thus, the empirical analysis focuses on tax morale. For this empirical analysis World Values Survey (WVS) data from Canada (1990) are evaluated (see Inglehart et al. 2000). Compared to other WVS countries, Canada offers a broad data set and variables that are central to our analysis, such as trust in government, religiosity and the advantage of a certain variety in religions. Many control variables have been integrated into the analysis: age, gender, family setting, education, income, financial satisfaction. The three key alternative social motives variables that are analysed are: trust in government, pride and religiosity. The theoretical connection between tax morale and trust in government has been analysed by Torgler (2002c, 2003a). Aspects of pride are not discussed intensively in economic literature. Boulding (1992) states:

“The dynamics which governs the creation, destruction, and distribution of various forms of pride and shame in society are very little understood, yet nothing perhaps is more crucial to the understanding of the overall dynamics of a particular society than the marked differences which exist among societies in this regard” (p. 93).

Pride is a widespread phenomenon. An individual could be proud of her/his country. Pride produces a sense of group identification. Such a group identification can be found, for example, in international soccer games (World Cup). Tyler (2000) argues that pride influences people’s behaviour in groups, organizations and societies. It gives a basis for encouraging cooperative behaviour. Thus, the more someone is proud to be, e.g., Canadian, the higher tax morale (see also Torgler 2003b, 2003c, 2003d)³.

As religious variable we take the variable frequency of church attendance (CHURCH ATTENDANCE).

³ The question was: How proud are you to be Canadian? 4=very proud, 1=not at all proud).

1. Estimation Results

Weighted ordered probit models are estimated. Equation 2 and 3 integrate the factors TRUST IN GOVERNMENT and PRIDE. Finally, equation 4 combines both factors and integrates “religiosity and confession”. This allows a sensitivity analysis. *Table 1* presents the results.

People at the age between 30 and 64 have a higher tax morale than younger people between 16 and 29. In all models, females report a significantly higher tax morale than males. For example, the marginal effect in equation (1) indicates that the probability of stating that tax evasion is never justified is 8.2 percentage points higher for females than for males. Education has no significant effect on tax morale. Looking at the marital status, only separated people have a significantly higher tax morale than singles. Financial satisfaction has a significant positive and a higher income a negative effect on tax morale. The coefficient for financial satisfaction show that an increase by one unit raises the share of persons showing the highest tax morale by around 3 percentage points. On the other hand, an increase by one unit in the income class reduces the share of taxpayers indicating the highest tax morale by 2.6 percentage points. Students have a significantly lower tax morale than full time employees. Trust in government and pride have a highly significant positive effect on tax morale. An increase in pride by one point raises the share of persons indicating the highest tax morale by 8%. The results regarding the trust variable give insight into the question how tax morale can be created or destroyed by government actions. An increase of trust by one unit raises the share of persons indicating the highest tax morale by 12.2% (see equation 2). However, integrating all variables together reduces the significance of the trust coefficient. The coefficient for church attendance is significant with a positive sign. Thus, the results seem to confirm our predictions suggesting that religiosity has a positive effect on tax morale. On the other hand, the coefficients of the confession variables (CATHOLIC, PROTESTANT, OTHER) are not significant. This shows that it is not confession to increase tax morale and act as a behavioural constraint and thus possibly inhibiting illegal behaviour, but religiosity.

Table 1
Determinants of Tax Morale in Canada (1990)

<i>weighted ordered probit</i> <i>Dependent variable: Tax morale</i>	<i>Eq(1)</i>			<i>Eq(2)</i>			<i>Eq(3)</i>			<i>Eq(4)</i>		
<i>Variables</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>									
<i>a) Demographic Factors</i>												
AGE 30-49	0.214**	2.343	0.079	0.208**	2.267	0.081	0.225**	2.439	0.087	0.238**	2.574	0.092
AGE 50-64	0.394***	3.461	0.150	0.377***	3.313	0.146	0.401***	3.501	0.155	0.375***	3.277	0.145
AGE 65+	0.297*	1.735	0.110	0.256	1.486	0.099	0.252	1.482	0.097	0.197	1.124	0.076
FEMALE	0.215***	3.034	0.082	0.218***	3.079	0.084	0.182**	2.550	0.070	0.169**	2.317	0.065
EDUCATION	0.022	1.380	0.009	0.020	1.267	0.008	0.027	1.692	0.010	0.024	1.510	0.009
<i>b) Marital Status</i>												
MARRIED	0.167*	1.726	0.068	0.164*	1.691	0.064	0.157	1.596	0.061	0.128	1.292	0.049
LIVING TOGETHER	0.024	0.191	0.014	0.040	0.310	0.016	0.086	0.669	0.033	0.124	0.950	0.048
DIVORCED	0.012	0.059	0.009	0.005	0.024	0.002	0.039	0.187	0.015	0.026	0.124	0.010
SEPARATED	0.424**	2.040	0.168	0.420**	2.020	0.162	0.422**	1.999	0.163	0.420**	2.041	0.162
WIDOWED	0.452	2.403	0.179	0.444**	2.387	0.172	0.459**	2.440	0.177	0.444**	2.346	0.172
<i>c) Economic Variables</i>												
INCOME	-0.064***	-3.902	-0.026	-0.066***	-4.066	-0.026	-0.066***	-3.974	-0.025	-0.065***	-3.906	-0.025
FINANCIAL SATISFACTION	0.075***	4.694	0.030	0.071***	4.391	0.027	0.075***	4.632	0.029	0.069***	4.216	0.027
<i>d) Employment Status</i>												
PART TIME EMPLOYED	-0.099	-0.820	-0.038	-0.099	-0.815	-0.038	-0.060	-0.488	-0.023	-0.067	-0.548	-0.026
SELFEMPLOYED	0.070	0.422	0.028	0.079	0.473	0.031	0.071	0.426	0.028	0.071	0.426	0.028
UNEMPLOYED	-0.043	-0.311	-0.015	-0.054	-0.386	-0.021	-0.029	-0.206	-0.011	-0.041	-0.289	-0.016
AT HOME	0.129	1.016	0.048	0.117	0.917	0.045	0.132	1.032	0.051	0.113	0.870	0.044
STUDENT	-0.392**	-2.036	-0.152	-0.377*	-1.947	-0.146	-0.356*	-1.826	-0.138	-0.343*	-1.785	-0.132
RETIRED	0.117	0.819	0.043	0.141	0.975	0.054	0.134	0.938	0.052	0.137	0.941	0.053
OTHER	0.390	1.424	0.151	0.362	1.344	0.140	0.381	1.355	0.147	0.342	1.211	0.132
<i>e) Further Variables</i>												
TRUST IN GOVERNMENT				0.122***	2.821	0.047				0.084*	1.872	0.033
PRIDE							0.207***	4.226	0.080	0.178***	3.499	0.069
CHURCH ATTENDANCE										0.040**	2.005	0.015
CATHOLIC										-0.011	-0.112	-0.004
PROTESTANT										0.123	1.200	0.048
OTHER										0.101	0.586	0.039
Observations	1341			1341			1341			1341		
Prob(LM-statistic)	0.000			0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marg.= marginal effects for the highest tax morale value.

VI. CONCLUSIONS

This paper has started to indicate the possibilities and the limitations of game theory. Experiments have been among the most important instruments to analyse the theoretical considerations. The designs of experiments had a strong game theoretical context. However, experiments also showed the limits of standard models of income tax evasion. In many experiments the compliance rate was much higher than such models would predict. This motivated researchers to expand the focus and thus to integrate additional factors, such as moral costs or social norms. The game theoretical approach had the deficit not to analyse aspects as procedural rules, communication or information asymmetry. Recent experiments have indicated that it is important to search for factors that shape the intrinsic motivation to pay taxes. This means that not only the evading process is the focus of analysis. Why many people comply and what the factors are that influence tax compliance are important questions treated now by tax compliance researchers. Thus, tax morale as an intrinsic motivation to pay taxes might be a key determinant in this puzzle. With data from the World Values Survey, choosing Canada, strong evidence has been found that trust in government, pride of being a citizen of Canada, and religiosity have a significantly positive influence on tax morale. This effect tends to persist even after controlling for age, income, education, gender, marital status, and employment status. However, more empirical work is needed to better understand tax morale. One limitation might be that we have constructed our dependent variable based on one single item. Future surveys might give the possibility to build multiple item questions regarding tax morale which would help to check the robustness of the obtained results.

APPENDIX

Table A1
Derivation of Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
CHURCH ATTENDANCE	A part from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never)
INCOME	Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions. <ol style="list-style-type: none"> 1. Under \$10.000 per year 2. \$10.000-14.999 3. \$15.000-19.999 4. \$20.000-24.999 5. 25.000-29.999 6. \$30.000-39.999 7. \$40.000-49.999 8. \$50.000 and 59.999 9. \$60.000-69.999 10. \$70.000 and over per year
EDUCATION	At what age did you or will you complete your full time education, either at school or at an institution of higher education? Please exclude apprenticeships.
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)
PRIDE	How proud are you to be Canadian? <ol style="list-style-type: none"> 4 Very proud 3 Quite proud 2 Not very proud 1 Not at all proud

Source: Inglehart et al. (2000).

REFERENCES

- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Alm, J. (1999). Tax Compliance and Administration, in: W. B. Hildreth, J. A. Richardson (eds.), *Handbook on Taxation*. New York: Marcel Dekker: 741-768.
- Alm, J., B. R. Jackson and M. McKee (1992a). Deterrence and Beyond: Toward a Kinder, Gentler IRS, in: J. Slemrod (ed.), *Why People Pay Taxes*. Ann Arbor: University of Michigan Press: 311-329.
- Alm, J., B. R. Jackson and M. McKee (1992b). Estimating the Determinants of Taxpayer Compliance with Experimental Data, *National Tax Journal*. 45: 107-115.
- Alm, J., B. R. Jackson and M. McKee (1992c). Institutional Uncertainty and Taxpayer Compliance, *American Economic Review*. 82: 1018-1026.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Axelrod, R. (1984). *The Evolution of Cooperation*. New York: Basic Books.
- Baldry, J. C. (1986). Tax Evasion Is Not A Gamble : A Report on Two Experiments, *Economics Letters*. 22: 333-335.
- Baldry, J. C. (1987). Income Tax Evasion and the Tax Schedule: Some Experimental Results, *Public Finance*. 42: 357-383.
- Blackwell, C. (2002). A Meta-Analysis of Tax Compliance Experiments, Paper presented at the Annual Meeting of the Public Choice Society and Economic Science Association, San Diego, March 22-24, 2002.
- Bolton, G. E. and A. Ockenfels (2000). ERC: A Theory of Equity, Reciprocity and Competition, *American Economic Review*. 90: 166-193.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Boulding, K. E. (1992). *Towards a New Economics*. Cheltenham, UK: Edward Elgar.
- Cowell, F. A. (1990). *Cheating the Government*. The Economics of Evasion. Cambridge: MIT Press.
- Elffers, H. (2000). But Taxpayers Do Cooperate!, in: M. Van Vugt, M. Snyder, T. R. Tyler, A. Biel (eds.), *Cooperation in Modern Society*. Promoting the Welfare of Communities, States and Organizations. London: Routledge: 184-194.

- Engel, E. R. A. and J. R. Hines (1999). Understanding Tax Evasion Dynamics, National Bureau of Economic Research Working Paper 6903.
- Erard, B. and J. S. Feinstein (1994). The Role of Moral Sentiments and Audit Perceptions in Tax Compliance, *Public Finance*. 49: 70-89.
- Feld, L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Fehr, E. and K. M. Schmidt (1999). A Theory of Fairness, Competition, and Cooperation, *Quarterly Journal of Economics*. 114: 817-868.
- Frey, B. S. (1997). *Not Just for the Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.
- Frey, B. S. (2001). *Inspiring Economics*. Human Motivation in Political Economy. Cheltenham, UK: Edward Elgar.
- Frey, B. S. and M. J. Holler (1998). Tax Compliance Policy Reconsidered, *Homo Oeconomicus*. 15: 27-44.
- Graetz, M. J. and J. F. Reinganum, L. L. Wilde (1986). The Tax Compliance Game: Toward an Interactive Theory of Law Enforcement, *Journal of Law, Economics, and Organization*. 2: 1-32.
- Greenberg, J. (1984). Avoiding Tax Avoidance: A (Repeated) Game-Theoretic Approach, *Journal of Economic Theory*. 32: 1-13.
- Hardin, R. (1968). The Tragedy of the Commons, *Science*. 162: 1243-1248.
- Hardin, R. (1982). *Collective Action*. J Baltimore/London: Johns Hopkins University Press.
- Heap H. S. and Y. Varoufakis (1997). *Game Theory*. A Critical Introduction. London/New York: Routledge.
- Hume, D. (1739-40/1969). *A Treatise of Human Nature*. London: Penguin.
- Inglehart, R. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Kahn, H. (1965). *On Escalation: Metaphors and Scenarios*. New York: Frederick A. Praeger.
- Kant I. (1785 /1964). *Groundwork of the Metaphysic of Morals*. New York: Harper Torchbooks.
- Kirchgässner, G. (2000). *Homo Oeconomicus*, second edition. Tübingen: Mohr Siebeck.
- Kirstein, R. and D. Schmidtchen, D. (1997). Imperfect Decision-Making and the Tax Payer Puzzle, Discussion Paper No. 9701, Center for the Study of Law and Economics.
- Landsberger, M. and I. Meilijson (1982). Incentive Generating State Dependent Penalty System: The Case of Income Tax Evasion, *Journal of Public Economics*. 19: 333-352.
- Levi, M. (1988). *Rules and Revenue*. Berkeley/Los Angeles/London: University of California Press.
- Levi, M. (1997). *Consent, Dissent, and Patriotism*. Cambridge: Cambridge University Press.
- Ledyard, J. (1995). Public Goods: A Survey of Experimental Results, in: J. H. Kagel and A. E. Roth, (eds.), *The Handbook of Experimental Economics*. Princeton University Press, Princeton: 111-194.

- Long, S. and J. Swingen (1991). The Conduct of Tax-Evasion Experiments: Validation, Analytical Methods, and Experimental Realism, in: P. Webley, H. Robben, H. Elffers and D. Helsing, *Tax Evasion: An Experimental Approach*. Cambridge University Press, Cambridge: 128-138.
- Maital, S. (1982). *Minds, Markets, and Money*. New York: Basic Books.
- Pommerehne, W. W. , A. Hart and B. S. Frey (1994). Tax Morale, Tax Evasion and the Choice of Policy Instruments in Different Political Systems, *Public Finance*. 49 (Supplement): 52-69.
- Posner, E. A. (2000). Law and Social Norms: The Case of Tax Compliance, *Virginia Law Review*. 8: 1781-1819.
- Pyle, D. J. (1991). The Economics of Taxpayer Compliance, *Journal of Economic Surveys*. 5: 163-198.
- Recktenwald, H. C. (1999). Würdigung des Gesamtwerkes, in: Smith, A., *Der Wohlstand der Nationen*. München: dtv: XV-LXXIX.
- Schnellenbach, J. (2002). Tax Morale, Leviathan and the Political Process: A Theoretical Approach, Paper presented at the Annual European Public Choice Society Conference in Belgrate, April 4-7.
- Sen, A. K. (1967). Isolation, Assurance and the Social Rate of Discount, *Quarterly Journal of Economics*. 80: 112-124.
- Sen, A. K. (1973). *On Economic Inequality*. Oxford: Oxford University Press.
- Sen, A. K. (1974). Choice, Ordering and Morality, in: S. Körner (ed.), *Practical Reason*. Oxford: Blackwell: 54-67.
- Sethi R. and E. Somanathan (2001). Understanding Reciprocity, *Journal of Economic Behavior and Organization*. 97: 273-297.
- Smith, A. (1759/1976). *Theory of Moral Sentiments*. Oxford: Clarendon Press.
- Torgler, B. (2001). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002a). Vertical and Exchange Equity in a Tax Morale Experiment, WWZ-Discussion Paper 02/02, University of Basel.
- Torgler, B. (2002b). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-683.
- Torgler, B. (2002c). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.
- Torgler, B. (2003a). Tax Morale, Rule-Governed Behaviour and Trust forthcoming in: *Constitutional Political Economy*.
- Torgler, B. (2003b). Tax Morale in Transition Countries, forthcoming in: , forthcoming in: *Post-Communist Economies*.
- Torgler, B. (2003c). Tax Morale in Latin America, WWZ-Discussion Paper, Basel: WWZ.
- Torgler, B. (2003d). Tax Morale in Asian Countries, WWZ-Discussion Paper, Basel: WWZ.

- Tucker, A. W. (1950). A Two-Person Dilemma. mimeo, Stanford University.
- Tyler, T. R. (2000). Why Do People Cooperate in Groups?, in: M. Van Vugt, M. Snyder, T. R. Tyler, A. Biel (eds.), *Cooperation in Modern Society*. Promoting the Welfare of Communities, States and Organizations. London: Routledge: 65-82.
- Van Vugt, M., M. Snyder, T. R. Tyler, T. R., A. Biel (eds.) (2000). *Cooperation in Modern Society*. Promoting the Welfare of Communities, States and Organizations. London: Routledge.
- Van Winden, F. (2002). Experimental Investigation of Collective Action, forthcoming in: S. Winer and H. Shibata (eds.), *Political Economy and Public Finance*. The Role of Political Economy in the Theory and Practice of Public Economics. Cheltenham: Edward Elgar: 178-196.
- Webley, P. and S. Halstead (1986). Tax Evasion on the Micro: Significant Simulations or Expedient Experiments?, *Journal of Interdisciplinary Economics*. 1: 87-100.
- Wenzel, M. (2001a). Misperceptions of Social Norms about Tax Compliance (1): A Prestudy, Working Paper No. 7, Centre for Tax System Integrity, The Australian National University.
- Wenzel, M. (2001b). Misperceptions of Social Norms about Tax Compliance (2): A Field Experiment, Working Paper No. 8, Centre for Tax System Integrity, The Australian National University.
- Yitzhaki, S. (1974). A Note on Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 3: 201-202.

CHAPTER XIV

DOES CULTURE MATTER?

TAX MORALE IN AN EAST-WEST-GERMAN COMPARISON*

ABSTRACT

This paper provides a comparison of tax morale between inhabitants of East and West Germany after its post-reunification period, using World Values Survey data between 1990 and 1997. The setting of the German reunification is particularly interesting for the analysis of tax morale as it is close to a natural experiment. For the years 1990 and 1997 our findings show a higher tax morale in East Germany than in West Germany. However, tax morale in the East seems to erode over time. Around three quarters of the East-West differential disappeared in just seven years. Adherence to social norms as practised in the GDR provides a key explanation of why tax morale is higher in the East.

JEL classification: H260, H730

Keywords: tax morale, tax compliance, tax evasion, culture, social norms

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I. INTRODUCTION

The purpose of this paper is to analyse tax morale in Eastern and Western Germany. Before starting with the empirical part, Section II analyses if there is a cultural difference between the two parts of the country. The empirical part in Section III starts with a descriptive analysis to see if there is a difference between Eastern and Western Germany. As observed differences might be explained in terms of specific differences, in the second part of the section multiple regressions are conducted. First cross-sections of individuals in each part of the country are analysed separately for the year 1997. This helps to analyse factors that influence tax morale. In a second step, we check if there is a significant difference between Eastern and Western Germany. In a third step we are going to do the same comparison with data from 1990 just after the reunification. After focusing on the differences between East and West, we are going to analyse the development of tax morale over time. Such a comparison is interesting, due to the historical event of German reunification with the fall of the Berlin Wall on November 9th 1989. Eastern and Western taxpayers grew up in a different social environment. German reunification allows us to better isolate so called culture factors from other factors and is close to a natural experiment. Many factors can be controlled because they are similar as, e.g., a common language, similar education systems and a shared cultural and political history prior to the separation after the second World War. As a consequence, an East-West Germany comparison has a methodological advantage compared to cross-country studies.

II. IS THERE A CULTURE DIFFERENCE BETWEEN EAST AND WEST GERMANY?

Culture is a difficult term to define. Heinrich et al. (1999) define it as:

“information stored in people’s heads, which can be transmitted among individuals. This information can be thought of as the ideas, values, beliefs, behavioural strategies, perceptual models and organizational structures that reside in individual brains, and can be learned by other individuals through imitation, observation (plus inference), interaction, discussion and/or teaching” (p. 2).

According to Kasper and Streit (1999, p. 162) culture bridges the tension between individuals and the social group and hinges on learned institutions and their underpinned values. Similar to Heinrich et al. (1999), they see culture as a kind of language which is based on rule systems, as ideas, values, internal institutions as customs and conventions and external institutions. It covers the tools, techniques, works of art, rituals and symbols. They point out:

“We may thus see culture as a largely implicit rule system that is underpinned by symbols and other reminders of its institutional content” (p. 162).

Heinrich et al. (1999) argue that culture transmission mechanisms provide a means to solve the problem of cooperation, building a mechanism similar to conformism which creates a force that maintains common behaviour and thus cooperation. Thus, an essential question in the tax compliance context is whether culture influences cooperation, solidarity, or, what we are going to analyse with World Values Survey data, tax morale. Tax morale reflects whether complying with the law is a social norm. The German reunification allows us to analyse the effects of different cultures on tax morale using two World Values Survey waves. The comparison between Eastern and Western Germany might give important insights into the effects of social norms. Ockenfels and Weimann (1999) report that there is the common belief that East Germans are still more cooperative and less selfish than West Germans. Many people in the eastern part miss the solidarity and cooperative spirit which was present in the years before the reunification. Ockenfels and Weimann (1999) conducted public good and solidarity experiments in Eastern and Western Germany. They found differences in cooperation and solidarity. East Germans are less cooperative than West Germans. They argued that socialist systems created a social dilemma:

“Individual effort to expand production was not rewarded and therefore not rational. Each person had to develop strategies to overcome the scarcity resulting from the unsolved dilemma” (p. 285).

Thus, people were *forced* to defect. Furthermore, the authors point out that possibly after the unification selfish behaviour was seen as linked to the free market-oriented system and thus justified.

Mummert and Schneider (2002, p. 292) report a significantly lower share of black labour in East Germany than in West Germany. In East Germany only 12.9% stated that they had been working in the shadow economy compared to 24.5% in West Germany.

Furthermore, the German institute *Forschungsstelle für empirische Sozioökonomik* in 1997 conducted a survey in former West and East Germany. The authors defined tax morale in a similar way as we do: “tax evasion is morally not justifiable at all”. The results show that in 1997 Eastern taxpayers had a higher tax morale than Western taxpayers. 66% of Eastern individuals agreed with this statement, compared to 53% in former West Germany. Compared to this study we are going to use higher sample units for both regions and analyse tax morale as dependent variable with multivariate regressions, controlling for many factors in order to avoid biased estimates.

Social norms are learned through daily experience. An important aim of the GDR regime was the adherence to norms. The regime served as norm entrepreneurs. The East German regime tried to integrate the population in its structure (e.g., mass organisations). Interpreting their findings, Mummert and Schneider (2002) point out that living in a totalitarian state for many years had led to a deep trust in authority. People gradually internalised norms they had been forced to respect for years. Once the norms of honesty are internalised, a person feels guilty when not acting according to them. Thus, people develop a preference for not violating social norms (Posner 2000). The results of Mummert and Schneider (2002) show effects of social norm enforcements. East Germans had a higher inclination to wanting actors of the shadow economy to be punished. Such a norm enforcement

“might as well be the outcome of a “public reflex” cultivated over decades in a socialist system where differing private opinions had no right to exist” (p. 300).

If norms are learned, we would expect tax morale to decrease in the East over time and to increase with age, as individuals were exposed for a longer time to an environment where social norm adherence was important. Our empirical data analysis will help to analyse this point.

III. DATA ANALYSIS

1. Descriptive Statistics

First we are going to analyse if there is a different tax morale in East Germany and West Germany, presenting descriptive statistics. In order to analyse the development over time, we display in *Figure 1* a histogram which refers to the distribution of tax morale scores in East and West Germany for the year 1990 and in *Figure 2* the distribution for the year 1997. We can observe that there is a difference between both parts of the country. In both years, East Germans report a higher tax morale than West Germans. In the East in 1990, 67.2 percent of the respondents consider that tax evasion is never justifiable, compared to 40 percent in the West. However, we can observe a decay over time in East Germans' highest tax morale score from 67.2 in 1990 to 53.7 percent in 1997. On the other hand tax morale development in West Germany seems to be quite stable.

Figure 1

Tax Morale in East and West Germany in 1990

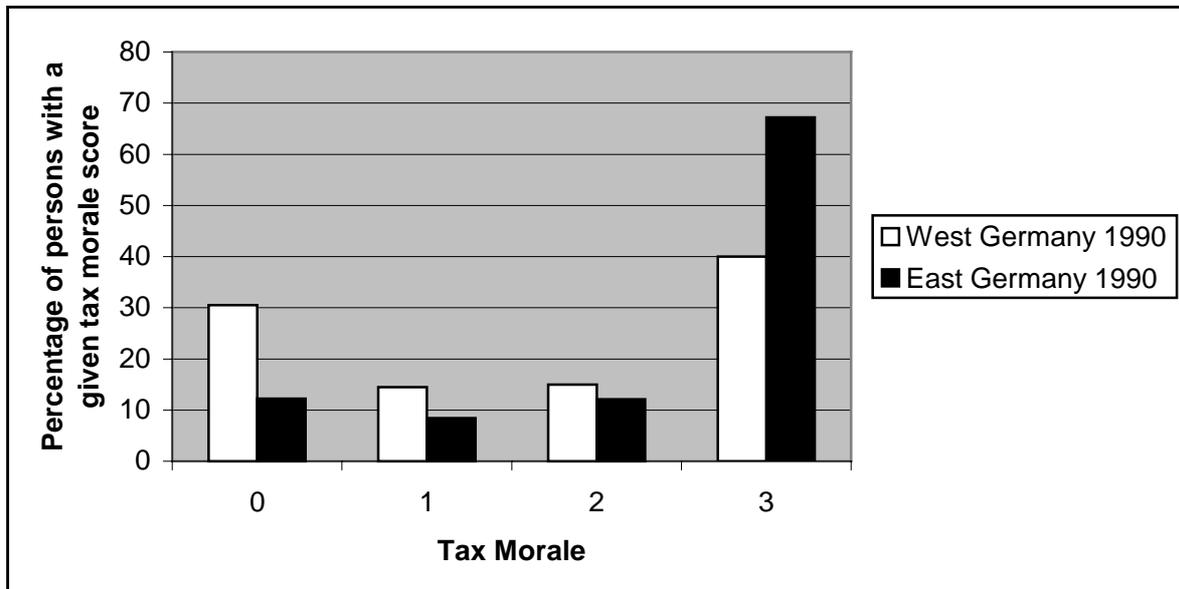
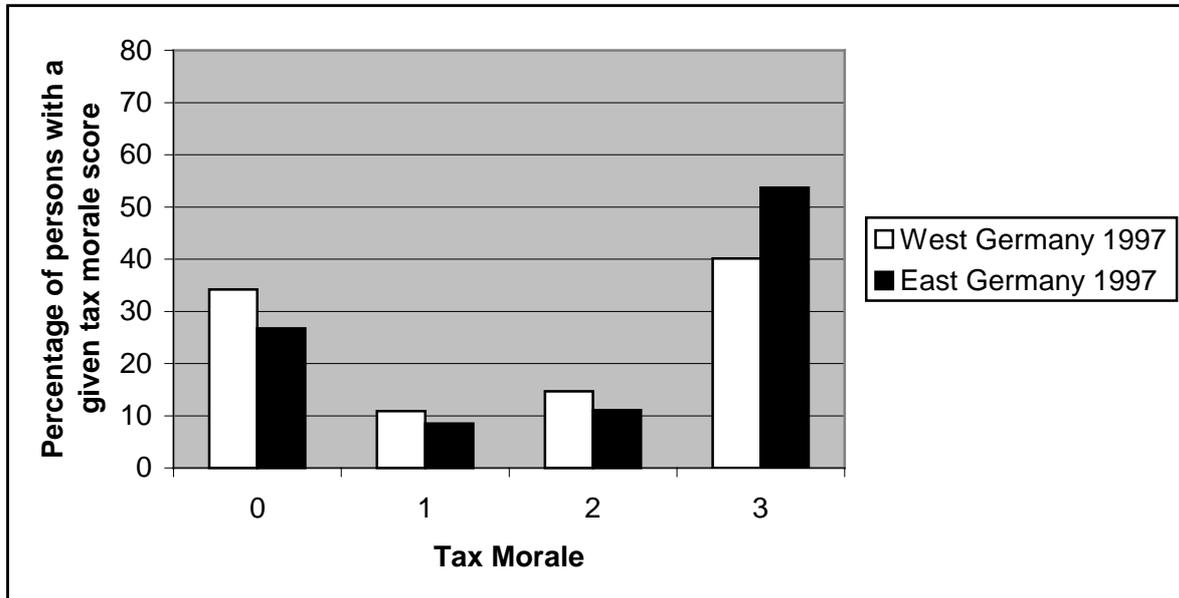


Figure 2

Tax Morale in East and West Germany in 1997



We test the hypothesis whether our different samples have the same distribution using the Wilcoxon rank-sum test (Mann-Whitney). The results presented in *Table 1* indicate that there is a significant difference between East and West Germany for both years, with higher z-values for the year 1990. Furthermore, tax morale has significantly decreased over time in East Germany, contrary to West Germany where no significant difference is observed.

Table 1

Two-Sample Wilcoxon Rank-Sum (Mann-Whitney) Test

Hypothesis	z-value	Prob > z
H_0 : TM West Germany 90 = TM East Germany 90	-16.159	0.000
H_0 : TM West Germany 97 = TM East Germany 97	-5.602	0.000
H_0 : TM East Germany 90 = TM East Germany 97	-7.914	0.000
H_0 : TM West Germany 90 = TM West Germany 97	0.812	0.417

Note: TM= Tax morale.

However, it should be noticed that a descriptive analysis gives information about the raw effects and not the partial effects. The observed differences between East and West might be explained in terms of differences in socio-demographic and socio-economic factors. Multiple regressions are conducted in Subsection IV.3, which help to disentangle the effects of socio-demographic and socio-economic factors from a possible culture difference.

2. Model and Variables

The World Values Survey (WVS) allows to analyse many factors and thus better isolate a possible culture factor. Thus, personality and demographic factors should be integrated into a multiple regression analysis. As dependent variable we use tax morale. The reported tax morale can be modelled in a micro-econometric tax morale function: $TM_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$ that is estimated ordered probit or logit. In this subsection we will focus on the independent variables $X = x_1 + x_2 + \dots + x_n$. These variables are socio-demographic and socio-economic characteristics, as well as formal and information constraints (e.g., institutions, social norms) on individual i at time t .

Socio-demographic variables appear to be important determinants of behaviour. However, as many empirical findings are based on the Taxpayer Compliance Measurement Program (TCMP), relatively little empirical evidence is available (for an overview *see Table A1* in the Appendix). Most theories have been developed by social psychologists. Tittle (1980) argues that older people are more sensitive to the threats of sanctions and over the years have acquired greater social stakes, as material goods, statuses, a stronger dependency on the reactions from others, so that the potential costs of sanction increase. We would predict that an increase in taxpayers' age has a positive effect on tax morale.

Do females have a different tax morale than males? Social psychological research suggests that women are more compliant and less self-reliant than men (e.g., Tittle 1980). However, if social psychology argues that the difference is based on the traditional female role, today's female generation, which is more independent, would have a lower tax morale or tax compliance. Thus, it is difficult to develop clear predictions regarding the gender effect on tax morale. For the past decade, experimental research findings show that gender may influence some aspects as, e.g., charitable giving, bargaining, and household decision making (see Andreoni and Vesterlund 2001, Eckel and Grossman 2001). However, public good

experiments do not show a clear picture (see, e.g., Brown-Kruse and Hummels 1993, Nowell and Tinkler 1994, Andreoni and Vesterlund 2001).

Marital status might influence legal or illegal behaviour depending on the extent to which individuals are constrained by their social networks (see Tittle 1980). It could be argued that married people are more compliant than others, especially compared to singles because they are more constrained. Thus, we would predict that individuals with stronger social networks, as married people, have a higher tax morale than singles.

The effect of education is not clear at all. Education is related to taxpayer's knowledge about the tax law. Better educated taxpayers are supposed to know more about tax law and fiscal connections, they are better aware of the benefits and services the state provides for the citizens from the revenues and thus would be in a better position to assess the degree of compliance (see Lewis 1982). On the other hand, they may be less compliant because they better understand the opportunities for evasion and avoidance and might be more critical about and better aware of how the state uses tax revenues. In sum, the hypothesis could be developed that a higher education leads to a lower tax morale.

The effects of income on tax morale are difficult to assess theoretically. Depending on risk preferences and the progression of the income tax schedules, income may increase or reduce tax morale. In countries with a progressive income tax rate, taxpayers with a higher income realise a higher dollar return by evading, but with possibly less economic utility. On the other hand, lower income taxpayers might have lower society "stakes" or restrictions but are less in the position to take these risks, because of a high marginal utility loss (wealth reduction) if they are caught and penalised (Jackson and Milliron 1986).

Does the occupation status influence tax morale? The standard argument is that self-employed taxpayers evade more taxes. Lewis (1982) argues that self-employed persons have higher compliance costs and taxes become more visible. Furthermore, tax evasion might depend on the opportunity to evade or avoid taxes. However, self-employed persons do not per se have a lower tax morale than other taxpayers. But it could be supposed that self-employed people have a lower tax morale than employees in East Germany, where contrary to West Germany, the institutions of a market system had to be established.

3. Results

First we are going to use WVS data from 1997. The determinants of tax morale are analysed with least squares and ordered probit models. *Table 2* presents the estimated coefficients and marginal effects of former West and East Germany, taking into account demographic and economic determinants.

Table 2
Determinants of Tax Morale in West and East Germany 1997

Variable	Equation 1 West Germany					Equation 1 East Germany				
	least squares		ordered probit			least squares		ordered probit		
	Coeff.	t-Stat.	Coeff.	z-Stat.	Marg.	Coeff.	t-Stat.	Coeff.	z-Stat.	Marg.
<i>a) Demographic Factors</i>										
AGE 30-49	-0.076	-0.596	-0.071	-0.608	-0.027	0.473***	2.974	0.436***	2.914	0.173
AGE 50-64	0.114	0.650	0.119	0.743	0.046	0.711***	3.861	0.656***	3.694	0.260
AGE 65+	0.116	0.434	0.148	0.592	0.057	0.950***	3.733	0.860***	3.329	0.341
FEMALE	0.179*	1.677	0.152	1.539	0.059	0.113	1.220	0.112	1.235	0.444
EDUCATION	-0.066***	-3.075	-0.060***	-3.051	-0.023	-0.055***	-2.502	-0.062***	-2.796	-0.024
<i>b) Economic Variable</i>										
INCOME	-0.038*	-1.652	-0.041*	-1.906	-0.016	-0.004	-0.151	-0.002	-0.069	-0.001
<i>c) Marital Status</i>										
MARRIED	0.459***	3.320	0.432***	3.391	0.166	0.243	1.526	0.221	1.433	0.087
LIVING TOGETHER	0.364**	2.051	0.329**	1.991	0.127	0.375**	2.014	0.345*	1.875	0.137
DIVORCED	0.426**	1.986	0.405**	2.117	0.156	0.245	1.114	0.193	0.876	0.077
SEPARATED	-0.207	-0.528	-0.201	-0.547	-0.077	-0.080	-0.203	-0.067	-0.194	-0.027
WIDOWED	0.316	1.398	0.305	1.430	0.117	-0.180	-0.765	-0.194	-0.849	-0.077
<i>d) Employment Status</i>										
PART TIME EMPLOYED	-0.001	-0.004	-0.004	-0.034	-0.008	-0.117	-0.536	-0.119	-0.605	-0.047
SELFEMPLOYED	-0.297	-0.854	-0.283	-0.865	-0.109	-0.654**	-2.363	-0.550**	-2.192	-0.218
UNEMPLOYED	-0.032	-0.128	-0.074	-0.319	-0.029	0.226	1.623	0.210	1.552	0.083
AT HOME	-0.029	-0.170	-0.043	-0.279	-0.017	0.305	0.838	0.154	0.397	0.061
STUDENT	-0.309	-1.605	-0.300	-1.607	-0.115	-0.131	-0.520	-0.045	-0.183	-0.018
RETIRED	0.315	1.472	0.275	1.371	0.106	0.222	1.282	0.268	1.510	0.106
OTHER	0.140	0.268	0.217	0.418	0.008	0.497	1.512	0.533	1.523	0.211
Number of observations	768					784				
Prob(F-statistic)	0.000					0.000				
Prob(LM-statistic)	0.000					0.000				

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 3 shows that the results are robust regarding the estimation methods. It is interesting to observe that we find a sizably different impact of the age profile on tax morale. While not significant in the West, it exerts a hugely significant influence on tax morale in the East. The marginal effects increase with an increase of the age. Thus, the group age 65 and above reports the highest tax morale of all groups. The proportion of persons aged 65 and more who report the highest tax morale is 34.1 percentage points higher than for the reference age group (age 16-29). In the least squares estimation for East Germany, the tax morale reported by individuals between 50 and 64 is on average around 0.7 score points higher than the one of the reference group.

In West and East Germany, education has a significant negative effect on tax morale. An increase in education by one unit reduces the share of persons indicating that tax evasion is never justifiable by more than 2 percentage points. In both countries females mostly do not report a significantly higher tax morale than males. Looking at the marital status, married people, couples who live together, and divorced individuals have a higher tax morale compared to singles in West Germany. On the other hand, in East Germany there is a significant difference only between couples who live together and singles. In West Germany the employment status has no significant effect on tax morale. Interestingly, only self-employed persons in East Germany have a significantly lower tax morale than full time employees. Being self-employed rather than a full time employee lowers the probability of a person stating that tax evasion is never justifiable by 21.8 percentage points.

1. East-West Differences in Tax Morale?

In a next step we are going to check first if there is a significant difference in tax morale between East and West Germany. The descriptive analysis has shown a significant difference between East and West. However, as already mentioned we are going to test whether these results remain robust controlling for other confounding influences as, e.g., age, education or income. It might be interesting to analyse first if there is a difference just after the reunification. Thus, we are going to put the data together and check the differences with a dummy variable for people living in the eastern part of Germany. As the income variable has been scaled differently in East and West, we excluded it from the equations¹. However, to get

¹ The income scale structure did not allow to build useful groups so as to make the income variable comparable (see Appendix *Table A2*).

a proxy for the economic situation, in Equation 4 we have integrated a variable where people had to classify themselves (lower class, working class, lower middle class, upper middle class, upper class).

Table 3
Comparison East and West Germany in 1990

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>Dependent V.: Tax Morale</i>			<i>Effect</i>			<i>Effect</i>			<i>Effect</i>
<i>Independent Variables</i>	2			3			4		
a) Demographic Variables									
AGE 30-49	0.145**	2.396	0.058	0.086	1.299	0.034	0.069	1.036	0.028
AGE 50-64	0.389***	5.537	0.155	0.318***	4.170	0.127	0.297***	3.868	0.119
AGE 65+	0.510***	5.047	0.203	0.417***	3.995	0.167	0.404***	3.863	0.161
OTHER FACTORS	yes			yes			yes		
b) Economic Variable									
							yes		
c) Marital Status									
	yes			yes			yes		
d) Employment Status									
	yes			yes			yes		
e) Culture Effect									
EASTERN	0.699***	12.186	0.279	0.543***	5.149	0.217	0.547***	5.168	0.218
AGE 30-49*EASTERN				0.159	1.170	0.064	0.172	1.257	0.068
AGE 50-64*EASTERN				0.210	1.311	0.084	0.221	1.377	0.088
AGE 65+*EASTERN				0.364*	1.940	0.145	0.348*	1.836	0.139
Number of observations	3340			3340			3340		
Prob(LM-statistic)	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, WESTERN. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Our first estimation (Eq. 2) findings in *Table 3* indicate that tax morale is significantly higher among eastern taxpayers. Only the marginal effects for the highest value (tax morale is never justifiable) are shown. The probability for inhabitants of East Germany to state the highest tax morale is 27.0 percent higher than for Westerns. Inhabitants of East Germany increase the probability of a person stating the highest tax morale by 27.9 percentage points. Thus, the findings show that tax morale is unambiguously higher in the East. Furthermore, the age coefficients suggest that an increase in the level of age has a positive effect on tax morale as the marginal effects increase from a lower age group to a higher one. However, as we have

pooled the observations of East and West, the great differences between age profiles in East and West can produce biases regarding the dummy variable EAST in *Table 3*. To control this problem, we build interaction terms in Equation 3 and 4. The EAST dummy then captures the differential for the reference group (individuals below age 30). It can be supposed that the effect of culture differences depends on the age profile in the east. As young people in 1990 have hardly been influenced by the western society, it could be hypothesized that younger East German citizens have a higher tax morale than the younger West Germans. The results show a significant difference between East and West in the age category below 30, with high marginal effects.

Now we are going to analyse whether the significant difference observed between East and West can also be found for the year 1997. If social norms are learned through daily experience as discussed in Section II, we should observe a decay of norms internalised in the GDR regime era. Furthermore, we might expect that elder citizens in the East have been more influenced by the norm indoctrination of the GDR regime. The results in *Table 4* show that the East-West difference has strongly diminished. While the marginal effect of the EAST dummy was 0.297 in 1990, it is only 0.076 in 1997. Thus, in seven years around three quarters of the East-West differential disappeared. Furthermore, the interaction terms in Eq. 3 and 4 indicate that most of the reduction comes from the Eastern youngest age group. There is no statistically significant difference between the youngest Easterners (16-29) and their Western counterparts. The results are in line with the expectations that younger individuals in the East, who were less exposed to the GDR regime, behave more like their counterparts in the West than the elder citizens. On the other hand, older Eastern citizens still display a higher tax morale than their Western counterparts.

Table 4
Comparison East and West Germany in 1997

<i>ordered probit</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat</i>	<i>Marg.</i>
<i>Dependent V.: Tax Morale</i>			<i>Effects</i>			<i>Effects</i>			<i>Effects</i>
<i>Independent Variables</i>	2			3			4		
a) Demographic Factors									
AGE 30-49	0.088	1.056	0.035	-0.074	-0.733	-0.029	-0.082	-0.762	-0.033
AGE 50-64	0.286***	2.698	0.114	0.105	0.790	0.042	0.022	0.156	0.009
AGE 65+	0.306**	1.967	0.122	0.133	0.753	0.053	0.010	0.053	0.004
OTHER FACTORS	yes			yes			yes		
b) Economic Variable									
							yes		
c) Marital Status									
	yes			yes			yes		
d) Employment Status									
	yes			yes			yes		
e) Culture Effect									
EASTERN	0.190***	3.308	0.076	-0.148	-1.304	-0.059	-0.117	-0.954	-0.047
AGE 30-49*EASTERN				0.426***	3.037	0.169	0.405***	2.711	0.161
AGE 50-64*EASTERN				0.456***	2.743	0.181	0.486***	2.780	0.194
AGE 65+*EASTERN				0.478**	2.492	0.190	0.500**	2.431	0.199
Number of observations	1947			1947			1782		
Prob(LM-statistic)	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, WESTERN. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

2. Tax Morale Development over Time

Up to this point, we focused on the differences between East and West Germany. However, *Figure 1* and *2* and the size of the marginal effects obtained in the regression estimations might indicate a decay of tax morale in East Germany over time. This would imply that the tax morale difference between East and West erodes over time. Thus, we are going to analyse East and West separately, building a dummy variable for the year 1997. As education has been coded differently in 1997 than in 1990, this variable has been excluded from the estimation. But East and West being analysed separately, the income variable can be added. It is no surprise that the results in *Table 5* do not indicate any significant difference between 1990 and 1997 for West Germany. But we can observe a decay of tax morale over time in

East Germany. Inhabitants had a significantly lower probability of reporting the highest tax morale in 1997 than in 1990, with high marginal effects of more than 17 percentage points.

Table 5
Comparison West and East Germany between the years 1990 and 1997

<i>weighted ordered probit</i>	<i>West Germany</i>			<i>East Germany</i>		
	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>
	5			6		
a) Demographic Variables	yes			yes		
b) Economic Variable	yes			yes		
c) Marital Status	yes			yes		
d) Employment Status	yes			yes		
<i>e) Culture Effect</i>						
West Germany 1997	0.097	1.448	0.037			
East Germany 1997				-0.472***	-7.992	-0.177
Number of observations	2704			2165		
Prob(LM-statistic)	0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group for West Germany: West Germany 1990; for East Germany: East Germany 1990. As education has been coded differently in 1990 and 1997, the variable has been excluded in the equations. As economic variable we find income.

These results might indicate that reunification entailed costs in terms of tax morale for Eastern inhabitants. This could be due to the great expectations East Germans had for the unification process, the introduction of the currency union and the massive federal transfers from West to East. But by 1997 the East German GDP per capita with 57% of the West German GDP was still relatively low, the unemployment rate was twice as high, and wages were on 75% of the Western level (Hunt 2000). These results are, however, in contrast to life satisfaction. Frijters, Haisken-DeNew and Shields (2002) using the German Socio-Economic Panel (GSOEP) between 1991 and 1999, report that East Germans experienced a continued improvement in life satisfaction, while West Germans' satisfaction level gradually fell. Nevertheless, life

satisfaction in East Germany was lower than in West Germany. Solidarity might be the key determinant to understand such a difference.

In general, the results obtained in this paper should be interpreted with caution. It would be wrong to conclude that the Communist system always had a positive effect on tax morale. Culture differences can not be compared by testing tax morale only. Other factors as liberty, freedom, or happiness are essential. A lower tax morale can express taxpayers' disagreement. Such a behaviour restricts government's possibilities to act as a Leviathan maximising its own preferences. Furthermore, if we look at the output variable "tax evasion", it could be argued that such an exit option is not per se never justifiable. Therefore, it is important to see how tax rules have been implemented. There is a difference between the tax rules implemented by a democratically legitimated political process and rules forcefully introduced by a dictator or by a not legitimated process or government. Paldam and Svendsen (2000, p. 1) cite Bulat Okudzhava who states in 1989:

"During the past 70 years, a new man has been created who is obedient and easily frightened. What has been created over the decades cannot be undone in a day".

In a dictatorship there is the intention to control and thus achieve an atomisation of human relationships (see Wintrobe 1998). In former East Germany, the STASI archives were examples for this kind of control. In former Communist countries the price for exit or voice was high. If a country is able to produce a high price for exit and voice, it acquires a powerful defense against these two potent weapons individuals have to express their preferences (see Hirschman, 1970). Paldam and Svendsen (2000) argue that a dictatorship such as the Communist one created conditions that favour the building of negative social capital, which may act as a brake on economic development as soon as the dictatorship is abolished. Plan fulfilment pressure was high, increasing thus the opportunity costs of non-cooperation. Control mechanisms as the STASI archive reduce trust, networks, and voluntary cooperation among individuals. On the other hand many individuals had to develop strategies to overcome the scarcity which might increase solidarity and cooperation in small groups like families or close friends.

In authoritarian political systems people's preferences are less integrated (see Torgler 2001). This tendency can also be seen in the development of the constitution of the German Democratic Republic. In 1949, the first constitution was oriented on the constitution of the Weimar Republic. Twenty years later it was replaced with a more socialist constitution with the intention to strengthen the communist regime (see Karsten 1993).

Furthermore, there might be a bias in the analysis, due to the transition process. In the period from 1991 till 1995, around 440 billion US\$ were transferred from west to east (around 26'000\$ for every inhabitant in the east) (see Kasper and Streit 1999). West Germans had to pay a high transfer burden which might negatively influence their tax morale. Positive expectations regarding the transfer process in East Germany might influence the survey answers in 1990. The survey has been conducted in fall 1990. The first free elections for East Germany have been held on March 1990, showing a strong support for parties which had the intention to speed up unification with the west. In July 1990 monetary, economic, and social union was established. Finally, in October the political union followed (see Hunt 2000). It could though be argued that the considerable transfer of funds to East Germany would have a positive effect on tax morale. However, compared to 1990 no higher tax morale was observed. Cialdini and Trost (1998) argue that people might have felt uncomfortable about receiving a gift, favour, services, or aid without reciprocating in some way. Reciprocity as a norm obligates individuals to return the form of behaviour they have received from another. East Germans might feel a sense of discomfort caused by transfer payments from West to East Germany. Kasper and Streit (1999) argue that East Germans have to unlearn the old institutions and to learn new ones which takes time and practice (e.g., a different tax system). In such a process, expectations were destabilised. The authors criticised that the transformation process failed to demonstrate in the east how effectively a deregulated market system works:

“Unification was based on a ‘social justice strategy’ whose effect was to destroy existing capital and jobs and delay the restructuring and modernisation of eastern Germany ... Despite opportunities at the start that were far better than in most former command economies, a quick transfer of the basic institutions and massive material aid, east German living standards are lagging far behind those of western Germany. As of 1996, average per capita standards in the east are barely half those in the west, and the speed with which the gap is closing has decelerated sharply during the mid-1990s” (pp. 447-448).

IV. CONCLUSIONS

This paper provides a comparison of tax morale between inhabitants of East and West Germany after the post-reunification period using World Values Survey data of the years

1990 and 1997. The setting of the German reunification is particularly interesting for the analysis of tax morale as it is close to a natural experiment and reduces problems of multinational cross studies. The results indicate that inhabitants of East Germany have a higher tax morale than those of West Germany, both in 1990 and 1997. Cultural background seems to have an effect on tax morale. Social norms adherence as practised in the GDR provides a key explanation of why tax morale is higher in the East. In the data of 1997 we can observe a higher tax morale for elder citizens in the East. On the other hand, we did not find a significant East-West difference between the younger individuals. Not surprisingly, a different result has been found just after the reunification in 1990, where in the East citizens below the age of 30 had a higher tax morale than their western counterparts. From 1990 to 1997, we observed a significant decrease in tax morale in East Germany, but not in West Germany. A key finding in this paper is the fact that around three quarters of the 1990 East-West differential disappeared in a short time period of seven years. Thus, a strong convergence in the level of tax morale between the two populations can be observed over the decade.

However, the results should be interpreted with caution. It can be argued that the findings indicate a higher solidarity to pay taxes in East Germany which might give a basis for tax compliance. Although compared to cross-country studies the reunification offers a good possibility to analyse different cultural contexts, survey questions after the reunification can have certain biases, which might reduce the control possibility of culture as an important variable to explain the differences in tax morale.

Nevertheless, the findings indicate that it might be fruitful to go beyond the standard economic model of tax compliance, moving into the direction of social psychology or sociology theories, and thus to analyse the effects of social norms on tax morale. Taxpayers' behaviour and values are not just influenced by deterrence factors as penalties and audits, but also by culture norms acting as constraints and varying between different environments.

APPENDIX

Table A1
Socio-Demographic and Socio-Economic Variables

Study	Variable	Reported Relationship
Aitken and Bonneville (1980)	age	(+)
Clotfelter (1983)	"	(+)
Friedland et al. (1978)	"	(+)
Groenland and van Veldhoven (1983)	"	(+)
Jackson and Jones (1985)	"	(+)
Mason and Calvin (1984)	"	(+)
Minor (1978)	"	(+)
Song and Yarbrough (1978)	"	()
Spicer (1974)	"	()
Spicer and Becker (1980)	"	()
Tittle (1980)	"	()
Vogel (1974)	"	()
Westat (1980)	"	()
Yankelovich, Skelly and White (1984)	"	curvilinear
Aitken and Bonneville 1980	females ^a	(+)
Anderhub et al. (2002)	"	(+)
Baldry (1987)	"	(+)
Minor (1978)	"	(+)
Spicer and Becker (1980)	"	(+)
Spicer and Hero (1985)	"	(+)
Tittle (1980)	"	(+)
Vogel (1974)	"	(-)
Vogel (1974)	education	(-)
Witte and Woodbury (1985)	"	(+)
Clotfelter (1983)	married ^b	(-)
Feinstein (1991)	"	(-)
Anderhub et al. (2002)	income	(-)
Clotfelter (1983)	"	(-)
Feinstein (1991)	"	()
Friedland et al. (1978)	"	(-)
Groenland and van Veldhoven (1983)	"	(-)
Jackson and Jones (1985)	"	(-)
Mason and Calvin (1984)	"	()
Song and Yarbrough (1978)	"	()
Spicer and Becker (1980)	"	()
Westat (1980)	"	(+)
Witte and Woodbury (1985)	"	(+)
Schmölders (1960)	self-employed ^c	()
Vogel (1974)	"	(-)

Notes: (+) positive, (-) negative, () no effect on tax compliance/morale; ^a compared to males; ^b compared to an other marital status; ^c compared to employees.

Table A2
Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always)
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deduction.</p> <p>West Germany</p> <ol style="list-style-type: none"> 1. Below 2.000 DM per month 2. 2.000-2.999 DM 3. 3.000-3.999 DM 4. 4.000-4.499 DM 5. 4.500-4.999 DM 6. 5.000-5.499 DM 7. 5.500-5.999 DM 8. 6.000-6.999 DM 9. 7.000-7.999 DM 10. 8.000 DM and over <p>East Germany</p> <ol style="list-style-type: none"> 1. Under 1.000 Marks per month 2. 1.000-1.299 Marks 3. 1.300-1.599 4. 1.600-1.799 5. 1.800-1.999 6. 2.000-2.199 7. 2.200-2.499 8. 2.500-2.799 9. 2.800-3.199 10. 3.200 Marks or more per month
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
EDUCATION	<p>For West and East Germany in 1997:</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type

	<ol style="list-style-type: none">6. Incomplete secondary: university-preparatory type7. Complete secondary: university-preparatory type8. Some university-level education, without degree9. University-level education, with degree <p>For West and East Germany in 1990:</p> <p>At what age did you or will you complete your full time education, either at school or at an institution of higher education? Please exclude apprenticeships:</p> <ol style="list-style-type: none">14. Completed education at the age of 14 or younger15. Completed education at the age of 1516. Completed education at the age of 1617. Completed education at the age of 1718. Completed education at the age of 1819. Completed education at the age of 1920. Completed education at the age of 2021. Completed education at 21 years of age or older
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Source: Inglehart et al. (2000)

REFERENCES

- Aitken, S. and L. Bonneville (1980). A General Taxpayer Opinion Survey. Washington, DC: Internal Revenue Service.
- Anderhub, V., S. Giese, W. Güth, A. Hoffmann and T. Otto (2002). Tax Evasion with Earned Income – An Experimental Study, *FinanzArchiv*. 58: 188- 206.
- Andreoni, J., L. Vesterlund (2001). Which Is the Fair Sex? Gender Differences in Altruism, *Quarterly Journal of Economics*. 116: 293-312
- Baldry, J. C. (1987). Income Tax Evasion and the Tax Schedule: Some Experimental Results, *Public Finance*. 42: 357-383.
- Brown-Kruse, J. and D. Hummels (1993). Gender Effects in Laboratory Public Goods Contribution: Do Individuals Put Their Money Where Their Mouth Is?, *Journal of Economic Behavior and Organization*. 22: 255-267.
- Cialdini, R. B. and M. Trost (1998). Social Influence: Social Norms, Conformity, and Compliance, in: D. T. Gilbert, S. T. Fiske and G. Lindzey (eds.), *The Handbook of Social Psychology*. Boston: The McGRAW-HILL Companies: 151-192.
- Clotfelter, C. T. (1983). Tax Evasion and Tax Rate: An Analysis of Individual Return, *The Review of Economics and Statistics*. 65: 363-373.
- Eckel, C. C. and P. J. Grossman (2001). Chivalry and Solidarity in Ultimatum Games, *Economic Inquiry*. 39: 171-88.
- Feinstein, J. S. (1991). An Econometric Analysis of Income Tax Evasion and its Detection, *RAND Journal of Economics*. 22: 14-35.
- Forschungsstelle für empirische Sozialökonomik (1997). Steuermentalität und Steuermoral der bundesdeutschen Bevölkerung und deren Einstellungen zur Steuerreform.
- Friedland, N., S. Maital and A. Rutenberg (1978). A Simulation Study of Income Tax Evasion, *Journal of Public Economics*. 10: 107-116.
- Frijters, P., J. P. Haisken-DeNew and M. A. Shields (2002). The Value of Reunification in Germany: An Analysis of Changes in Life Satisfaction, IZA Discussion Paper No. 419, January.
- Groenland, E. A. G. and G. M. van Veldhoven (1983). Tax Evasion Behavior: A Psychological Framework, *Journal of Economic Psychology*. 3: 129-144.
- Heinrich, J., P. Young, R. Boyd, K. McCabe, W. Albers, A. Ockenfels and G. Gigerenzer (1999). What Is the Role of Culture in Bounded Rationality?, unpublished manuscript.
- Hirschman, A. O. (1970). *Exit, Voice, and Loyalty*. Cambridge: Harvard University Press.
- Hunt, J. (2000). Why Do People Still Live in East Germany, NBER Working Paper No. w7564, February.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.

- Jackson, B. R. and S. Jones (1985). Salience of Tax Evasion Penalties Versus Detection Risk, *Journal of the American Taxation Association*. 6: 7-17.
- Jackson, B. R. and V. C. Milliron (1986). Tax Compliance Research: Findings, Problems, and Prospects, *Journal of Accounting Literature*. 5: 125-166.
- Karsten, S. G. (1993). Justice, Solidarity, Subsidiarity: The Demise of East German Communism, *International Journal of Social Economics*. 20: 44- 56.
- Kaspar, W. and M. E. Streit (1999). *Institutional Economics*. Social Order and Public Policy. Cheltenham, UK: Edward Elgar.
- Lewis, A. (1982). *The Psychology of Taxation*. Oxford: Martin Robertson.
- Mason, R. and L. D. Calvin (1984). Public Confidence and Admitted Tax Evasion, *National Tax Journal*. 37: 490-496.
- Minor, W. (1978). Deterrence Research: Problems of Theory and Method, in: J. A. Cramer (ed.), *Preventing Crime*. Beverly Hills: Sage: 21-45.
- Mummert, A. and F. Schneider (2002). The German Shadow Economy: Parted in a United Germany?, *FinanzArchiv*. 58: 287-317.
- Nowell, C. and S. Tinkler (1994). The Influence of Gender on the Provision of a Public Good, *Journal of Economic Behavior and Organization*. 25: 25-36.
- Ockenfels, A. and J. Weimann (1999). Types and Patterns: An Experimental East-West-German Comparison of Cooperation and Solidarity, *Journal of Public Economics*. 71: 275-287.
- Paldam, M. and G. T. Svendsen (2000). Missing Social Capital and the Transition in Eastern Europe, forthcoming in: *Journal for Institutional Innovation, Development and Transition*.
- Posner, E. A. (2000). *Law and Social Norms*. Cambridge: Harvard University Press.
- Schmölders, G. (1960). *Das Irrationale in der öffentlichen Finanzwissenschaft*. Hamburg: Rowolt.
- Song, Y. and Y. E. Yarbrough (1978). Tax Ethics and Taxpayer Attitudes: A Survey, *Public Administration Review*. 38: 442-457.
- Spicer, M. W. (1974). A Behavioral Model of Income Tax Evasion, Dissertation, Ohio State University.
- Spicer, M. W. and L. A. Becker (1980). Fiscal Inequity and Tax Evasion: An Experimental Approach, *National Tax Journal*. 33: 171-175.
- Spicer, M. W. and R. E. Hero (1985). Tax Evasion and Heuristics. A Research Note, *Journal of Public Economics*. 26: 263-267.
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Torgler, B. (2001). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 19: 143-168.
- Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data, *National Tax Journal*. 27: 499-513.

- Westat Inc. (1980). Self-Reported Tax Compliance: A Pilot Survey Report, Prepared for the Internal Revenue Service, 21 March.
- Wintrobe, R. (1998). *The Political Economy of Dictatorship*. Cambridge: Cambridge University Press.
- Witte, A. D. and D. F. Woodbury (1985). The Effect of Tax Laws and Tax Administration on Tax Compliance, *National Tax Journal*. 38: 1-14.
- Yankelovich, Skelly and White, Inc. (1984). Taxpayer Attitudes Survey: Final Report, Public Opinion Survey Prepared for the Public Affairs Division, Internal Revenue Service, New York.

CHAPTER XV

DOES CULTURE INFLUENCE TAX MORALE?

EVIDENCE FROM DIFFERENT EUROPEAN COUNTRIES^{*}

ABSTRACT

Tax compliance literature rarely analyses tax morale systematically. This paper provides a comparison of tax morale in different culture regions in Europe using World Values Survey data. The empirical findings using tax morale as a dependent variable indicate that there is a small significant difference between North and South Europe. Furthermore, culture differences in Switzerland, Belgium and Spain are analysed. According to the findings cultural background seems not to have always an effect on tax morale.

JEL classification: H260, H730

Keywords: tax morale, tax compliance, tax evasion, culture

^{*} Benno Torgler (2002). Does Culture Influence Tax Morale? Evidence From Different European Countries, WWZ-Discussion Paper 02/08, Basel: WWZ.

I. INTRODUCTION

The purpose of this paper is to focus on tax morale in Europe. It is often argued that we find a high degree of continuity, path dependency in major culture systems (see, e.g., Kasper and Streit 1999). Thus, we are going to analyse if we find differences between North and South Europe. Some earlier studies have observed a great variance of tax immorality between Romanic countries as France, Italy and Spain and Northern European countries (see Weck 1983, Weck, Pommerehne and Frey 1984, and Frey and Weck-Hannemann 1984). Europe offers not only a variety of cultural influences between countries but also within countries. The World Values Survey offers the possibility to isolate in a cross-section analysis individuals living in specific geographic regions. This gives the possibility to check the effects of culture differences on tax morale in specific countries with a certain culture variety. First we are going to analyse Switzerland, a land with four languages and three main ethnic groups, German, French, Italian speaking individuals. To better analyse if there is an effect of culture in Switzerland we have to control for specific Swiss institutions, as direct democracy. In a second step we analyse Belgium, a country with two main regions (Flanders and Walloon) and three languages (Flemish, French, and German). In a third step we look at Spain and control for regions with a strong identity as the Basque Country, Catalonia, Galicia, and Navarre. Although culture is relatively stable, it has a certain potential to change across time, as implicit and also explicit rules have a certain dynamic component (see Torgler 2003a for a theoretical analysis and for empirical evidence from Germany). In Switzerland and Spain we will have the possibility to do cross data analysis in different years. The paper finishes with some concluding remarks.

II. EMPIRICAL ANALYSIS

The World Values Survey (WVS) allows us to analyse many factors, giving the possibility to better isolate the influence of culture. Thus, personality and demographic factors should be integrated into a multiple regression analysis.

1. North and South Europe

There are not many studies that systematically analyse tax morale in different nations. Weck (1983), Weck, Pommerehne and Frey (1984), and Frey and Weck-Hannemann (1984) developed a “tax immorality” index and found a higher tax immorality in Romanic countries as France, Italy and Spain compared to other European countries. Kirchgässner (1999) argues that in the northern states of Europe, in contrast to the majority of Catholic countries in the south, state and religious authority were held by one person. Offenses against the state were therefore also religious offenses and consequently a sin.

With the World Values Survey 1990-1993 we have the possibility to integrate 18 European countries into an empirical study using multiple regression analysis. We are going to build dummy variables for Romanic and Northern Countries¹. Data from the World Values Survey 1995-1997 do not allow such a comparison, as only 7 of the 18 countries have participated (only Spain as Romanic country). All the surveys in the different countries have been conducted in 1990 with Switzerland as an exception where the survey has been done between 1988 and 1989.

Before starting with the multiple regression, we present in *Table 1* a descriptive analysis showing in column 2 the percentage of individuals in each country saying that tax evasion is never justifiable, and in column 3 the mean value for all countries based on a scale from 0 to 3. Northern countries show a higher tax morale than Romanic countries. However it should be noticed that the average in each column indicates that the differences between them are quite small.

¹ Italy, France, Portugal and Spain have been defined as Romanic countries; Austria, Belgium, Denmark, Finland, Great Britain, Iceland, Ireland, N. Ireland, Netherlands, Norway, Switzerland, Sweden, West and East Germany as Northern countries.

Table 1
Tax Morale in Europe 1989-1990

<i>Countries</i>	<i>Tax Evasion Is Never Justifiable (%)</i>	<i>Mean</i>
<i>Northern Countries</i>		
Austria	62.3	2.260
Belgium	33.9	1.276
Denmark	57.3	2.025
Finland	40.3	1.637
West Germany	40.4	1.659
East Germany	67.2	2.344
Great Britain	53.9	1.945
Iceland	56.0	2.000
Ireland	48.8	1.798
Northern Ireland	69.7	2.248
Netherlands	42.9	1.644
Norway	43.1	1.642
Sweden	56.4	2.013
Switzerland	63.8	2.100
Average	52.6	1.899
<i>Romantic Countries</i>		
France	46.5	1.688
Italy	55.2	1.967
Portugal	39.9	1.483
Spain	58.4	2.021
Average	50.0	1.790
Total Average	52.0	1.875

Notes: Own calculations from the World Values Survey. Second column: percentage of individuals saying that tax evasion is “never justified”. Third column: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

Table 2 presents the result of the multivariate data evaluation showing similar findings for the weighted least squares and weighted ordered probit estimations. We find a similar picture as in the descriptive statistics. People from Northern Europe have a significantly higher tax morale than people from Southern Europe. In the weighted least squares estimation, individuals from Romanic countries on average report a lower tax morale (around 0.064 score points) than the reference group. In the weighted ordered probit estimation, the marginal effects indicate that being from a Romanic country rather than from Northern Europe reduces the probability of stating that tax evasion is never justified by 3 percentage points. Equation 3 uses another

weighting variable. To get an equal number of weighted observations (around 1500) for each survey the original weight variable was multiplied by a constant for each country.

Table 2
Determinants of Tax Morale in Europe (1989-1990)

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>Equation 1</i>		<i>Equation 2</i>			<i>Equation 3</i>		
	<i>weighted</i>		<i>weighted</i>			<i>weighted</i>		
<i>Independent Variable</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>a) Demographic Factors</i>								
AGE 30-49	0.179***	7.342	0.158***	13.513	0.063	0.147***	10.230	0.060
AGE 50-64	0.330***	11.449	0.300***	21.359	0.120	0.321***	17.700	0.128
AGE 65+	0.541***	13.806	0.529***	26.676	0.211	0.569***	21.896	0.227
FEMALE	0.222***	12.211	0.208***	23.053	0.083	0.234***	20.861	0.093
<i>b) Marital Status</i>								
MARRIED	0.111***	4.343	0.102***	8.143	0.041	0.070***	4.466	0.028
LIVING TOGETHER	-0.216***	-5.913	-0.186***	-11.264	-0.074	-0.141***	-6.745	-0.056
DIVORCED	-0.011	-0.238	-0.003	-0.154	-0.001	0.014	0.488	0.005
SEPARATED	-0.213**	-2.778	-0.194***	-5.773	-0.077	-0.118**	-2.508	-0.047
WIDOWED	0.125***	3.097	0.128***	6.415	0.051	0.079***	2.759	0.032
<i>d) Employment Status</i>								
PART TIME EMPLOYED	0.001	0.024	-0.001	-0.058	-0.000	-0.066***	-3.396	-0.027
SELFEMPLOYED	-0.128***	-3.332	-0.121***	-6.083	-0.048	-0.154***	-5.628	-0.061
UNEMPLOYED	-0.080*	-1.872	-0.067***	-3.288	-0.027	-0.093***	-3.323	-0.037
AT HOME	-0.022	-0.786	-0.016	-1.158	-0.007	-0.064***	-3.481	-0.026
STUDENT	-0.092**	-2.255	-0.077***	-3.779	-0.031	-0.146***	-5.905	-0.058
RETIRED	0.036	1.126	0.039**	2.393	0.016	0.012	0.528	0.004
OTHER	-0.148**	-2.316	-0.131***	-5.086	-0.052	-0.087***	-2.694	-0.035
<i>e) Religious Variable</i>								
CHURCH ATTENDANCE	0.065***	15.496	0.061***	27.902	0.024	0.046***	16.860	0.018
<i>f) Culture Variable</i>								
ROMANIC	-0.064***	-3.698	-0.056***	-6.910	-0.022	-0.074***	-5.953	-0.030
Observations	24840							
R-squared								
Prob(F-statistic)	0.000							
Prob(LM-statistic)	0.000				0.000			

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NORTHERN EUROPEAN COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4). EQ. 3 uses another weighting variable: original weight variable was multiplied by a constant for each country, in order to produce a equal weighted N for each survey.

The control variables indicate the following results: An increase in the level of age has a positive effect on tax morale. We find that the marginal effects increase from a lower age group to a higher one. Being at the age of 65 or higher increases the probability of a person stating the highest tax morale by more than 20 percentage points compared to the reference group. Females on average report a higher tax morale than males. Furthermore, married and widowed individuals report a higher tax morale than singles. Compared to full-time employees, the share of self-employers reporting the highest tax morale is by around 5 percentage points lower. The results correspond to the standard argument that self-employed taxpayers have a lower tax compliance, based on higher compliance and opportunity costs of being honest. We have also integrated religiosity into the equations, taking the variable “frequency of church attendance” as proxy. The findings indicate that religiosity has a positive effect on tax morale.

In a next step we are going to check the robustness of the results obtained integrating more variables into the equations. First, pride has been integrated into the equation (see Eq. 4). *Table 3* shows that pride has also a positive effect on tax morale. In Equation 5 financial satisfaction has been added. The results indicate that financial satisfaction has a small positive effect on tax morale. Equation 6 integrates income into the Equation 5. It should be noticed that this variable has a lot of missing values which might create a certain bias in the results. Our results indicate that higher income reduces tax morale. In the last two equations trust in the legal system has been added to Equation 1, in Equation 7 without income and in Equation 8 with the income variable. Similar to other studies, trust in the legal system has a positive effect on tax morale (see Torgler 2002, 2003b, 2003c, 2003d, 2003e).

The coefficient of the variable ROMANIC in the Equations 4 through 6 is robust regarding the addition of further variables. However, after introducing the variable TRUST IN LEGAL SYSTEM the coefficient loses part of its significance. In Equation 6 we have used again the same weighting variable as in equation 3. In general, some results must be treated with caution. If the sample size is quite large like in our case, there is a tendency for parameters to become significant (see Kennedy 1998). A larger sample size reduces the variance and thus makes it difficult to interpret the usual significance test. One way to control the problem is to look at the marginal effects or to adjust the significance level downwards.

Table 3
Sensitivity Analysis Regarding Culture Differences in Europe in Europe 1989-1990

<i>Weighted Ordered Probit Dependent V.: Tax Morale</i>	<i>Coeff.</i>	<i>Marg. Effect</i>								
<i>Independent Variables</i>	4		5		6		7		8	
<i>a) Demographic Variables</i>	included									
<i>b) Economic Situation</i>										
INCOME					-0.03***	-0.0121			included	
<i>c) Marital Status</i>	included									
<i>d) Employment Status</i>	included									
<i>e) Religious Variable</i>	included									
<i>f) Culture Variables</i>										
ROMANIC	-0.055***	-0.022	-0.050***	-0.020	-0.066***	-0.027	-0.013	-0.005	-0.023*	-0.009
<i>g) further Variables</i>										
PRIDE	0.159***	0.063	0.159***	0.063	0.159***	0.063				
FINANCIAL SATISFACTION			0.013***	0.005	0.020***	0.008				
TRUST IN LEGAL SYSTEM							0.086***	0.034	0.110***	0.044
Number of observations	23566		23317		18977		23405		23405	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NORTHER EUROPEAN COUNTRIES. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4). EQ. 8 uses another weighting variable: original weight variable was multiplied by a constant for each country, in order to produce an equal weighted N for each survey.

2. Switzerland

Switzerland is an idoneous country to analyse as its culture and institutions are not homogeneous. This small country is like a mosaic of different cultures in the heart of Europe. There are four languages spoken in Switzerland: German, French, Italian, and Romansh. The different languages are strongly linked with the neighbouring states: for the German speaking part Germany, Austria, Liechtenstein, France for the French speaking part in western Switzerland and Italy for the Italian speaking region in the southern part of Switzerland. We

are going to build dummy variables based on the variable in which language the interview was conducted. As only Swiss citizens have been asked, the languages mostly correspond to the four official languages. Only 1.3 percent indicated another language. Based on the theory and the findings in the last subsection we would expect the Romanic parts of Switzerland to have a lower tax morale than the German part. *Table 4* presents the results.

Table 4
Determinants of Tax Morale in Switzerland 1989

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent V.: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>	
a) Demographic Factors								
AGE 30-49	0.317***	0.115	0.257**	0.092	0.253**	0.091	0.250**	0.091
AGE 50-64	0.474***	0.171	0.408***	0.147	0.399***	0.143	0.367**	0.134
AGE 65+	0.814***	0.294	0.747***	0.268	0.740***	0.266	0.728***	0.266
FEMALE	0.338***	0.122	0.356***	0.128	0.355***	0.127	0.269**	0.098
EDUCATION	-0.021	-0.008	-0.018	-0.006	-0.018	-0.007	-0.019	-0.007
b) Marital Status								
MARRIED	-0.010	-0.004	0.030	0.011	0.023	0.008	0.112	0.041
LIVING TOGETHER	-0.357**	-0.129	-0.333**	-0.120	-0.328*	-0.118	-0.310*	-0.114
DIVORCED	-0.120	-0.043	-0.106	-0.038	-0.104	-0.037	0.022	0.008
SEPARATED	-0.209	-0.076	0.037	0.013	0.040	0.014	0.098	0.036
WIDOWED	0.014	0.005	0.032	0.011	0.038	0.014	0.080	0.029
c) Employment Status								
PART TIME EMPLOYED	-0.022	-0.008	0.050	0.018	0.048	0.017	0.017	0.006
SELFEMPLOYED	-0.106	-0.038	-0.123	-0.044	-0.114	-0.041	-0.355	-0.130
UNEMPLOYED	0.254	0.092	0.298	0.107	0.363	0.130	0.389	0.142
AT HOME	-0.132	-0.048	-0.134	-0.048	-0.139	-0.050	-0.128	-0.047
STUDENT	-0.034	-0.012	-0.036	-0.013	-0.029	-0.010	0.114	0.042
RETIRED	0.014	0.005	0.031	0.011	0.026	0.009	-0.194	-0.071
d) Economic Situation								
INCOME							-0.049***	-0.018
e) Religious Variable								
CHURCH ATTENDANCE	0.076***	0.027	0.071***	0.026	0.069***	0.025	0.063***	0.023
f) Culture Variables								
FRENCH	-0.193	-0.070	-0.231*	-0.083	-0.219*	-0.079	-0.111	-0.041
ITALIAN	0.212	0.077	0.211	0.076	0.220	0.079	0.334**	0.122
ROMANSH	0.386	0.140	0.407	0.146	0.412	0.148	0.222	0.081
OTHER LANGUAGE	0.293	0.106	0.369	0.133	0.384	0.138	0.426	0.156
g) Further Variables								
PRIDE			0.072	0.026	0.066	0.024	0.049	0.018
FINANCIAL SATISF.					0.019	0.007	0.036	0.013
Number of observations	1220		1169		1169		927	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, GERMAN SPEAKING. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

Being French rather than German speaking reduces the probability of stating that tax evasion is never justifiable by around 7 percentage points. However, the coefficients are on the border of significance. Italian and Romansh speaking individuals show a tendency to a higher tax morale, but the coefficients are not significant. We find similar results for people who speak another language. However, the marginal effects are quite large (see also the Romansh variable). These results have to be interpreted with caution as we have only a small amount of observations regarding the variables ROMANSH and OTHER LANGUAGE. Looking at the control variables, a higher age leads to a higher tax morale. Compared to the reference group, the share of individuals at the age of 65 and above reporting the highest tax morale is larger by around 26 percentage points. Being female rather than male increases the probability of a person stating that tax evasion is never justified by around 10 percentage points. In all regression equations, the coefficient for church attendance is significant with a positive sign. Higher income does negatively correlate in a statistically significant way with tax morale. The coefficients for the added variables pride and financial satisfaction are not significant.

Data from 1989 have the disadvantage that they do not distinguish between different cantons. Thus, it is not possible to integrate institutional variables in the analysis. This is insofar interesting as Switzerland is also characterised by differences in local autonomy and direct democracy between the cantons. Such a possibility is offered by the World Values Survey in 1996. Thus we are going to control for this specific institution in Switzerland: direct democracy, working with the index developed by Stutzer (1999).

Based on the data set of 1996 we focus on the three main official languages German, French and Italian. Furthermore, instead of using trust in legal system we have integrated trust in government, considering thus the current politico-economic process more closely.

Table 5 presents the results. The different culture variables do not show an equal picture. The variable “French speaking” greatly affects tax morale. The marginal effects indicate that being a French rather than a German speaking taxpayer reduces the probability of stating that tax evasion is never justified by around 16 percentage points. These findings are in line with the ones obtained for Europe. The coefficient for the Italian speaking individuals mostly shows the predicted sign. However, the coefficients are not significant.

Lower tax morale in the French-speaking areas might be explained by the Swiss institutional structure. French-speaking cantons have lower direct democratic rights. Thus, it is not surprising that after including the variable direct democracy the significance and size of the marginal effects of the French speaking variable fall down.

Table 5
Tax Morale in Switzerland 1996

<i>Weighted Ordered Probit</i>	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.
<i>Dependent V.: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		
<i>Independent Variables</i>	1		2		3		4		5	
a) Demographic Factors										
AGE 30-49	0.005	0.002	-0.009	-0.004	-0.015	-0.006	-0.019	-0.008	-0.033	-0.013
AGE 50-64	0.243**	0.096	0.221*	0.088	0.202*	0.080	0.200*	0.080	0.203*	0.081
AGE 65+	0.104	0.041	0.023	0.009	0.045	0.018	0.064	0.026	0.057	0.023
FEMALE	0.205***	0.082	0.161**	0.064	0.154**	0.061	0.157**	0.063	0.196***	0.078
EDUCATION	-0.015	-0.006	-0.039**	-0.016	-0.038**	-0.015	-0.038*	-0.015	-0.011	-0.005
b) Marital Status										
MARRIED	0.195**	0.078	0.205**	0.081	0.201**	0.080	0.199**	0.079	0.253***	0.101
LIVING TOGETHER	-0.108	-0.043	-0.103	-0.041	-0.099	-0.039	-0.105	-0.042	-0.057	-0.023
DIVORCED	0.263*	0.105	0.253*	0.101	0.298*	0.118	0.283*	0.113	0.352**	0.140
SEPARATED	0.209	0.083	0.213	0.085	0.207	0.082	0.208	0.083	0.264	0.105
WIDOWED	-0.152	-0.061	-0.143	-0.057	-0.130	-0.052	-0.135	-0.054	-0.114	-0.045
c) Employment Status										
PART TIME EMPLOYED	0.197**	0.078	0.230**	0.091	0.245**	0.097	0.251**	0.100	0.196**	0.078
SELFEMPLOYED	0.092	0.037	0.071	0.028	0.092	0.037	0.094	0.037	0.118	0.047
UNEMPLOYED	0.030	0.012	0.046	0.018	0.197	0.078	0.221	0.088	-0.015	-0.006
AT HOME	0.310***	0.123	0.325***	0.129	0.371***	0.147	0.372***	0.148	0.326***	0.130
STUDENT	0.026	0.010	-0.042	-0.017	-0.025	-0.099	-0.022	-0.009	-0.076	-0.030
RETIRED	0.679***	0.270	0.708***	0.281	0.676***	0.269	0.663***	0.264	0.733***	0.291
OTHER	0.296	0.118	0.382	0.152	0.345	0.137	0.338	0.134	0.261	0.104
d) Economic Situation										
UPPER CLASS	0.128	0.051	0.064	0.026	-0.084	-0.034	-0.076	-0.030		
UPPER MIDDLE CLASS	-0.097	-0.038	-0.161	-0.064	-0.270	-0.107	-0.270	-0.107		
LOWER MIDDLE CLASS	-0.045	-0.018	-0.089	-0.035	-0.142	-0.056	-0.131	-0.052		
WORKING CLASS	-0.102	-0.040	-0.128	-0.051	-0.169	-0.067	-0.153	-0.061		
INCOME									0.001*	0.001
e) Religious Variable										
CHURCH ATTENDANCE	0.101***	0.040	0.088***	0.035	0.086***	0.034	0.086***	0.034	0.105***	0.042
f) Culture Variables										
FRENCH	-0.429***	-0.170	-0.424***	-0.169	-0.415***	-0.165	-0.263*	-0.104	-0.431***	-0.171
ITALIAN	-0.045	-0.018	-0.059	-0.023	-0.040	-0.016	0.141	0.056	-0.010	-0.004
g) Further Variables										
TRUST IN GOVERNMENT			0.186***	0.074	0.167***	0.066	0.166***	0.066		
FINANCIAL SATISF.					0.052***	0.021	0.053***	0.021		
DIRECT DEMOCRACY							0.078**	0.031		
Number of observations	1081		1044		1034		1034		1136	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, GERMAN SPEAKING. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

Trust in government and the index for direct democratic rights have a significantly positive effect on tax morale. An increase in the index of direct democracy by one point raises the share of persons indicating the highest tax morale by 3.1 percentage points. These results show that the institution “direct democracy” raises individual’s tax morale. The control variables indicate that individuals between 50 and 64 have a higher tax morale than the reference group. Females report a significantly higher tax morale than males. Being female rather than male increases the probability of a person stating that tax evasion is never justified by around 7 percentage points. Contrary to the findings in 1989 married people have a significantly higher tax morale than singles. The share of part-time employees reporting the highest tax morale is by around 9 percentage points than that of full-time employees. In all regression equations, the coefficient for church attendance is significant with a positive sign.

3. Belgium

Gérard (2001) defines Belgium as:

“a hodgepodge resulting from the assembly, through marriage, conquest and treaty, of a series of geographic entities, vassals of the king of France or the German emperor, dotted with cities jealous of their privileges” (p. 3).

In Belgium we can find a transformation from a centralised state to a federation after several constitutional reforms between 1970 and 1993. Interesting for our analysis are the different language communities (Dutch, French, and German) and three regions Flanders, Wallonia and Brussels. The Francophone’s elite ruled Belgium after the independency in 1830. The Flemish movements for cultural autonomy gained importance at the end of the 19th century (van Houten 1999). They obtained the possibility to use Flemish in the justice system (1873), in the administration (1878), education (1883) and the universities (1932) (Gérard 2001).

In the 1950s and 1960s the Flemish movements were very active with the important step of the state reform in 1970 (van Houten 1999). The concepts of Community and Region were introduced in the Constitution (Gérard 2001). One step in building Belgium’s federalism was the introduction of a language boundary in the 60s with the French part in the South, the Flemish part in the North and the bilingual area of Brussels. An important reform which gave subnational institutions a higher degree of autonomy has been done in 1988, transferring many competencies and thus raising the share of subnational public expenditures to over 40%

of the total public expenditures (van Houten 1999). In 1988 it was decided to change the personal income tax into a shared tax, where the amount is predetermined and its allocation to the regions is based on the relative regional revenue of the personal income tax (Gérard 2001). In a ten-year transition process (till 1999) regions received shares of personal and corporate income taxes. However, the rates of the taxes are still set by the federal government and autonomous taxes constitute less than 10% of subnational institutional budgets. One advantage in the income tax system is that regions can put surcharges or discounts on the federal level rates on the personal income tax (van Houten 1999). However, the Regions have not actually made use of this possibility. The Lambermont or Saint-Polycarpe agreements in 2001 indicate that the power of Regions to establish additional taxes or rebates has been broadened. However, regions do not have the possibility to modify the tax base or tax calculations by the federal government or to reduce the progressive graduation of the tax. Regions still operate on the margins (Gérard 2001, p. 36). In general, Gérard states that the

“Belgian federalism is the outcome of an ‘anti-French-speaking bourgeoisie’ social movements” (p. 5).

If regional fiscal autonomy increases, Wallonia will be worse off as economic performance and fiscal capacity are lower compared to Flanders (van Houten 1999). The per-capita GDP is higher in Flemish Regions in 1996 than in Walloon Regions (see Capron 2000). The recent European Values Survey indicates that Francophone inhabitants have a stronger attachment to Europe as the Flemish (Doutrelepoint, Billiet and Vandekeere 2001).

The World Values Survey data from 1990 allows the comparison of the two language regions. We have built the dummy variables Flemish, Walloon (reference group) and German based on territorial information. Furthermore, as Brussels is a bilingual area, we used Brussels as a separate dummy variable. The prediction would be that people influenced by the Northern part of Europe (Flemish and German) have a higher tax morale than Romanic people. The data from Belgium is from 1990. Similar to *Table 1* we use the variable TRUST IN LEGAL SYSTEM instead of TRUST IN GOVERNMENT. The income variable has many missing observations. Thus, instead of income we use a variable where people had to classify themselves into different classes (working class, middle class, upper class). *Table 6* presents the results.

Table 6
Tax Morale in Belgium 1990

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent V.: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>	
a) Demographic Factors								
AGE 30-49	0.098*	0.029	0.103**	0.037	0.104**	0.038	0.085*	0.031
AGE 50-64	0.169***	0.061	0.192***	0.069	0.184***	0.067	0.143**	0.052
AGE 65+	0.404***	0.147	0.410***	0.148	0.403***	0.146	0.386***	0.140
FEMALE	0.139***	0.050	0.136***	0.049	0.078***	0.028	0.073**	0.026
EDUCATION	-0.002	-0.001	-0.002	-0.001	-0.001	-0.000	0.000	0.000
b) Economic Variables								
LOWER MIDDLE CLASS	-0.018	-0.006	-0.010	-0.004	-0.040	-0.015	0.027	0.001
UPPER MIDDLE CLASS	-0.094**	-0.034	-0.090**	-0.033	-0.052**	-0.019	-0.063	-0.023
UPPER CLASS	-0.212***	-0.078	-0.221***	-0.080	-0.208***	-0.076	-0.217***	-0.079
c) Marital Status								
MARRIED	0.209***	0.076	0.205***	0.074	0.211**	0.076	0.168***	0.061
LIVING TOGETHER	-0.010	-0.004	-0.004	-0.001	-0.069	-0.025	-0.118	-0.043
DIVORCED	0.265***	0.096	0.255***	0.092	0.253***	0.092	0.221**	0.080
SEPARATED	-0.092	-0.033	0.090	0.033	0.215	0.078	0.266*	0.097
WIDOWED	-0.032	-0.012	-0.042	-0.015	-0.047	-0.002	-0.048	-0.017
d) Employment Status								
PART TIME EMPLOYED	-0.060	-0.022	-0.061	-0.022	-0.033	-0.012	0.063	0.022
SELFEMPLOYED	-0.198**	-0.072	-0.189**	-0.068	-0.161**	-0.059	-0.153*	-0.056
UNEMPLOYED	-0.107*	-0.039	-0.093	-0.034	-0.150	-0.054	-0.111	-0.040
AT HOME	0.197***	0.072	0.207***	0.075	0.271***	0.098	0.293***	0.106
STUDENT	0.049	0.018	0.063	0.023	-0.155	0.006	-0.045	-0.016
RETIRED	0.135**	0.049	0.152**	0.055	0.163**	0.059	0.180***	0.066
OTHER	0.235**	0.085	0.277***	0.100	0.180	0.065	0.181	0.066
e) Religious Variable								
CHURCH ATTENDANCE	0.036***	0.013	0.032***	0.012	0.030***	0.011	0.029***	0.011
f) Culture Variables								
FLEMISH	0.055	0.020	0.058*	0.021	0.090**	0.011	0.070*	0.026
BRUSSELS	0.073	0.027	0.055	0.020	0.067	0.024	0.098	0.036
GERMAN	0.623	0.229	0.614	0.221	0.568	0.206	0.096	0.209
g) Further Variables								
TRUST IN LEGAL SYSTEM			0.082***	0.030	0.057***	0.021	0.055***	0.020
PRIDE					0.198***	0.072	0.186***	0.067
FINANCIAL SATISFACTION							0.035***	0.013
Number of observations	2627		2603		2374		2298	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, WALLOON. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

We find a tendency that Flemish people have a higher tax morale compared to the Francophone inhabitants. Being Flemish rather than Walloon increases the probability of stating that tax evasion is never justifiable by around 2 percentage points. The coefficient of the German speaking variable has the predicted sign, but is not significant throughout the different estimations. Not surprisingly, the coefficient of the bilingual variable Brussels is not significant, but the marginal effects show a tendency to a higher tax morale compared to the reference group. Thus, the results indicate that in Belgium there is a small culture difference in tax morale.

The results of the other independent variables are similar to the findings in Europe. Compared to the reference group, older people have a higher tax morale. The proportion of persons at the age of 65+ who report that tax evasion is never justifiable is around 14 percentage points higher than for the reference age group (16-29). Females report a higher tax morale than males (between 2.6 and 4 percentage points). Compared to people who define themselves as working class, people from the lower middle class, the upper middle class, and the upper class report a lower tax morale. We can see that the negative marginal effect increases with an increase in the class level. Married and divorced people are between 6.1 and 7.6 percentage points, respectively between 8.0 and 9.6 percentage points more likely to argue that tax evasion is never justifiable. The proportions of self-employers reporting the highest tax morale score are between 5.6 and 7.2 percentage points lower than for full-time employees. On the other hand, people who are at home or retired report a higher tax morale than the reference group. Similar to the data from Europe, church attendance, trust in the legal system, and pride have a positive effect on tax morale.

In the next subsection, we are going a step further in our analysis. We look at Spain, where we also find culture variety but with stronger separatist tendencies.

4. Spain

Moreno (2001) states that Spain is lacking of a single state identity. We have now the opportunity to analyse if we find a difference between the Spanish ‘historical nationalities’. During the era of Franco (1939-1975) Spain had a strong state centralism. After that we find a movement from dictatorship to a certain federalisation, with a pre-autonomies process. Based on the Spanish Constitution of 1978, Spain is divided into 17 Autonomous Communities, 53 provincial governments and 8.098 municipalities. Molero (2001) defines this structure as

“cooperative federalism” (p. 506). Three years after the Constitution in 1978, regional governments managed 2.9 percent of the total public expenditures. Twenty years later, an increase in the local autonomy can be found. The regions managed 24.3 percent of the total expenditure. However, local autonomy has only increased from 9.7 to 12.9 percent (Toboso 2001). Furthermore, in the years just after 1978, Communities could not levy their own taxes and thus were financially dependent on transfers from the central government. During the late 80s some communities established new taxes, which central government did not always accept (see Almendral 2002). The 1988 Law on the Financing of the Autonomous Communities defined the structure of revenues. Until 1996 the communities received 15 percent of the total tax yields of the central personal income tax, a contribution considered as a grant (Toboso 2001). The fiscal reform between 1996 and 2001 was intended to bring peace with the central government which before had not been willing to give up the taxation sovereignty. However, with the Autonomous Regions Finance Act approved in 1980, the central government has the power to limit regions’ autonomy, e.g., the creation of new taxes, the prohibition of double taxation (Almendral 2002).

We are going to use dummy variables for the Basque Country, Navarre, Catalonia, and Galicia, regions with own cultural identity. Moreno (2001) argues that Franco’s dictatorship provided the atmosphere for Spanish regionalism, autonomism and nationalism, despite the separatism with its longer tradition.

The Basque Country is a self-governing community that has a financial system with the possibility to regulate and collect their own taxes. A certain amount of the collected revenue has to be transferred to the central government (fixed). The movement of financial autonomy has a certain tradition in the Basque Country, similar to Navarre. The first written law resolution to manage some central taxes date from 1878 and 1841 (Toboso 2001). Moreno (2001) reports the results from a periodical survey conducted by the newspaper *País* which indicate that the Basques had a stronger feeling of an own identity compared to other regions. 23 percent of the Basques declared themselves to feel “only Basque”.

Despite the strong sense of identity in Catalonia, separatism is weaker as in the Basque Country. In Catalonia, for example, only 12.5 of the individuals defined themselves as only Catalan (Moreno et al. 1997). The language Catalan is understood by the majority of the population (see Keating 1999). Galicia is also a “historical region” with an own language (Galego) and a strong sense of identity. Galicia has a similar autonomy status as Catalonia based on the *Article 151* of the Spanish Constitution, which gives this region a high degree of self-ruling (see Rodriguez-Pose 2000). Keating (1999) points out that in Galicia the

movement towards more autonomy is less strong than in Catalonia. Villadangos (1999) stresses that there is a consensus to consider Catalonia, the Basque Country, and Galicia as own nationalities. However, another distinction which we somehow can also find in *Table A3* (see Appendix) is to speak of two classes of nationalities:

“One first class or ‘business class’ occupied by Catalonia, Basque Country and Galicia. And, a tourist class, whose occupants would be Andalusian, Valensian, Canarian and Aragon’s people”(p. 10)

There is also Navarre, a so-called *Charter* region similar to the Basque Country with the highest financial autonomy among Spanish regions (see Rodriguez-Pose 2000). This can be seen in *Table A3* which indicates the level of financial autonomy measured as the size of Spanish region’s budget in per capita terms. Molero (2001) argues that regions based on the *Article 143* have low levels of responsibilities and a shorter historical background than regions based on the *Article 151*. The central government in this regions still retains the main taxes.

Table 7 presents the results of the multivariate analysis. We can see that beside Navarre all culture variables significantly influence tax morale. The marginal effects are very large. People in the Basque Country and in Catalonia are between 19.5 and 25.5, respectively 8.4 and 15.7 percentage points less likely to argue that tax evasion is never justifiable compared to the other Spanish regions. Contrary to this findings we observe that people in Galicia report a between 13.6 and 14.8 percentage points higher probability of stating that tax evasion is never justifiable compared to the reference group. The coefficient of Navarre is not statistically significant and not robust regarding the variation of variables (change of the sign in equation 5). The results are in line with the argument that stronger separatist tendencies have a negative effect on tax morale. Such a difference between the regions might have a cultural background.

The findings regarding the control variables are similar to the results found in Europe and in Belgium. A higher age tends to increase tax morale. Married people have a higher tax morale than singles. Self-employees have a significantly lower probability of reaching the highest tax morale compared to fulltime employees. People from the upper class and the upper middle class report around 10, respectively 5 percentage points lower probability of stating that tax evasion is not justifiable. Trust in the legal system, pride, and financial satisfaction have a significant positive effect on tax morale. Contrary to Belgium, being female rather than male has not a significant effect on tax morale. But on the other hand, a

higher education leads to a significantly higher tax morale. A higher income has a significantly negative effect on tax morale.

Table 7
Tax Morale in Spain 1990

<i>Weighted Ordered Probit</i>	<i>Coeff.</i>	<i>Marg.</i>								
<i>Dependent V.: Tax Morale</i>	<i>Effect</i>									
<i>Independent Variables</i>	1		2		3		4		5	
a) Demographic Factors										
AGE 30-49	0.119*	0.046	0.127*	0.049	0.118*	0.046	0.113*	0.044	0.107	0.042
AGE 50-64	0.189***	0.073	0.180**	0.070	0.132*	0.051	0.122*	0.047	0.105	0.041
AGE 65+	0.380***	0.148	0.343***	0.133	0.295***	0.114	0.286***	0.111	0.266***	0.104
FEMALE	0.061	0.024	0.063	0.025	0.062	0.024	0.075	0.029	0.061	0.024
EDUCATION	0.003***	0.001	0.003***	0.001	0.003***	0.001	0.003***	0.001	0.002***	0.001
b) Marital Status										
MARRIED	0.153***	0.059	0.128**	0.050	0.109*	0.042	0.117*	0.046	0.137**	0.053
LIVING TOGETHER	-0.221	-0.086	-0.210	-0.082	-0.236	-0.092	-0.222	-0.086	-0.066	-0.026
DIVORCED	-0.098	-0.038	-0.154	-0.060	-0.170	-0.066	-0.177	-0.069	-0.071	-0.028
SEPARATED	-0.214	-0.083	-0.233	-0.091	-0.254	-0.098	-0.250	-0.097	-0.215	-0.084
WIDOWED	0.122	0.047	0.099	0.038	0.096	0.037	0.116	0.045	0.067	0.026
c) Employment Status										
PART TIME EMPLOYED	-0.201**	-0.075	-0.211**	-0.082	-0.138	-0.053	-0.138	-0.053	-0.168	-0.065
SELFEMPLOYED	-0.153**	-0.060	-0.167**	-0.065	-0.164*	-0.063	-0.162**	-0.063	-0.180**	-0.070
UNEMPLOYED	0.055	0.022	0.017	0.007	0.009	0.003	0.047	0.018	-0.031	-0.012
AT HOME	0.180***	0.070	0.149**	0.058	0.138**	0.054	0.132**	0.051	0.053	0.021
STUDENT	-0.124	-0.048	-0.140	-0.054	-0.141	-0.055	-0.176*	-0.068	-0.122	-0.048
RETIRED	0.119*	0.046	0.111	0.043	0.109	0.042	0.120*	0.046	0.060	0.023
OTHER	0.735	0.285	0.678	0.264	0.683	0.265	0.685	0.266	0.606	0.234
d) Economic Situation										
UPPER CLASS	-0.274***	-0.107	-0.259***	-0.101	-0.269***	-0.104	-0.304***	-0.118		
UPPER MIDDLE CLASS	-0.154***	-0.060	-0.129***	-0.050	-0.125**	-0.048	-0.156***	-0.061		
LOWER MIDDLE CLASS	0.004	-0.001	0.002	0.001	-0.010	-0.004	-0.024	-0.009		
INCOME									-0.074***	-0.029
e) Religious Variable										
CHURCH ATTENDANCE	0.022**	0.008	0.017*	0.007	0.010	0.004	0.008	0.003	0.014	0.006
f) Culture Variables										
BASQUE COUNTRY	-0.657***	-0.255	-0.708***	-0.275	-0.560***	-0.217	-0.561***	-0.218	-0.501***	-0.195
CATALONIA	-0.405***	-0.157	-0.378***	-0.147	-0.321***	-0.124	-0.328***	-0.127	-0.216***	-0.084
GALICIA	0.349***	0.136	0.332***	0.129	0.362***	0.141	0.367***	0.143	0.382***	0.148
NAVARRRE	0.133	0.052	0.115	0.045	0.118	0.046	0.095	0.037	-0.013	-0.005
g) Further Variables										
TRUST IN LEGAL SYSTEM			0.167***	0.065	0.137***	0.053	0.127***	0.049	0.108***	0.042
PRIDE					0.173***	0.067	0.165***	0.064	0.171***	0.066
FINANCIAL SATISF.							0.028***	0.011	0.029***	0.011
Number of observations	3745		3697		3581		3520		3149	
Prob(LM-statistic)	0		0		0		0		0	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, OTHER SPANISH REGIONS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

The World Values Survey offers the possibility to analyse cross-country studies in different years for Spain. We are going to proceed in a similar way with the data from 1995 to check the robustness of the findings from 1990. Molero (2001) points out that Spain's process from a centralised to a decentralised state takes time and thus is a slow process still unfinished. Thus, it is interesting to analyse tax morale in different time points during this transformation process. *Table 8* presents the results. Similar to 1990 there is a tendency that people from the Basque Country report a lower probability of stating that tax evasion is never justifiable compared to the reference group. However, the coefficient loses much of its significance. Contrary to 1990 Galicia reports a lower and Catalonia a higher tax morale than the reference group. However, the coefficients are not significant. Navarre offers a clearer picture in 1995. The marginal effects are very large. Being an inhabitant of Navarre reduces the probability of stating that tax evasion is never justifiable by around 30 percentage points compared to the reference group. It is interesting to notice that the regions with the highest autonomy (*Charter regions*) have the lowest tax morale. Again, trust in the legal system has a positive influence on tax morale. The World Values Survey 1995-1997 offers the possibility to integrate a further variable: the attitude regarding democracy². The coefficients indicate that an increase in the pro democracy attitude score by one unit raises the share of persons indicating the highest tax morale by 5.5 percentage points.

For the years 1990 and 1995 we have also estimated equations with a regional autonomy variable based on *Table A3* (Appendix). The results indicated that region autonomy has a positive effect on tax morale. However, in both years the coefficient was not significant and the marginal effects were lower than 1 percentage point.

In the 90s Spain has made various reforms which increased regions' autonomy. Based on the Law 14/1996, regional governments' share in the personal income tax was defined as ceded, creating a tendency of decreasing the degree of financial dependency of regional governments (see Toboso 2001). However, Almendral (2002) criticises that Communities have failed to use the power and room to create new fiscal benefits and an own taxation policy and still rely on transfers from the central government representing around 60% of their total revenues. In general, public expenditure patterns and inter-governmental transfers shift from centralisation to the so-called Autonomous Communities since the 1980s (see Heywood 2000).

² The question was: Would you say it is a very good, fairly good, fairly bad or very bad way of governing this country: having a democratic political system (scale 1 to 4).

Table 8
Tax Morale in Spain 1995

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<i>Dependent V.: Tax Morale</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>		<i>Effect</i>
<i>Independent Variables</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>	
<i>a) Demographic Variables</i>	included		included		included		included	
<i>b) Economic Situation</i>								
UPPER CLASS	included		included		included			
UPPER MIDDLE CLASS	included		included		included			
LOWER MIDDLE CLASS	included		included		included			
WORKING CLASS	included		included		included			
INCOME							included	
<i>c) Marital Status</i>	included		included		included		included	
<i>d) Employment Status</i>	included		included		included		included	
<i>e) Religious Variable</i>	included		included		included		included	
<i>f) Culture Variables</i>								
BASQUE COUNTRY	-0.387**	-0.133	-0.371*	-0.127	-0.263	-0.090	-0.333*	-0.114
CATALONIA	0.102	0.035	0.090	0.031	0.144	0.049	0.139	0.048
GALICIA	-0.015	-0.005	-0.095	-0.033	-0.098	-0.034	-0.089	-0.030
NAVARRRE	-0.911**	-0.314	-0.953***	-0.327	-0.887**	-0.303	-0.839**	-0.287
<i>g) further Variables</i>								
TRUST IN LEGAL SYSTEM			0.145***	0.050	0.131***	0.048	0.140***	0.048
PRO DEMOCRACY					0.181***	0.055	0.160**	0.055
Number of observations	1111		1075		1033		1033	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, OTHER SPANISH REGIONS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

It should be noticed that the number of observations in the data from 1995 was much lower than in 1990. Thus, comparisons between both data sets should be interpreted with caution. It might be interesting to compare the results found in 1995 with a higher observation quantity. The World Values Survey 1995-1997 has made separate surveys in the following regions: Basque Country, Andalusia, Galicia and Valencia. As we can see from *Table A3*, all these Communities are highly autonomous. Thus, we have put the surveys together and built a

dummy variable for each region. *Table 9* presents the results. The Regions Andalusia, Galicia and Valencia have a significantly higher tax morale than the Basque Country. However, the coefficient of Valencia is not so robust and the marginal effects lower than in other regions. Similar to the findings before, trust in government and a pro democracy attitude increase tax morale.

To check the sensitivity of results we have done estimations in which we changed the weighting variable in the same way as in the European data set. The original weighting variable was multiplied by a constant for each country to get an equal number of weighted observations. *Table A4* (see Appendix) presents the results. As we can see the estimations are robust regarding the weighting variable. Generally, the results indicate the tendency that the Basque Country has a lower tax morale than other regions. On the one hand this result surprises insofar as the Basque Country has more autonomy than other regions. However, on the other hand we find in the Basque Country stronger separatist tendencies than in other regions. The stability of this result indicates that cultural identity might play an important role. Contrary to the Basque Country, the findings in the other “historical nations” are not so clear. We find differences between 1990 and 1995 as, e.g., in Catalonia. As the 90s in Spain have been characterised by many changes on the regional level, changes in tax morale might be influenced by institutional changes.

Table 9
Tax Morale in Different Spanish Regions 1995^a

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>
	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>	
<i>a) Demographic Variables</i>	included		included		included		included	
<i>b) Economic Variable</i>								
UPPER CLASS	included		included		included			
UPPER MIDDLE CLASS	included		included		included			
LOWER MIDDLE CLASS	included		included		included			
WORKING CLASS	included		included		included			
INCOME							included	
<i>c) Marital Status</i>	included		included		included		included	
<i>d) Employment Status</i>	included		included		included		included	
<i>e) Religious Variable</i>	included		included		included		included	
<i>f) Culture Variables</i>								
ANDALUSIA	0.859***	0.330	0.744***	0.286	0.758***	0.293	0.871***	0.335
GALICIA	0.199***	0.076	0.165***	0.064	0.170***	0.065	0.210***	0.081
VALENCIA	0.117**	0.045	0.065	0.025	0.072	0.028	0.112	0.043
<i>g) Further Variables</i>								
TRUST IN GOVERNMENT			0.154***	0.0592	0.152***	0.059		
PRO DEMOCRACY					0.104***	0.040		
Number of observations	5252		5100		4865		5251	
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: ^a except Andalusia where the survey has been conducted in 1996. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, BASQUE COUNTRY. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

III. CONCLUSIONS

The intention of the paper was to check if culture differences have an impact on tax morale. The paper offers a novel framework in the tax compliance literature analysing 18 European countries in an empirical analysis using multiple regressions. Using the World Values Survey data 1990-1993, we find a higher tax morale in Northern European countries than in Romanic countries. However, the marginal effects were not so large. Furthermore, the paper evaluates cross-regional differences in Switzerland, Belgium and Spain. The results indicate that culture differences in Switzerland and Belgium are somehow correlated with differences in tax morale. But the effects of cultural differences are quite small. In Switzerland French speaking people had a lower tax morale than German speaking individuals. This effect decreased after introducing the institution direct democracy into the estimation. On the other hand, the findings regarding the Italian speaking persons are mixed. The coefficients were rarely significant and data from 1990 and 1996 showed different coefficient signs. The largest differences between regions have been found in Spain. In 1990 the Basque Country and Catalonia had a lower tax morale than the reference group, contrary to Galicia that indicated a higher tax morale. In 1995 we find a different picture. There is a tendency that inhabitants in the Basque Country and in Navarre have a lower tax morale than people from the reference group. On the other hand, the coefficients from Galicia and Catalonia were not statistically significant, but showing a negative, respectively positive sign. Such differences between 1990 and 1995 might be an indication of changes and expectations about regional autonomy movements in Spain. In times of rapid changes and adaptations culture also evolves faster than frequently assumed. More information has been created adding surveys from Andalusia, the Basque Country, Galicia, and Valencia. The findings indicate that Andalusia, Galicia, and Valencia, compared to the Basque Country, have the tendency to a higher tax morale, with the strongest effects in the first two regions. In general, the findings in Spain indicate that the Basque Country with a certain continuity has the lowest tax morale. This is not surprising as we find the strongest separatist tendency in this region. Tax morale might also be a signal to express the dissatisfaction with the actual situation. It might signalise how taxpayers evaluate local and national government's intention to consider their preferences.

In general, the results indicate that culture defined as the "shared values and a rule system, as well as the more tangible elements of social interaction in a community" (Kasper and Streit 1999), might play a non negligible role in the formation and the development of tax morale. We find a certain tendency for individuals influenced by the Romanic culture to have

a lower tax morale than Northern European inhabitants. However, the findings in the different countries indicate that the culture effect should not be overestimated.

APPENDIX

Table A1
Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CHURCH ATTENDANCE	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never (7= more than once a week to 1=never, practically never).
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.</p> <p style="text-align: center;">Switzerland</p> <ol style="list-style-type: none"> 1. Less than 20'000 Swiss Francs 2. 20,000-26,999 3. 27,000-31,999 4. 32,000-37,999 5. 38,000-44,999 6. 45,000-51,999 7. 52,000-59,999 8. 60,000-69,999 9. 70,000-89,999 10. More than 90,000 <p style="text-align: center;">Spain 1995/1996</p> <ol style="list-style-type: none"> 1. 45.000 or less ptas 2. 45-75.000 ptas 3. 75-100.000 ptas 4. 100-150.000 ptas 5. 150-200.000 6. 200-275.000 7. 275-350.000 8. 350-450.000 9. 450-1.000.000 10. More than 1.000.000 <p style="text-align: center;">Spain 1990</p>

	<ol style="list-style-type: none"> 1. Under 40,000 Pesetas per month 2. 40,000-49,999 Pesetas 3. 50,000-69,999 Pesetas 4. 70,000-89,999 Pesetas 5. 90,000-119,999 Pesetas 6. 120,000-149,999 Pesetas 7. 150,000-199,999 Pesetas 8. 200,000-249,999 Pesetas 9. 250,000-299,999 Pesetas 10. 300,000 Pesetas and over <p>Belgium</p> <ol style="list-style-type: none"> 1. 25,000-29,999 Belgian francs per year 2. 30,000-34,999 francs 3. 35,000-39,999 francs 4. 40,000-49,999 francs 5. 50,000-59,999 francs 6. 60,000-69,999 francs 7. 70,000-79,999 francs 8. 80,000-99,999 francs 9. 100,000-119,999 francs 10. 120,000 francs per year and over
EDUCATION	<p>DATA FROM 1995/1996:</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree <p>Switzerland 1988-1990/1996</p> <ol style="list-style-type: none"> 1. Never went to school 2. Incomplete primary school 3. Primary school (up to 12 years of age) 4. Apprenticeship 5. Lower secondary school (up to 16 years of age) 6. Secondary school without diploma (16-19 years) 7. Technical school 8. Secondary school with diploma 9. University or Federal Polytechnical School without degree 10. University or Federal Polytechnical with degree
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)
PRIDE	<p>How proud are you to be ...? (substitute your own nationality for ...)</p> <ol style="list-style-type: none"> 1. Not at all proud 2. Not very proud 3. Quite proud 4. very proud

TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
TRUST IN LEGAL SYSTEM	Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
PRO DEMOCRACY	Would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? Having a democratic political system (4=very good, 1=very bad)

Source: Inglehart et al. (2000).

Table A2
Direct Democratic Rights in Swiss Cantons

<i>Canton</i>	<i>Index for constitutional initiative</i>	<i>Index for Legislative Initiative</i>	<i>Index for Legislative Referendum</i>	<i>Index for financial referendum</i>	<i>Composite Index for Direct Democratic Rights</i>
Aargau	5.67	5.67	6.00	4.50	5.46
Appenzell I. Rh.	6.00	6.00	6.00	3.00	5.25
Appenzell a. Rh.	6.00	6.00	6.00	4.00	5.50
Bern	2.67	2.67	3.67	5.00	3.50
Basel-Landschaft	6.00	6.00	6.00	4.75	5.69
Basel-Stadt	4.67	4.67	4.00	4.25	4.40
Fribourg	2.67	2.67	2.33	2.00	2.42
Genève	2.00	2.00	2.00	1.00	1.75
Glarus	6.00	6.00	6.00	4.00	5.50
Graubünden	4.00	5.00	6.00	4.00	4.75
Jura	4.67	4.67	3.00	2.50	3.71
Luzern	4.67	5.33	3.67	4.25	4.48
Neuchâtel	2.67	2.67	1.67	1.50	2.13
Nidwalden	2.67	6.00	6.00	5.00	4.92
Obwalden	5.33	6.00	6.00	5.00	5.58
Sankt Gallen	3.33	4.00	3.00	3.25	3.40
Schaffhausen	5.33	5.33	5.17	4.50	5.08
Solothurn	5.33	5.33	6.00	5.00	5.42
Schwyz	5.33	5.33	4.67	4.38	4.93
Thurgau	3.67	3.67	4.33	4.50	4.04
Ticino	1.33	2.67	1.67	2.75	2.10
Uri	5.67	5.67	5.33	5.00	5.42
Vaud	2.33	2.33	2.00	3.00	2.42
Valais	3.00	3.67	6.00	1.00	3.42
Zug	5.00	5.00	3.67	4.00	4.42
Zürich	3.33	3.33	6.00	4.00	4.17

Source: Frey and Stutzer (2000, p. 937).

Table A3

Degree of Fiscal Autonomy (Regional budgets in relation to the population, in thousands of Spanish Pesetas per capita)

<i>REGIONS</i>	<i>1990</i>	<i>1994</i>
Autonomy based on		
<i>ART. 151</i>		
<i>Andalusia</i>	<i>175.8</i>	<i>255.3</i>
Canary Is.	130.2	187.5
<i>Catalonia</i>	<i>169.9</i>	<i>256.8</i>
<i>Galicia</i>	<i>127.7</i>	<i>267.3</i>
<i>C. Valenciana</i>	<i>145.0</i>	<i>218.1</i>
<i>CHARTER REGIONS</i>		
<i>Basque Country</i>	<i>203.1</i>	<i>306.3</i>
<i>Navarre</i>	<i>240.0</i>	<i>440.9</i>
<i>ART. 143</i>		
Aragon	49.5	143.5
Asturias	60.6	92.6
Balearic Is.	35.4	62.3
Cantabria	94.7	90.1
Castile-La Mancha	75.7	166.4
Castile and Leon	58.9	125.4
Extremadura	80.4	171.4
Rioja	88.7	102.5
Madrid	50.4	67.3
Murcia	59.8	74.4

Source: Rodriguez-Pose (2000, p. 103).

Table A4
Tax Morale in Different Spanish Regions (Sensitivity Analysis)

<i>weighted ordered probit</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>	<i>Coeff.</i>	<i>Marg. Effect</i>
	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>	
a) Demographic Variables	included		included		included		included	
b) Economic Variable								
UPPER CLASS	included		included		included			
UPPER MIDDLE CLASS	included		included		included			
LOWER MIDDLE CLASS	included		included		included			
WORKING CLASS	included		included		included			
INCOME							included	
c) Marital Status	included		included		included		included	
d) Employment Status	included		included		included		included	
e) Religious Variable	included		included		included		included	
f) Culture Variables								
ANDALUSIA	0.873***	0.339	0.756***	0.295	0.768***	0.300	0.870***	0.338
GALICIA	0.191***	0.074	0.158***	0.062	0.160	0.063	0.181***	0.071
VALENCIA	0.127**	0.050	0.072	0.028	0.075***	0.030	0.105**	0.041
g) further Variables								
TRUST IN GOVERNMENT			0.143***	0.0559	0.141***	0.055		
PRO DEMOCRACY					0.097***	0.038		
Prob(LM-statistic)	0.000		0.000		0.000		0.000	

Notes: ^a except Andalusia where the survey has been conducted in 1996. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, BASQUE COUNTRY. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (4).

REFERENCES

- Almendral, V. R. (2002). Taxes, Transfers and Spending in Spain: The Regions and the Centre Seek the Right Balance, *Federations*, Vol.2, Nr. 2.
- Capron, H. (2000). The Sources of Belgian Prosperity, in: H. Capron and W. Meeusen (eds.), *The National Innovation System of Belgium*. Heidelberg/New York: Physica Verlag: 21-41.
- Doutrelepont, R., J. Billiet and M. Vandekeere (2001). Profils identitaires en Belgique, in: B. Bawin-Legros, L. Voyé, K. Dobbelaere and M. Elchardus (eds.), *Belge toujours. Fidélité, stabilité, tolerance. Les valeurs des Belges en l'an 2000*. Bruxelles : De Boeck : 213-256.
- Frey, B. S. and A. Stutzer (2000). Happiness, Economy and Institutions, *Economic Journal*. 110: 918-938.
- Frey, B. S. and H. Weck-Hannemann (1984). The Hidden Economy as an 'Unobserved' Variable, *European Economic Review*. 26: 33-53.
- Gérard, M. (2001). Fiscal Federalism in Belgium, Paper presented at the Conference on Fiscal Imbalance, Québec City, September 13-14.
- Heywood, P. (2000). Spanish Regionalism, a Case Study, Working Documents in the Study of European Governance, Nr. 2, October.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Kasper, W. and M. E. Streit (1999). *Institutional Economics. Social Order and Public Policy*. Cheltenham, UK: Edward Elgar.
- Keating, M. (1999). Rethinking the Region. Culture, Institutions and Economic Development in Catalonia and Galicia, paper presented at the ECPR Workshop, Mannheim, March.
- Kennedy, P. (1998). *A Guide to Econometrics*. Oxford: Basil Blackwell.
- Kirchgässner, G. (1999). Schattenwirtschaft und Moral: Anmerkungen aus ökonomischer Perspektive, in: S. Lamnek and J. Luedtke (Hrsg.), *Der Sozialstaat zwischen "Markt" und "Hedonismus"?*. Opladen: Westdeutscher Verlag: 425-445.
- Molero, J.-C. (2001). Analysis of the Decentralization of Public Spending in Spain, *Public Finance and Management*. 1: 500-556.
- Moreno, L. (2001). Divided Societies, Electoral Polarisation and the Basque Country, *Unidad de Políticas Comparadas (CSIC)*, Working Paper 01-07.
- Moreno, L., A. Arriba and A. Serrano (1997). Multiple Identities in Decentralised Spain: The Case of Catalonia, Working Paper Nr. 06, Instituto de Estudios Sociales Avanzados (CSIC), Madrid.
- Rodriguez-Pose, A. (2000). Economic Convergence and Regional Development Strategies in Spain: The Case of Galicia and Navarre, *EIBPapers*. 5: 89-115.
- Stutzer, A. (1999). Demokratieindizes für die Kantone der Schweiz. Working Paper No. 23. Institute for Empirical Research in Economics, University of Zurich.

- Toboso, F. (2001). What Degree of Financial Autonomy and Tax Responsibility Do Regional Governments Have in Spain Since Democratic Transition in 1978, Working Paper, University of Valencia.
- Torgler, B. (2002). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.
- Torgler, B. (2003a). Does Culture Matter? Tax Morale in an East-West-German Comparison, forthcoming in: *FinanzArchiv*.
- Torgler, B. (2003b). Tax Morale, Rule-Governed Behaviour and Trust, forthcoming in: *Constitutional Political Economy*.
- Torgler, B. (2003c). Tax Morale in Transition Countries, forthcoming in: *Post-Communist Economies*.
- Torgler, B. (2003d). Tax Morale in Latin America, WWZ-Discussion Paper 03/03, Basel: WWZ.
- Torgler, B. (2003e). Tax Morale in Asian Countries, WWZ-Discussion Paper 03/04, Basel: WWZ
- Van Houten, P. (1999). The Politics of Fiscal Autonomy Demands. Regional Assertiveness and Intergovernmental Financial Relations in Belgium and Germany, paper presented at the CASPIC MacArthur Scholars' Conference, May.
- Villadangos, E. S. (1999). The Coexistence between one State and Several Nationalities and Regions. The Spanish Case, paper presented at the ECPR Workshop, Regionalism, 26-31 March.
- Weck, H. (1983). *Schattenwirtschaft: Eine Möglichkeit zur Einschränkung der öffentlichen Verwaltung?* Eine ökonomische Analyse. Finanzwissenschaftliche Schriften 22. Bern: Lang.
- Weck, H., W. W. Pommerehne and B. S. Frey (1984). *Schattenwirtschaft*. München: Franz Vahlen.

CHAPTER XVI

EQUITY AND TAX COMPLIANCE:

EXPERIMENTAL EVIDENCE*

ABSTRACT

Tax morale and tax compliance seem to be quite a complex phenomenon. Our experiment does not focus on traditional topics as the audit rate or the audit probability but on exchange equity. We used event history models to analyse temporal dynamics of processes. The effect of exchange inequity is not so clear. The tendency is that (negative) positive actions are intended to (reduce) increase taxpayers' commitment to tax-payments.

JEL classification: H260, H410, C900, D630

Keywords: tax morale, tax compliance, tax evasion, experiments, equity

* Revised version of the paper: Benno Torgler (2002). Vertical and Exchange Equity in a Tax Morale Experiment, WWZ-Discussion Paper 02/02, Basel: WWZ.

I. INTRODUCTION

The tax compliance experiment in this chapter intends to replicate the structure of a voluntary income reporting. Subjects receive income and pay taxes on the reported income. The tax administration is simulated by defining a probability of audit and tax penalty on tax evasion. The design used in this experiment tries to operationalise the important variables with real-world values to reduce artificiality. Early works in tax compliance did not pay enough attention to this point. For example, many experiments have used much higher audit probability and more severe penalties than in the real world.

Many experiments have focussed on the effect of deterrence factors as, e.g., fine rate, audit rate. This process helped to analyse the change in tax compliance as a response to different deterrence policies. However, experiments mostly report a higher level of income reporting than the expected utility model would predict (see Alm 1998). Thus, this experiment has the motivation to take a look beyond deterrence factors and thus to check the relevance of alternative variables, putting weight on moral and social dynamics. Section II shows the relevance of equity and its application to the tax compliance literature. Section III presents the experimental design and Section IV the data evaluation and the results. The article concludes with some final remarks.

II. EQUITY

Social psychology research suggests that a lack of equity in an exchange relationship creates a sense of distress, especially for the victim (see Walster, Walster and Berscheid 1978). Many researchers have stressed the importance of equity considerations (see Tyler and Smith 1998, Spicer and Lundstedt 1976, Bordignon 1993, Alm, McClelland and Schulze 1992, Falkinger 1995, for a survey see Torgler 2001, 2002). In order to analyse the effect of an inefficient state, Mackscheidt and Güth (1985) propose to introduce an efficiency parameter e . The amount e of the tax revenues which is utilised for the transfer payments can be interpreted as an indicator of the state's efficiency. Thus, the hypothesis that state's inefficiency leads to a reduction of tax morale can be tested. As we are going to see in the experimental design, we integrate this aspect in the experiment by combining the tax payment process with a sort of public good game, varying the transfer amount obtained from the government.

Generally, Dawes and Thaler (1988) argue:

“There is a big territory between universal free riding and universal contributing at the optimal rate. To understand the problems presented by public goods and other dilemmas it is important to begin to explore some issues that are normally ignored in economics. For example, what factors determine the rate of cooperation” (p. 196)

III. EXPERIMENTAL DESIGN

The subjects used in our laboratory experiment are volunteers drawn from an undergraduate class in economics at the University of Basel¹. All students participated for the first time in an experiment. The experiment lasted about an hour, had 12 rounds and subjects earned between 15 SFr. and 50 SFr, depending on the amount of money they accumulated at the end of the experiment. It was not allowed to communicate with one another. We did not use tokens as currency but fictive SFr².

Our attempt was to endow income distribution not exogenously by the experimenter but endogenously. In a test, participants were confronted with numerical series following certain numerical patterns. Dependent on the results, the students were divided into two income categories (20'000 Swiss Francs or 40'000 Swiss Francs). Thus, income distribution is based on individual's test results. Such a procedure is important in order to make participants feel entitled to their income. Otherwise the seriousness of tax declarations can be criticised (see, e.g., Hoffman and Spitzer 1985). Therefore, it is important that participants earn income before starting with the income declaration. For both income groups the tax rate was of 20%.

The experiment implemented treatments in which public good is provided. To analyse the recognition of government services, consumers' surplus derived from government provision of the public good was changed by varying the group's surplus multiplier (0, 1, 1.5 and 2). The resulting amount was then redistributed in equal shares to the members of the

¹ It is debated whether among economists there are more free riders than among other graduate students. Frey and Meier (2000) offer empirical evidence against the belief that professional economists are in general more selfish than other persons. Isaac, McCue and Plott (1985) did an experiment with sociology students and did not find a substantially different result than with other subject pools, including economists. Furthermore, we do not see it as a problem that all participants were from the same class and may know each others. On the contrary, such a starting position is quite similar to reality. In Switzerland, for example, people are taxed at the local level and could also know each others.

² Depending on the income class, the subjects received in each round amounts comparable with the income to declare in one year.

group³. After a round subjects' net income in group 2, 3 and 4 can be calculated as income after taxes plus share of the multiplied group tax fund. Group 1 was used as a control group and thus did not receive any redistribution. To prevent framing effects, subjects were not informed that the surplus multiplier is a result of the state's efficiency. We would predict that higher surplus multipliers lead to higher tax compliance.

The surplus multiplier is not only an indicator of state efficiency. Participants could dislike the idea that a participant might suffer because of tax evasion, which reduces the total yield and so leaves less money for redistribution. Thus with the surplus multiplier, subjective moral constraints are introduced⁴. The underlying idea is that a taxpayer is not only interested in her/his own welfare, but also concerned about societies' welfare. Thus, it can be predicted that taxpayers who perceive more favourable exchanges will become less distressed and will have higher moral costs of tax evasion and will report more income than taxpayers with less favourable exchanges.

However, beside the positive effect of exchange and moral costs which have the tendency to increase tax compliance, there could also be a reverse effect. If the redistribution sum decreases, individuals notice that many individuals evade taxes which could crowd out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic. This feeling and reaction could increase with the surplus multiplier. Therefore, the net tax compliance effect is not clear.

Individual tax compliance decision could also be a function of risk attitudes. Prior studies did rarely control for risk attitudes. Risk preferences were measured to test whether subjects are risk averse, as often assumed in economic models. Subjects in our experiments had therefore to participate in an initial experiment. They had the possibility to choose between a certain payoff or a gamble with a higher payoff but with ten different probabilities (ten shots). The structure of the choices reproduced in *Table 1* is similar to the one used by

³ Other authors have also implemented multipliers. Alm, McClelland and Schulze (1992) found that a surplus multiplier increases the average group compliance in a non-linear way. The results of Alm, Jackson and McKee (1992) indicate that the average compliance is always higher in the presence of the public good. However, the introduction of fiscal uncertainty in the presence of a public good lowers the average compliance rate relatively to the base case.

⁴ The results of a one period experiment done by Bosco and Mittone (1997) seem to confirm that moral constraint worked as a powerful disincentive to evade. A serious limitation is the nature of their experiment, which was static (only one round). The decision to evade or not is rather a dynamic (movie) than a static problem (photo), because taxes are paid regularly every year. Furthermore, Bosco and Mittone (1997) did not vary the surplus multiplier. It was 0.7, this means that 70% of the total yield was redistributed in identical individual parts.

Cummings, Martinez-Vazquez, McKee (2001). Subjects had to choose between Option 1 and 2 for all 6 choices.

Table 1
Subjects Risk Attitude

	Payoff to Option 1	Payoff to Option 2	Expected Value for 2
1	Sfr. 3	6 SFr. if a 1 is rolled and 1 Sfr. otherwise	1.5
2	Sfr. 3	6 Sfr. if 1 or 2 is rolled, 1 Sfr. otherwise	2
3	Sfr. 3	6 Sfr. if 1 through 3 is rolled, 1 Sfr. otherwise	2.5
4	Sfr. 3	6 Sfr. if 1 through 4 is rolled, 1 Sfr. otherwise	3
5	Sfr. 3	6 Sfr. if 1 through 5 is rolled, 1 Sfr. otherwise	3.5
6	Sfr. 3	6 Sfr. if 1 through 6 is rolled, 1 Sfr. otherwise	4

The degree of risk aversion is determined where a subject crosses over from Option 1 to 2. Individuals which had chosen option 1 at an expected value of 3 and above were defined as risk-averse (dummy variable). We had originally planned to conduct the experiment with four groups of participants each consisting of 8 subjects. However, the actual sample was made up with 30 subjects, 8 in group 1 and 2 and 7 in group 3 and 4, because 2 did not come to the experiment.

Table 2
Experimental Design

Groups	Audit Probability (p)	Fine Rate (f)	Tax Rate (t)	Surplus Multiplier (sm)
Group 1	5%	2	20%	0
Group 2	5%	2	20%	1
Group 3	5%	2	20%	1.5
Group 4	5%	2	20%	2

IV. DATA EVALUATION

The data evaluation will be done with a rapidly developing methodology for the analysis of longitudinal data on the occurrence of events. In social science there is an interest in events and their causes. Models for duration data were initially developed in health sciences. One of the first focus was the study of mortality. Researchers analysed the effectiveness of treatments on prolonging the lifespan of the patients. Duration models are applied to the length of marriages, spells of unemployment, lengths of time on welfare and duration of peace (see Beck 1998). Political scientists have started to use duration models to analyse the political process, especially in the study of international conflict (see, e.g., Box-Steffensmeier and Zorn 2001a, 2001b, Beck et al. 1998). Interestingly, tax compliance experiments seldom estimate regressions employing time variables. We attempt to adapt event history methodology to the conducted experiment. This will allow us to better analyse the temporal dynamic process of tax compliance.

1. Defining the Event

Event history analysis methods are particularly suited for data which exhibit two important characteristics: the presence of observations which are not observed for the full period of “risk” for an event and explanatory variables which change over time or have effects which change over time.

Most previous experimental works on tax evasion or tax compliance have not persistently considered the time factor in their analysis. Many authors have developed designs with more than one round and studied the distribution of tax compliance rate over time. More recently, researchers try to focus on regression models. In our analysis we use the event history method to evaluate our experimental results. According to Allison (1984) an event history is a longitudinal record of when events happened to a sample of individuals. It has two main features: the event and time-varying explanatory variables. An event is a qualitative change that occurs at a specific point in time. It is important that the event creates a change which consists of a sharp distinction between what precedes and what follows (Allison 1982). To define the event of our analysis we determine the optimal one period strategy for each subject. We assume that the individual’s goal is to maximise the expected value and that an

individual takes the actions of others as given. We can then define the expected value from the choice of how much income to report as:

$$EV = Y - t Y^D + m s (G + t Y^D) - p f (t(Y - Y^D)) \quad (1)$$

where:

Y is income before taxation

Y^D is the declared income

t is the tax rate

m is the surplus multiplier

s is the individual's share of the group tax fund

G are taxes paid by all other group members, thus, $G + t Y^D$ are the total group taxes

p is the probability of detection and, f the fine rate on unpaid taxes.

If we maximise equation (1) by the declared income Y^D , individuals will report the whole income if:

$$p f + m s \geq 1 \quad (2)$$

Applying equation (2) to the different groups according to the values in *Table 2* we receive the following results:

Table 3
Individuals' Report Decision in Different Groups

Group 1	0.1000
Group 2	0.2250
Group 3	0.3145
Group 4	0.3860

Table 3 shows that all amounts are below 1 and thus, it would be optimal for each individual in each group to evade the whole income. Two limitations should be put into account using the presented model. First, the endogenous audit selection rule of controlling the last four tax

reports if tax evasion is found is not integrated into the model. One would expect the values to be higher. Furthermore, the model presented does not integrate the aspect that the game covers more than one period. Effects of previous experiences or wealth changes are ignored. Subjects might learn during the experiment. Generally, literature on voluntary contribution mechanisms and social dilemmas shows many times that public good contributions decline with each repetition (see, e.g., Isaac and Walker 1988, Andreoni 1988, Dawes and Thaler 1988). The decay is observed when subjects know the length of the game for sure as well as when they do not. Two hypotheses are often proposed: strategies and learning (Andreoni 1988). The learning hypothesis holds that repeated games allow individuals to learn the incentives. Some learn more quickly than others but on average compliance decays towards zero. However, Andreoni (1988) states that there is a reverse effect as repetition allows subjects to signal future moves to each other. The strategies hypothesis holds that in an incomplete information situation, a subject may believe that other group members will possibly comply. If an individual free rides, she/he will educate the other participants. As a consequence, co-operation decreases.

2. Tax Honesty Curves

In the first step, we are going to develop “tax honesty” curves, focusing on a few variables. A “tax honesty” function $H(t)$ expresses the probability that an individual remains in the state of not evading the full taxes until time t . $H(t)$ can be defined as:

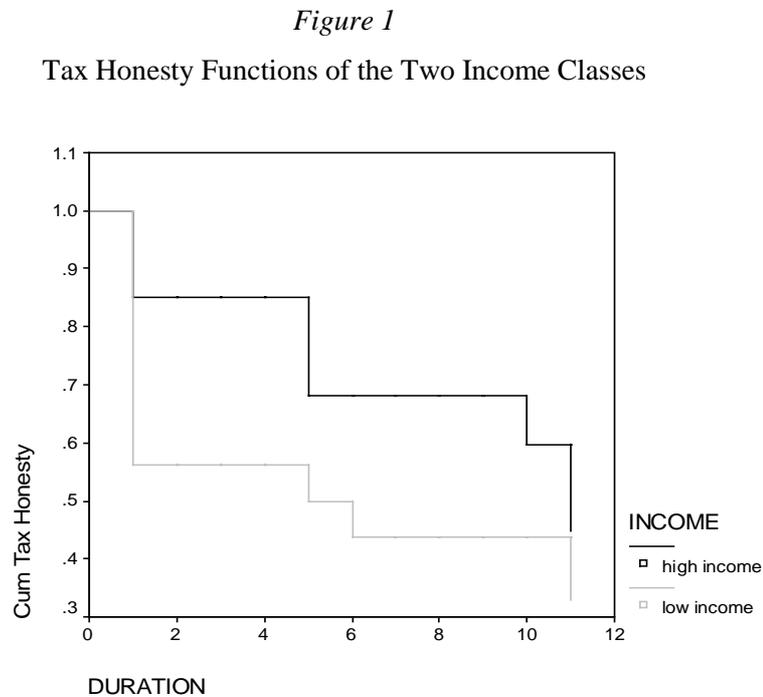
$$H(t) = P(T \geq t) = \exp\left(-\int_0^t h(u) du\right) \quad (3)$$

$H(t)$ can also be defined as:

$$H(t) = \Pr(T > t) = 1 - F(t) \quad (4)$$

where $F(t)$ is the cumulative distribution function, a function that indicates the probability of the variable being less than or equal to any chosen value t . The honesty function gives the probability of being honest beyond t . Because H is a probability, it is comprised between 0 and 1. As t gets larger, H never increases. The advantage of this method is that it can handle

situations where some subjects remain honest and do not fully evade taxes. As we have 12 rounds, we can classify the observations into equal time intervals such as rounds. *Figure 1* shows the tax honesty functions for the income classes.



Notes: Log Rank, $p=0.3146$; Wilcoxon, $p=0.1771$.

Looking at the two tax honesty curves we see that the fraction of people with a lower income remaining honest during the 12 rounds is lower than for high income individuals. We can see that a great fraction of low income people already fully evade taxes after one round. Thus, there seems to be a comparable difference between different income classes. To better compare these subgroups and thus to test if their tax honesty is significantly different, we perform the comparisons with the log-rank⁵ and the Wilcoxon test⁶. It seems that both tests

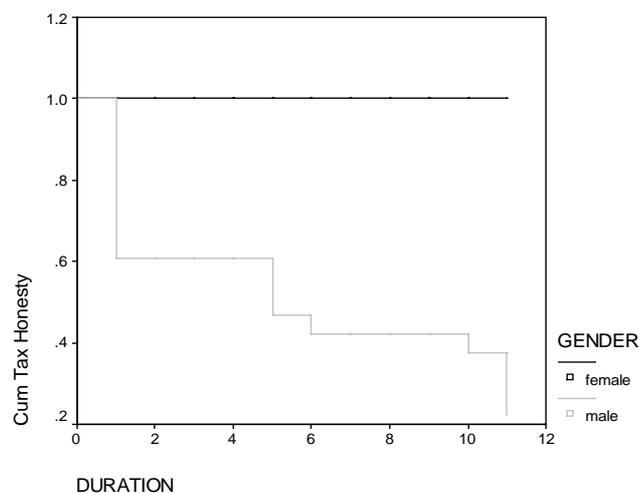
⁵ The log-rank test for group 1 (high income class) can be written as: $\sum_{j=1}^{12} (d_{1j} - e_{1j})$, where the summation is over all single times (in both income groups) and there are 12 such times. d_{1j} is the number of evades that occur in group 1 at time j , and e_{1j} is the expected number of full evasions in group 1 at time j .

⁶ The Wilcoxon statistic is given by $\sum_{j=1}^{12} n_j (d_{1j} - e_{1j})$. It differs from the log-rank statistics only by the presence of n_j , the total number at risk of experiencing full tax evasion at each time point. Thus, it is a weighted sum of the deviations of observed numbers of events. Since the Wilcoxon test gives more weight to early times than to

are not significant. However, as the number of observations is quite small (30), one should be careful with interpretations.

Figure 2 presents tax honesty functions focussing on the differences between females and males. The result shows that female participants seem to be quite honest. The different group functions are not presented, because of the small amount of observations.

Figure 2
Tax Honesty Functions of Female and Male Individuals



Notes: Log Rank, $p=0.0042$; Wilcoxon, $p=0.0060$.

3. Discrete-Time Analysis

To investigate the relationships among different variables, we expand our analysis to check the multiple relationship between the variables. We restrict our analysis, focussing only on a single, non-repeatable event. We are going to work with the discrete logit model⁷ and the Cox model. Both models make it possible to account for duration dependence without making strong assumptions (see Beck 1998).

We estimate regression models in which the probability that the event of full tax evasion occurs over time depends on a set of constant and time-dependent variables. For this,

late times (n_j always decreases), it is less sensitive than the log-rank test to differences between groups that occur at later points in time. Thus, despite both tests have the same null hypothesis, they differ in their sensitivity to various deviations from that hypothesis.

⁷ Discrete-time logit models have the advantage to use logistic regression programs with the differences that there are multiple observations for each subject.

we have to specify the probability that the event will occur at a particular time to an individual, given that the individual is at risk at that time. An individual is still present in the sample when the event has not occurred. To create longitudinal data we created a duration variable (number of time units before an event occurs) and a censor variable, which indicate whether an individual has experienced the event or not, and fixed and time-varying data⁸. To estimate discrete-time models with logistic regression, for each unit of period that an individual is known to be at risk and thus has not fully evaded taxes, a separate observation record is created. For every person-time-unit, the dependent variable is coded 1 if a person experienced the event, otherwise 0. The fixed explanatory variables have the same value for all the records associated with the same taxpayer. Time-varying explanatory variables have the value measured at each unit of time (see Allison 1984)⁹.

To avoid bias and inconsistency we are not going to drop out variables that are not statistically significant (see McCloskey 1996). Furthermore, we will also focus on the actual magnitude and the sign of the estimated coefficients¹⁰.

Logistic regression is used because we want to predict whether an event will occur or not. Thus, the dependent variable is dichotomous. Instead of taking the event itself as the dependent variable, it takes the log of the odds that the event will happen¹¹. The parameters of the model is estimated by the maximum likelihood method. At the end of the process, the coefficients that make the observed results more likely to appear are retained. The group variables are entered in the 3 (n-1) dummy variables. A logistic regression is possible because the number of our observations is higher than 100 (see, e.g., Malhotra 1983, McFadden 1974, p. 123). The following model is estimated:

⁸ Information changing through time are coded in time-vector form. Each time-vector is used as a time-varying covariate, which predicts the rate of occurrence of an event. The 'slid' data set used has 12 variable vectors, because the experiments had 12 rounds. Thus, the "personal time-unit" data set includes more observation than the original data set (213 "person-period" compared to 30 observations).

⁹ The discrete-time logistic regression has three basic assumptions (see Singer and Willett 1993): i) linearity of the logit, ii) the proportionality of the odds, iii) no unobserved heterogeneity. Linearity can be tested by adding polynomial terms. The addition of these terms should not significantly lower the $-2 \log$ Likelihood. For the proportionality of the odds, there should be no interaction between the independent variable and the time. To test this, $i-1$ period dummies are constructed and the interaction with the independent variable for significant decreases in the $-2 \log$ Likelihood are tested. As the logit hazard regression model has no error term, all the variations are assumed to be contained in the specified variables.

¹⁰ The sign is not economically significant unless the magnitude is large enough to matter (McCloskey and Ziliak 1996). What can we conclude from these findings? It is not unproblematic to conclude that statistical significance means always economic significance (McCloskey and Ziliak 1996). A test helps to deal with the question whether a difference is real or not and not if the difference is important (Freedman, Pisani and Purves 1978).

¹¹ $\ln(\text{odds}) = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_n x_n$, where $\text{odds} = \frac{\text{prob}(\text{event})}{\text{prob}(\text{no_event})} = \frac{P}{1-P}$. The model becomes:

$$\ln\left(\frac{P}{1-P}\right) = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_n x_n \quad \text{and} \quad p(\text{event}) = \frac{1}{1 + e^{-(b_0 + b_1 x_1 + b_2 x_2 + \dots + b_n x_n)}} .$$

$$\log(P(t)/1-P(t)) = (CURRTIME(t) + b1RISKAVER + b2INCOME + b3GENDER + b4AGE + b5WORK + b6GROUPS + b7FORTUNE(t)) \quad (5)$$

where:

- CURRTIME(t) is a categorical variable, which refers to twelve different years that are observed. Without implementing it, the model would be quite restrictive because it would imply that the only changes in the hazard over time are those which result directly from the time-varying explanatory variable. In most cases, hazard changes with time. Including current time at risk as a categorical covariate enables to control for non-linear effects of time.
- RISKAVER is a dummy variable developed from the risk aversion test (0= risk averse). Individuals which had chosen option 2 at an expected value of 3 and above were defined as risk-averse (see *Table 1*).
- INCOME is a dummy variable (1= HIGH INCOME). The hypothesis would be that higher income subjects are less likely to experience full tax evasion.
- GENDER is a dummy variable (FEMALE =1).
- AGE is a continuous variable.
- WORK is a dummy variable (1=working). The question from the supplementary questionnaire was “Do you have extra earnings?”
- GROUPS are four dummy variables, one for each group. The hypothesis would be that a higher surplus multiplier reduces the hazard rate of full tax evasion.
- FORTUNE(t) is a time-varying explanatory variable, which is the accumulated income in each round. Many previous studies did not control for such a wealth effect. Increase in total wealth could influence taxpayers’ risk behaviour, who will take greater risks and thus report less income. Hartog, Ferrer-i-Carbonell and Jonker (2002) found in an empirical survey analysis that an increase in wealth reduces risk aversion. Binswanger (1981) found in an experiment that wealth tends to reduce risk aversion but not in a statistically significant way.

Table 4 presents the results. 68% of the variation in the event is explained by our model¹². The Wald statistics state that using a significance level of 0.05 the coefficients for HIGH INCOME and AGE and WORK seem to be significantly different from 0. The coefficients for GROUP3 is on the border of significance.

¹² Nagelkerke R Square (0.678) coefficient provides a similar measure to the R Square in a OLS regression.

Table 4

Binary Logistic Regression Explaining the Event of Full Tax Evasion

	<i>B</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp(B)</i>
Constant	7.576	1.398	0.237	
FORTUNE	0.162	1.479	0.224	1.176
RISKAVER	-0.722	0.362	0.547	0.486
HIGH INCOME	-3.522	6.113	0.013	0.030
FEMALE	-14.002	0.095	0.758	0.000
AGE	-0.277	5.088	0.024	0.758
WORK	-4.292	5.111	0.024	0.014
GROUP2	-2.034	1.907	0.167	0.131
GROUP3	-4.304	3.581	0.058	0.014
GROUP4	-0.374	0.077	0.782	0.688
CURRTIME(1)	4.210	0.925	0.336	67.324
CURRTIME(2)	-7.835	0.004	0.947	0.000
CURRTIME(3)	-8.322	0.005	0.944	0.000
CURRTIME(4)	-8.772	0.005	0.941	0.000
CURRTIME(5)	2.722	0.756	0.384	15.214
CURRTIME(6)	1.423	0.259	0.611	4.148
CURRTIME(7)	-9.419	0.003	0.955	0.000
CURRTIME(8)	-9.984	0.004	0.952	0.000
CURRTIME(9)	-10.554	0.004	0.949	0.000
CURRTIME(10)	-0.617	0.156	0.949	0.000
CURRTIME(11)	-10.962	0.004	0.693	0.539

Notes: - 2 Log likelihood = 47.804, Nagelkerke R Square. In the reference group are RISK TAKERS, LOW INCOME, NOT WORKING, GROUP1, CURRTIME (12).

People with higher income are more than 30 ($1/Exp(B)$) times less likely than individuals with a lower income to experience full tax evasion. As the tax rate in our experiment was identical for both income classes, the results show that equity considerations seem to play an important role. Low income players could feel a lack of equity in an exchange relationship compared to the high income players, which creates a sense of distress. Such a disadvantage could be followed by anger. Tax evasion may be seen as a reaction intended to restore equity. This can be an indicator that the decision to evade all the taxes is a complex process. The results show that it is important to look at the possibility that the tax evasion can be driven by perceived injustices or inequalities in the tax law. The income distribution according to the performance in the game, may reduce the inequality feeling, compared to a situation where the income levels are randomly assigned. Furthermore, the variable FORTUNE (accumulated income) helps to better control wealth effects. Interestingly, the coefficient is not significant. This could enhance the relevance of equity consideration for the difference between high income and low income taxpayers, taxed with the same rate. The coefficient of FORTUNE has the

predicted sign. Increase in total wealth could influence taxpayers' risk behaviour, who could start taking greater risks and thus reporting less income. However, the coefficient is not significantly different from 0.

It is being discussed whether the proposition to assume risk neutral or risk averse preferences is appropriate. The traditional view has often assumed risk averse taxpayers. Previous tax compliance experiments have often missed to persistently control for risk attitudes. Our result shows that taxpayers who are risk averse are almost 4 times less likely to experience full tax evasion compared to the other taxpayers. However the coefficient is not significantly different from 0. To check the robustness of the coefficient, we redefined the variable RISK AVERSE. Individuals which had chosen option 1 at an expected value of 3.5 and above were defined as risk-averse. The coefficient did not significantly change. Thus, the risk-neutral assumption in Equation 1 to calculate the optimal single-period strategy for each subject seems not to be inappropriate. However, the descriptive analysis with the honesty curves show that individuals behave on average more honestly than a simple application of the expected utility theory would suggest.

The coefficients for GROUP 3 seem to be significantly different from 0 at a significance level of 0.10. All three group coefficients have the predicted sign. Individuals in redistribution groups are less likely than individuals without a redistribution (GROUP1) to experience full tax evasion. The strongest effect can be seen in GROUP 3, where the individuals are more than 70 times less likely to experience the event than individuals in GROUP1. Looking at GROUP 2 and GROUP 4 it is not clear whether the probability of not evading all taxes increases with the surplus multiplier. There could be a dynamic adaptation, where agents modify their behaviour according to past experiences inside a group. The intensity of moral constraints might depend on how widespread evasion behaviour is in a group. The social constraint might be very small if the individuals perceive themselves to be in a minority who pay taxes. People who previously paid taxes might be angry, which reduces the moral costs of evasion and increases the incentive to engage in tax evasion. Thus, individuals could react emotionally and very strongly to perceived changes next to them. In our experiment the group taxes were redistributed in equal shares. At the beginning of each round, the participants saw the redistributed sum and were able to get the information how compliant other taxpayers are. Tax morale might be crowded out in a group with a surplus multiplier. If the redistribution sum decreases, individuals notice that many individuals evade taxes which crowds out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be

opportunistic. Taxpayers' probability to undertake full tax evasion depends on their choice in relation to the choices of the other group members. There is a taxpayer-taxpayer game that determines the equilibrium which could diverge from a co-operative one.

While there was a significant difference between female and male taxpayers' honesty curves, gender has not a significant effect on the probability to undertake the event in the multivariate analysis. On the other hand, people who work beside their studies are less likely to evade their entire taxes.

To analyse the sensitivity, we try to evaluate if the main variables are fragile. For this, we do minor changes in the amount of variables and see whether the main variables change and thus the conclusions alter fundamentally (see *Table 5*)¹³. A further sensitivity test will be to use the semi-parametrical Cox method, which will be done in the next subsection.

It is interesting to control for religiosity. According to our supplementary questionnaire we built three dummy variables (catholic, protestant, other confessions or without a confession¹⁴). Furthermore, as confession does not per se imply that someone is religious, we asked the subjects if they practise. With this, a dummy variable (RELIG) was built. In model II we integrated the variable RELIG and in model III we added the confessions dummy variables. The sign and the significance of the main coefficients did not change.

In model IV we integrated two further variables: DISAPP and DECINCOME. DISAPP is a continuous variable which measures the disappointment at knowing that someone has evaded taxes¹⁵. DECINCOME is a subjective expected rate of income declared (continuous variable). The question was "How much income do you think other people have declared (write it as percentage)?" The variables DISAPP and DECINCOME can be seen as proxies for the perceived attitude towards evasion. A high level of regret over evasion by others is a proxy for moral attitudes and a high expected rate of tax compliance should signal the belief that the prevailing attitude is in favour of tax compliance (see Bosco and Mittone 1997). Adding these variables did not strongly affect the main variables. Interestingly, the sign of the coefficient for GROUP 4 changed. The coefficient for GROUP 2 is on the border of significance at the 10 percent level (sig. = 0.101). The coefficients of the proxies for the perceived attitude towards evasion (variables DISAPP and DECINCOME) are not significant. Furthermore, the coefficient sign of the variable DISAPP is positive. This could be interpreted

¹³ For a deeper discussion see Leamer (1985).

¹⁴ As there were only two participants in the last two categories we put them together.

¹⁵ The question from the questionnaire was "How much do you regret that some of the other participants have decided to evade their taxes? (scale 1 (no regret) to 5 (high regret)).

as an indication that people who evaded their entire taxes did hope that others comply to get a higher income.

To compare different models and thus to check if adding new variables in the model adds significantly to the explanation, a likelihood-ratio test can be done¹⁶. The Prob(chi-square) varies between 0.230 and 0.604, thus the variables added in the different models did not add significantly to the explanation of the event full tax evasion.

Table 5
Sensitivity Analysis

	MODEL I		MODEL II		MODEL III		MODEL IV	
	COEFFICIENT	Exp(B)	COEFFICIENT	Exp(B)	COEFFICIENT	Exp(B)	COEFFICIENT	Exp(B)
FORTUNE	0.162	1.176	0.176	1.193	0.168	1.183	0.195	1.215
RISKAVER	-0.722	0.486	-0.552	0.576	-1.001	0.367	-1.361	0.256
HIGH INCOME	-3.522**	0.030	-4.164***	0.016	-4.436**	0.012	-5.013**	0.007
FEMALE	-14.002	0.000	-15.028	0.000	-14.853	0.000	-16.402	0.000
AGE	-0.277**	0.758	-0.319**	0.727	-0.339**	0.713	-4.504*	0.652
WORK	-4.292**	0.014	-3.958**	0.019	-4.037*	0.018	-0.428**	0.011
GROUP 2	-2.034	0.131	-2.194	0.112	-2.621	0.073	-4.369	0.013
GROUP 3	-4.304*	0.014	-4.316*	0.013	-4.123*	0.016	-4.774*	0.008
GROUP 4	0.374	0.688	0.38	1.462	0.089	1.093	-1.095	0.335
RELIG			-1.705	0.182	-2.252	0.105	-2.86	0.057
CATHOLIC					-0.08	0.923	-0.634	0.531
PROTEST					-1.094	0.335	-1.987	0.137
DECINCOME							0.033	1.033
DISAPP							0.812	2.225

Notes: * significant at 10% level, **significant at 5% level, ***significant at 1% level. Nagelkerke R Square, model I 0.643, model II 0.655, model III 0.663, model IV 0.678. -2Log likelihood, model I 47.804, model II 46.361, model III 45.353, model IV 43.573.

4. COX-Regression

In a further step, the Cox method is applied. The advantage of this method is that it does not require to make a choice of a specific probability distribution. The model can be written as:

$$h_i(t) = \lambda_0(t) \exp(\beta_1 x_{i1} + \dots + \beta_k x_{ik}) \quad (6)$$

¹⁶ $G_0^2 = -2 \log \frac{L_0}{L_1} = 2(\log L_1 - \log L_0)$, where model L1 has n variables and model L0 has n-p variables. G_0^2 is distributed as the chi-square with p degree of freedom.

The hazard for individual i at time t is the product of an unspecified baseline hazard function (λ) and an exponential linear function of a set of k fixed covariates. If we take the logarithm of both sides, equation (6) is transformed in equation (7).

$$\log h_i(t) = \alpha(t) + \beta_1 x_{i1} + \dots + \beta_k x_{ik} \quad (7)$$

where $\log \lambda_0(t)$ was replaced with $\alpha(t)$. According to Allison (1995), the advantage of the Cox model is that $\alpha(t)$ can take any form.

Similar to *Table 5* four models were built. In the results in *Table 6* we see that the coefficients for INCOME, AGE, WORK, GROUP 3 are always significant. In model VII and VIII the coefficient for GROUP 2 is significant. In model VIII, the coefficient for PROTESTANT becomes significant. Throughout the models I to VIII the signs of the coefficients did hardly ever change. Interestingly, in model V to VIII the sign of the coefficient for GROUP 4 is negative. Furthermore, the relative risks ($\exp(B)$) were quite similar in all eight models.

Table 6
Cox-Regression Model

	MODEL V		MODEL VI		MODEL VII		MODEL VIII	
	COEFFICIENT	Exp(B)	COEFFICIENT T	Exp(B)	COEFFICIENT NT	Exp(B)	COEFFICIENT	Exp(B)
FORTUNE	0.116	1.123	0.118	1.126	0.14	1.15	0.236	1.266
RISKAVER	-0.475	0.622	-0.341	0.711	-0.12	0.887	-0.042	0.959
HIGH INCOME	-2.454**	0.086	-2.728***	0.065	-3.229***	0.040	-4.539***	0.011
FEMALE	-13.244	0.000	-13.429	0.000	-13.211	0.000	-13.491	0.000
AGE	-0.191**	0.826	-0.202**	0.817	-0.183**	0.832	-0.304***	0.738
WORK	-2.689***	0.068	-2.489***	0.083	-2.355**	0.095	-3.013**	0.049
GROUP 2	-1.478	0.228	-1.586	0.205	-1.911*	0.148	-3.257**	0.039
GROUP 3	-2.697**	0.067	2.750*	0.064	-2.875**	0.056	-3.495**	0.03
GROUP 4	-0.243	0.784	0.056	1.058	-0.623	0.536	-1.005	0.366
RELIG			-0.904	0.405	-1.783	0.168	-2.19	0.112
CATHOLIC					-1.167	0.311	-1.524	0.218
PROTEST					-1.228	0.293	-2.67*	0.069
DECINCOME							0.04	1.041
DISAPP							0.424	1.528

Notes: * significant at 10% level, **significant at 5% level, ***significant at 1% level.

V. CONCLUSIONS

Until now, we do not find many experiments which try to make use of event history models. Event history models allow to analyse temporal dynamics of processes. One limitation in our analysis is that we only emphasised methods for single, nonrepeatable full tax evasion. However, full tax evasion can occur many times over the whole experiment. On the other hand, models for repeated events tend to be more complicated and raise a number of difficult statistical questions (see Allison 1984). Nevertheless, future research work should focus more on repeated events. Political scientists have started to analyse repeated events data (e.g., studies of wars, coups, state constitutions, see Box-Steffensmeier and Zorn 2001b). Another limitation in our analysis is that we ignored to investigate the relevance of the amount of evaded income as dependent variable.

The advantage of using experiments is that an experimental environment can be designed closely to the natural environment working with policy instruments as tax rate, audit rate, fine rate etc. Nevertheless, the limitations and problems of experiments must be taken in consideration, especially the design sensitivity. Furthermore, it should be noticed that our number of participants is quite small. Analysing temporal aspects allowed to increase the number of observations in our multiple regression analysis.

Previous studies have focused on horizontal equity and analysed situations where individuals with the same income were subject to different tax rates. In our analysis we let the tax rate constant for two different income classes. Furthermore, we tried to control for factors as, e.g., risk attitude and accumulated income (wealth) which has often been neglected in other studies. Low income taxpayers are more likely to undertake full tax evasion compared to high income taxpayers. This means that equal tax rates for different income groups is a strategy to increase the honesty of high income taxpayers compared to low income taxpayers. However, the total effect on the collected tax sum also depends on how strong low income taxpayers crowd out their tax morale. We would not go so far as “Whispering in the Ears of Princes”¹⁷ an argument against progressive taxation, but rather to point out the consequences of different income groups.

The effect of the surplus multiplier is not so clear. Generally, the tendency is that positive actions (integrating the surplus multiplier) are intended to increase taxpayers’ positive attitudes and commitment to the tax-payment and thus enhance compliant behaviour.

¹⁷ “Whispering in the Ears of Princes” deals with the dialogue between experimenters and policymakers. As already mentioned, most experiments on tax compliance and tax morale fall into the first two categories (see Torgler 2002).

However, it seems that the net effect depends on taxpayers' positive or negative behaviour within the group. Moral costs are reduced if people see that other group members also evade taxes. As a consequence tax morale is crowded out and tax evasion is seen as a mechanism to restore equity.

APPENDIX

AI. INSTRUCTION SHEET (translated from German)

participant no.

Many thanks for your co-operation in this study analysing tax morale. You can ask the experimenter questions any time you want. But during this session, any communication between participants is forbidden.

You can earn money in this experiment. The money will be paid to you in cash during the next tutorial if you produce the payment check below. Otherwise you can pick up your money in our office (WWZ, Room 111). Your decisions are anonymous. You are identified solely with your participant number shown on the upper left of this sheet and on your check. Thus the payments are strictly confidential as well. You will receive them in a sealed envelope with your number. Nobody, neither the experimenter nor the other participants, will be able to attribute a decision to a person.

The income assigned to you is taxable income. The tax rate is 20%. The sum paid to you depends on the income you declare. There is a probability of 5% that your tax declaration is audited. If tax evasion is detected, you will have to pay in addition to the normal tax due a penalty of the same amount (tax + tax penalty = fine rate 2). In addition, your last four years' declarations will be audited for honesty. You will receive further information during the simulation.

Experiment payment check

Participant no.

AII. DECLARATION FORM

Jahr

I. STEUERBETRAG DEKLARIEREN

Generelle Informationen:

Steuersatz: **20 %**
 Überprüfungswahrscheinlichkeit: **5 %**
 Wird jedoch Steuerhinterziehung festgestellt, werden Sie die letzten vier Jahre auf Ihre Steuerehrlichkeit überprüft.
 Strafsteuersatz: **2.0** (200 % des hinterzogenen Betrages = Strafsteuer und Nachsteuer)

Persönliche Informationen:

Vermögen: **0 CHF**
 davon: **0 CHF** staatliches Transfereinkommen aus dem letzten Jahr
 Steuern: **0 CHF** des letzten Jahres
 Einkommen: **40000 CHF**

Deklaration:

Ich deklariere hiermit einen zugewiesenen Einkommensbetrag in der Höhe von :
 CHF:

Ausserdem sollten Sie wissen, dass das gesamte Steuereinkommen aus Ihrer Gruppe mit dem **Faktor 2** multipliziert wird und wieder unter den TeilnehmerInnen verteilt wird. Einnahmen aus der Nachsteuer und Strafsteuer werden nicht umverteilt.

Notes: This screen shows the text for group 4. For group 2 and 3 the screen is almost identical, the only difference is the surplus multiplier factor. In the screen of group 1, the last paragraph was left out.

TRANSLATION

Income Tax Report:

General Information:

Tax Rate: 20%

Probability of audit: 5%

If tax evasion is detected, the previous four period's are controlled.

Fine rate: 2.0 (200 % on unpaid taxes = penalty tax and after taxes)

Personal information:

Fortune:

therefrom: state's transfer from the last year

Income:

REFERENCES

- Allison, Paul D. (1982). Discrete-time Methods for the Analysis of Event Histories, in: S. Leinhardt (ed.), *Sociological Methodology*. San Francisco: Jossey-Bass: 61-98.
- Allison, Paul D. (1984). *Event History Analysis*. Regression for Longitudinal Event Data. Newbury Park: Sage Publication.
- Allison, Paul D. (1995). *Survival Analysis Using the SAS System : A Practical Guide*. Cary: SAS Publishing.
- Alm, J. (1998). Tax Compliance and Administration, Working Paper, University of Colorado at Boulder.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Andreoni, J. (1988). Why Free Ride? Strategies and Learning in Public Goods Experiments, *Journal of Public Economics*. 37: 291-304.
- Beck, N. (1998). Modelling Space and Time: The Event History Approach, in: E. Scarbrough and E. Tanenbaum (1998), *Research Strategies in the Social Sciences*. A Guide to New Approaches. Oxford: Oxford University Press: 191-213.
- Beck N., J. N. Katz and R. Tucker (1998). Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable, *American Journal of Political Science*. 42: 1260-1288.
- Binswanger, H. P. (1981). Attitudes Towards Risk: Theoretical Implications of an Experiment in Rural India, *Economic Journal*. 91: 867-890.
- Bordignon, M. (1993). A Fairness Approach to Income Tax Evasion, *Journal of Public Economics*. 52: 345-362.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Box-Steffensmeier, J. M. and C. J. W. Zorn (2001a). Duration Models and Proportional Hazards in Political Science, *American Journal of Political Science*. 45: 951-67.
- Box-Steffensmeier, J. M. and C. J. W. Zorn (2001b). Duration Models for Repeated Events, unpublished manuscript.
- Brown-Kruse, J. and D. Hummels (1993). Gender Effects in Laboratory Public Goods Contribution: Do Individuals Put Their Money Where Their Mouth Is?, *Journal of Economic Behavior and Organization*. 22: 255-267.
- Cummings, R. G., J. Martinez-Vazquez and M. McKee (2001). Cross Cultural Comparisons of Tax Compliance Behavior, Working Paper No. 01-03. George State University. School of Policy Studies.

- Dawes, R. M. and R. H. Thaler (1988). Anomalies: Cooperation, *Journal of Economic Perspectives*. 2: 187-197.
- Falkinger, J. (1995). Tax Evasion, Consumption of Public Goods and Fairness, *Journal of Economic Psychology*. 16: 63-72.
- Freedman, D., R. Pisani, R. Purves (1978). *Statistics*. New York: Norton.
- Frey, B. S. and S. Meier (2000). Political Economists are Neither Selfish nor Indoctrinated, Working Paper No. 69, University of Zurich, December.
- Güth, W. and K. Mackscheidt (1985). Die Erforschung der Steuermoral, mimeo, Universität zu Köln.
- Hartog, J., A Ferrer-i-Carbonell and N. Jonker (2002). Linking Measured Risk Aversion to Individual Characteristics, *KYKLOS*. 55: 3-26.
- Hoffman, E. and M. L. Spitzer (1985). Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice, *Journal of Legal Studies*. 14: 259-297.
- Isaac, R. M. and J. M. Walker (1988). Group Size Effects in Public Goods Provision : The Voluntary Contributions Mechanism, *Quarterly Journal of Economics*. 53: 179-200.
- Isaac, R. M., K. McCue and C. Plott (1985). Public Goods Provision in an Experimental Environment, *Journal of Public Economics*. 26 : 51-74.
- Leamer, E. E. (1985). Sensitivity Analyses Would Help, *American Economic Review*. 75 : 308-313.
- Malhotra, N. K. (1983). A Comparison of the Predictive Validity of Procedures for Analyzing Binary Data, *Journal of Business & Economic Statistics*. 1: 326-336.
- McCloskey, D. N. (1996). *The Vices of Economists – The Virtues of the Bourgeoisie*. Amsterdam: Amsterdam University Press.
- McCloskey, D. N. and S. T. Ziliak (1996). The Standard Error of Regressions, *Journal of Economic Literature*. 34: 97-114.
- McFadden, D. (1974). Conditional Logit Analysis of Qualitative Choice Behaviour, in: P. Zarembka (ed.), *Frontiers in Econometrics*. New York: Academic Press: 105-142
- Singer, J. d. and J. B. Willet (1993). Its about Time: Using Discrete-Time Survival Analysis, *Journal of Educational Statistics*. 18:155-195
- Torgler, B. (2001). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-683.
- Tyler, T. R. and H. J. Smith (1998). Social Justice and Social Movements, in: D. T. Gilbert, S. T. Fiske and G. Lindzey (eds.), *The Handbook of Social Psychology*, Vol. 3. Boston: McGraw-Hill: 595-629.
- Walster, E., G. W. Walster and E. Berscheid (1978). *Equity: Theory and Research*. Boston: Allyn and Bacon.

CHAPTER XVII

CROSS CULTURE COMPARISON OF TAX MORALE AND TAX COMPLIANCE:

EVIDENCE FROM COSTA RICA AND SWITZERLAND*

ABSTRACT

There is little empirical evidence in the tax compliance literature about the effects of social norms on tax compliance. We are going to analyse tax morale and tax compliance behaviour with field data and data derived from laboratory experiments in order to evaluate the effects of internal and external social norms. A central point of this paper is the analysis of tax morale and tax compliance behaviour in Costa Rica and Switzerland, two countries in two different continents with different tax culture backgrounds. The results indicate that internal and external social norms have a significant effect on tax morale and tax compliance.

JEL classification: H260, K420, 9160

Keywords: tax morale, tax compliance, social norms

* Benno Torgler (2003). Cross-Culture Comparison of Tax Morale and Tax Compliance: Evidence from Costa Rica and Switzerland, WWZ-Discussion Paper 03/06, Basel: WWZ.

I. INTRODUCTION

In the last few years many researchers in the tax compliance literature have stressed the relevance of analysing the role of societal institutions to understand the puzzle of tax compliance. Thus, in this paper we have not focused on traditional issues as detection and punishment, but on the effects of alternative factors on tax compliance. The influence of social norms on tax compliance and tax morale is central in this paper. Alm and Martinez-Vazquez (2001) have classified social norms into two categories: internal and external norms. Internal norms refer to

“how the taxpayer judges his or her own compliance behavior in light of the individual’s own feelings about what is proper, acceptable, or moral behavior” (p. 10).

The external norms refer to

“how the taxpayer feels he or she is treated by government in such areas as the payment of taxes, the receipt of government services, or the responsiveness of government decisions” (p. 10).

In line with these definitions we are going to analyse empirically and with experiments to which extent internal and external social norms have an impact on tax morale and tax compliance. Furthermore, we will check with experimental methods if there is a significant difference in the degree of tax compliance between Costa Rica and Switzerland. Experiments are a good instrument for a cross-culture comparison as many factors are held constant and thus allow to isolate possible cultural differences.

The analysis of tax compliance in developing and transition countries is interesting as the state depends on a certain level of compliance to ensure or improve its institutions. We are going to compare two small countries in two different continents and thus two countries with different cultures and histories of compliance. We have chosen Costa Rica as it is one of the most stable countries in Latin America. This reduces possible “noises and biases” in cross-culture comparison and thus offers the possibility to better analyse the effects of social norms on compliance. Costa Rica and Switzerland are two small countries and as we are going to see, both countries had the lowest size of shadow economy in their regions (Costa Rica: Latin America, Switzerland: OECD). Furthermore, if we compare the importance of tax morale

using the World Values Survey (Switzerland, year 1989/90) and the Latinobarómetro (Costa Rica, year 1998), we observe almost identical values. It is insofar interesting to analyse the effects of alternative instruments on compliance in Costa Rica, as the country is confronted with government's deficits and long-term debt problems. Thus, policy makers in Costa Rica search for strategies to increase tax revenues. In this situation it is interesting to analyse what shapes tax morale and tax compliance. However, the governments' strategy for increasing tax rates to generate revenues is only one possibility.

According to the author's knowledge it is rather novel in the tax compliance literature to analyse empirically tax morale as dependent variable in European and Latin American countries and to compare these two countries in an experimental setting.

Section II analyses tax morale in Costa Rica and Switzerland. In Section III we are going to conduct a multivariate analysis for both countries to check what shapes tax morale in both countries. In a next step we present in Section IV the experimental evidence and Section V finishes with some concluding remarks.

II. TAX MORALE IN COSTA RICA AND SWITZERLAND

To understand differences in tax compliance and tax morale across cultures we first are going to give a short overview of general taxation issues to understand possible institutional and cultural differences.

1. Costa Rica

Costa Rica is confronted with a government's deficit and long-term debt problems. Thus, policy makers in Costa Rica search for strategies to increase tax revenues. In this situation it is interesting to analyse what shapes tax morale and tax compliance in Costa Rica. However, the strategy adopted by the government to increase tax rates and to generate revenues is only one possibility. It is important to develop clear policy strategies to understand tax morale and behavioural aspects.

Costa Rica is an interesting country to analyse as it has been one of the most stable democracies in Latin America. The top marginal income tax rate is 25 percent, the average taxpayer's marginal rate is 0 percent. Employees in Costa Rica have a withholding tax

deducted from their monthly wages. Thus, Costa Rica has not a self-filling system as Switzerland. In 2000, government expenditures were 23.4 percent of the GDP (O'Driscoll 2003). The index of economic freedom evaluates the fiscal burden in the year 2003 with a score point of 3.0¹ which is around the average considering Latin and Caribbean countries (see *Table A1* in the Appendix) and lower than the value for Switzerland (3.5). Costa Rica has a relatively low size of shadow economy compared to other Latin American countries.. The size of the shadow economy as a percentage of GDP in Costa Rica is according to Schneider and Enste (2000) between 23.2 and 34.5 (1989-1993) percent. The average of Central and South America is between 36.4 and 43 percent.

Looking at the income taxes we can observe that the top personal income tax rates fell between the years 1985/86 and 1997. The rates are below the Latin American averages in the years 1991 and 1997 (see Shome 1999). The total tax revenue in percent of GDP only slowly increased between the sample years 1990-1994 (17.5 percent) and 1995-999 (17.9 percent) when compared to other Central American countries, but the values are higher than the Central American average (14.5 and 16.5) (see Slotsky and WoldeMariam 2002). The top marginal income tax rate in 1995 for Costa Rica has been indicated by the Fraser Institute as a value 9, being higher than the Latin American average and also higher than the Swiss value of 8 (Gwartney and Lawson 1997)².

Among Costa Rica's main problems are the low degree of privatisation efforts and the strong commitment to the welfare state. The former President Miguel Rodriguez was not able to privatise state monopolies. The Index of Economic Freedom (2003) reports a statement of central bank president Eduardo Lizano regarding the lack of tax revenues: "We spend like we're rich but pay taxes like paupers". Thus, it is not surprising that the new legislation under Abel Pacheco, who won the presidential election in April 2002, has pushed the introduction of several temporary tax increases to address the government's deficit and long-term debt problems (see, e.g., Arroyo 2002a, 2002b)³.

¹ The index of fiscal burden measures the burden a government imposes on its citizens. The following variables have been integrated in the index: top income tax rate, tax rate an average taxpayer faces, top corporate tax rate and government expenditures measured as a percentage of GDP. To get the index, the scores of the income tax rate and the corporate tax rate are measured separately and then averaged to get a single taxation score. The final score for the fiscal burden consists of the averaged scores for income and corporate taxation and for government expenditures. The scores range from 1 to 5. The higher the rate, the higher the fiscal burden.

² The lower the top marginal income rate the higher the score ranging from 1 to 10.

³ Corporate tax rate, highway tolls, luxury tax on expensive cars, sin taxes on alcohol and tobacco, and taxes on mobile telephones are mainly the taxes which the government plans to increase.

2. *Switzerland*

Switzerland has a highly decentralised tax system structure. Swiss cantons have a far reaching autonomy in setting most types of direct taxes. Furthermore, many municipalities can impose their own direct taxes on the cantonal taxes. Compared to other OECD countries, the central government takes a low share of total tax revenues (e.g., in 2000, 32.2 percent, OECD average federal countries: 50.6 percent, unitary countries: 62.7 percent) and relies mainly on indirect taxes. The total tax revenues as percentage of the GDP increased in the period 1975 to 2000 from 27.9 percent to 34.5 being below the OECD average of 30.5, respectively 37.4 percent. The individual income and profit taxes as percentage of the GDP in Switzerland (OECD) has increased from 12.3 (11.7) to 13.8 (13.6) percent (OECD 2002).

In 1993 a tax harmonisation has been adopted, obligating the cantons to harmonise until 2001 the tax bases for net personal income tax but not the tax rates and schedules. Frey and Feld (2002) have estimated the degree of tax evasion for the years 1970-1995 at 23.4 percent. Schneider (2002) measures the size of shadow economy in percent of the GDP as 8.87 percent for the year 2000. Compared to other OECD countries, Switzerland in 1999 had the lowest size of shadow economy (8.3 percent) followed by the USA (8.8 percent) (The average over 21 OECD countries was 16.7 percent). The average standard legal fine for tax evasion (1970-1995) as a multiple of the evaded tax amount varied between 0 and 200 percent with a mean value of 96.97 and the mean value of the probability of detection was 55.23 percent, measured as the number of tax auditors as a percentage of the total number of taxpayers (Frey and Feld 2002, p. 36).

3. *Tax Morale in Costa Rica and Switzerland*

Why so many people pay their taxes although fines and audit probability are low has become a central question in the tax compliance literature (for a survey see Torgler 2001a). First we are going to evaluate the degree of tax morale for both countries comparing it to other countries in their regions. *Table 1* shows in column 2 for each country the percentage of individuals saying that tax avoidance is never justifiable. We can observe that the value of Costa Rica corresponds exactly to the average value of Latin America. *Table 1* indicates that countries with a high tax morale have a low rate of individuals stating that they know of/heard about tax avoidance. However, in Costa Rica only 23 percent of the individuals agreed to this question which is below the Latin American average.

Table 1

Tax Morale and Tax Evasion in Costa Rica 1998 (Latinobarómetro)

Country	Tax Avoidance Is Never Justifiable (%)	Mean	Tax Avoidance (%)
Argentina	66.3	2.266	34.2
Bolivia	49.2	2.044	34.8
Brazil	65.1	2.165	37.8
Columbia	65.3	2.214	26.8
Costa Rica	63.2	2.100	23.0
Chile	60.4	2.209	22.2
Ecuador	52.6	1.910	43.0
El Salvador	61.4	2.205	28.2
Guatemala	78.7	2.556	17.7
Honduras	79.6	2.519	24.9
Mexiko	50.2	1.732	36.5
Nicaragua	74.2	2.395	42.2
Panama	66.7	2.228	24.7
Paraguay	68.5	2.373	34.6
Peru	53.1	2.058	33.6
Uruguay	50.5	1.948	31.7
Venezuela	68.8	2.310	35.0
Average	63.2	2.190	31.2

Notes: Own calculations from the Latinobarómetro. Column 2: percentage of individuals saying that tax evasion is “never justified”. Column 3: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale. Column 4: percentage of individuals saying that they know or have heard that someone has managed to avoid taxes.

If we look at individuals’ perceptions of the reasons why people evade taxes (see *Table 2*), we find for Costa Rica that only 2 out of 8 values are above the Latin American average. 54 percent of the individuals responded that the lack of honesty is a reason why people do not pay their taxes, compared to 44.5 percent in Latin America. Furthermore, 29.2 percent argued that people don’t pay taxes because nationals are quick-witted and sly (Latin American average 26.4 percent). While the tax burden has the highest value for Latin America, people in Costa Rica placed this problem only at the third position after corruption.

Table 2
Reasons Why Individuals Evade Taxes

Why do people not pay their taxes?	Costa Rica	Average Latin America
Lack of honesty	54.0	44.5
Because there is corruption	43.7	44.2
Because the taxes are too high	37.6	46.8
Because Nationals are quick-witted and sly	29.2	26.4
Because the taxes are ill-spent	27.8	32.4
Lack of civic conscience	24.9	34.4
They don't see the point in paying taxes	21.2	29.4
Because those that evade taxes go unpunished	19.2	23.1

Source: Own calculations from the Latinobarómetro.

In a next step we are going to analyse tax morale in Switzerland with the help of the World Values Survey (WVS). As the scales are the same and the questions similar, we can compare the results obtained in *Table 3* and *4* with the findings of the Latinobarómetro. We are going to evaluate the latest two WVS survey waves (1989-1993 and 1995-1997). In line with the previous table, *Table 3* and *4* show in column 2 for each European country the percentage of individuals saying that tax evasion is never justifiable, while column 3 gives the mean value for all countries based on a scale from 0 to 3, where 3 is the highest tax morale. We have divided Europe in northern countries and romanic countries. Both values for Switzerland are above the average. In general, we observe a higher tax morale in the northern part of Europe. The second WVS wave has included less countries and shows a decay of tax morale. The value for Switzerland is still above the average, but much lower than for the year 1989-1990 and closer to the average.

Comparing the values for Costa Rica (year 1998) with those for Switzerland (year 1989/90) it is interesting to notice that they are almost identical (columns 2 and 3). On the other hand, looking at the year 1996, Switzerland shows a lower tax morale than Costa Rica. These findings make it interesting to compare both countries by means of an experiment which allows to control extraneous influences in order to investigate compliance behaviour in these two different culture settings. However, before starting with the experimental evidence we are going to analyse what shapes tax morale in both countries. It might be interesting to see to which extent independent variables have similar effects in both countries. This would

indicate that the influence of these variables on tax morale is independent of culture differences.

Table 3
Tax Morale in Switzerland 1989-1990 (World Values Survey)

Countries	Tax Evasion Is Never Justifiable (%)	Mean
<i>Northern Countries</i>		
Austria	62.3	2.260
Belgium	33.9	1.276
Denmark	57.3	2.025
Finland	40.3	1.637
West Germany	40.4	1.659
East Germany	67.2	2.344
Great Britain	53.9	1.945
Iceland	56.0	2.000
Ireland	48.8	1.798
Northern Ireland	69.7	2.248
Netherlands	42.9	1.644
Norway	43.1	1.642
Sweden	56.4	2.013
Switzerland	63.8	2.100
<i>Average</i>	<i>52.6</i>	<i>1.899</i>
<i>Romantic Countries</i>		
France	46.5	1.688
Italy	55.2	1.967
Portugal	39.9	1.483
Spain	58.4	2.021
<i>Average</i>	<i>50.0</i>	<i>1.790</i>
Total Average	52.0	1.875

Notes: Own calculations from the World Values Survey. Second column: percentage of individuals saying that tax evasion is "never justified". Third column: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

Table 4
Tax Morale in Switzerland 1996 (World Values Survey)

Countries	Tax Evasion Is Never Justifiable (%)	Mean
Finland	54.9	2.012
West Germany	40.1	1.607
East Germany	53.7	1.919
Norway	47.5	1.834
Spain	69.5	2.331
Sweden	49.3	1.870
Switzerland	53.5	1.945
Total Average	52.6	1.931

Notes: Own calculations from the World Values Survey. Second column: percentage of individuals saying that tax evasion is “never justified”. Third column: mean of the degree of tax morale, scale from 0 to 3, where 3 means the highest tax morale.

III. EMPIRICAL EVIDENCE

1. Empirical Evidence from Costa Rica

In order to account for factors that influence tax morale, several multiple regressions for each country are conducted. For Costa Rica we are going to work with the Latinobarómetro and are going to test the following hypothesis:

Hypothesis 1: Tax morale decreases if people notice that tax evasion is common. On the other hand if people believe that others are honest their willingness to pay taxes increases.

If individuals notice that many others evade taxes, their intrinsic motivation to comply with taxes decreases. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic and the moral costs of evading taxes decrease.

Table 5 presents the results. In different equations we are going to integrate the following two variables to check our hypothesis: TRUST THAT PEOPLE OBEY THE LAW⁴ and AVOID PAYING TAXES⁵. *Table 5* indicates that the hypothesis cannot be rejected. An increase in the scale of the variable PEOPLE OBEY THE LAW (AVOID PAYING TAXES) increases (reduces) the share of individuals arguing that tax avoidance is never justifiable by more than 7 percentage points.

Looking at the control variables we can observe that the proportion of persons of the age 65+ who report the highest tax morale is more than 26 percentage points higher than for the reference age group. It is interesting to notice the low tax morale of people salaried in a public company. Individuals salaried in a private company, people in charge of a household and students report a significantly higher tax morale than individuals salaried in a public company.

In Eq. 4 we check if the main variables are robust integrating a proxy for socio-economic status⁶. The results indicate that the main variables remain significant. Furthermore, the coefficient of the variable economic status shows a significant positive correlation. Thus, a higher socio-economic status leads to a higher tax morale.

⁴ The following question has been asked: "In general, would you say that people always obey the law, or are there exceptions or particular occasions when people can follow their consciences even if it means breaking the law" (1= Always obey the law, 0= follow their consciences).

⁵ Could you tell me if recently you have known someone or have heard someone you know comment about somebody who has: Managed to avoid paying all his taxes (1=yes, 0=no).

⁶ Socio-economic status (4=very good, 1=very bad).

Table 5
Determinants of Tax Morale in Costa Rica in 1998

Weighted Ordered Probit	Eq. 1		Eq. 2		Eq. 3		Eq. 4	
Variable	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.
a) Demographic Factors								
AGE 30-49	0.063	0.024	0.099	0.037	0.089	0.033	0.103	0.038
AGE 50-64	0.232	0.087	0.258	0.097	0.258	0.097	0.264	0.099
AGE 65+	0.632***	0.236	0.637***	0.239	0.665***	0.249	0.738***	0.276
FEMALE	0.004	0.002	0.019	0.007	-0.027	-0.010	-0.040	-0.015
b) Marital Status								
MARRIED/LIVING TOGETHER	-0.080	-0.030	-0.094*	-0.035	-0.106	-0.040	-0.167	-0.063
DIVORCED/WIDOWED	-0.275	-0.103	-0.335	-0.126	-0.375*	-0.141	-0.456**	-0.171
c) Employment Status								
SELFEMPLOYED	0.238	0.089	0.202	0.076	0.189	0.071	0.191	0.071
SALARIED IN A PRIVATE COMPANY	0.530***	0.198	0.511***	0.192	0.510***	0.191	0.505***	0.189
UNEMPLOYED	0.226	0.085	0.096	0.036	0.002	0.001	-0.017	-0.006
RETIRED	0.253	0.198	0.310	0.116	0.292	0.110	0.306	0.115
IN CHARGE OF HOUSEHOLD	0.545***	0.085	0.560***	0.210	0.529	0.198	0.555***	0.207
STUDENT	0.477***	0.178	0.488***	0.183	0.414	0.155	0.364	0.136
g) Further Variables								
TRUST THAT PEOPLE OBEY THE LAW			0.204*	0.077	0.208*	0.078	0.236**	0.088
AVOID PAYING TAXES					-0.206*	-0.077	-0.219*	-0.082
STATUS							0.156**	0.058
Observations	648		604		585		581	
Prob(LM-statistic)	0.001		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, SALARIED IN A PUBLIC COMPANY. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

2. Empirical Evidence from Switzerland

With the Latinobarómetro we have analysed the effects of *internal social norms* on tax morale. Now we are going to check with the World Values Survey (WVS) whether *external social norms* have also an impact on tax morale. We are going to focus on the following two variables: TRUST IN GOVERNMENT and TRUST IN LEGAL SYSTEM.

Table 6
Determinants of Tax Morale in Switzerland 1996

<i>Weighted Ordered Probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Variable</i>	<i>Coeff.</i>	<i>Marg.</i>								
<i>a) Demographic Factors</i>										
AGE 30-49	-0.007	-0.003	-0.008	-0.003	-0.002	-0.007	0.006	0.002	0.032	0.013
AGE 50-64	0.311***	0.124	0.292***	0.116	0.324***	0.129	0.298***	0.118	0.350***	0.139
AGE 65+	0.233	0.093	0.128	0.051	0.207	0.082	0.153	0.061	0.252	0.100
FEMALE	0.208***	0.083	0.165**	0.066	0.193***	0.077	0.167***	0.066	0.197**	0.078
EDUCATION	-0.011	-0.005	-0.040**	-0.016	-0.023	-0.009	-0.040	-0.016	-0.023**	-0.009
<i>b) Marital Status</i>										
MARRIED	0.232**	0.092	0.223**	0.089	0.226**	0.09	0.184*	0.073	0.175*	0.070
LIVING TOGETHER	-0.102	-0.041	-0.088	-0.035	-0.117	-0.046	-0.101	-0.040	-0.140	-0.056
DIVORCED	0.228*	0.091	0.236*	0.094	0.237*	0.094	0.178	0.071	0.172	0.068
SEPARATED	0.272	0.108	0.306	0.121	0.243	0.097	0.262	0.104	0.254	0.101
WIDOWED	-0.135	-0.054	-0.132	-0.052	-0.144	-0.057	-0.153	-0.061	-0.174	-0.069
<i>c) Employment Status</i>										
PART TIME EMPLOYED	0.225**	0.089	0.244**	0.097	0.237**	0.094	0.265**	0.105	0.245**	0.098
SELFEMPLOYED	0.103	0.041	0.067	0.026	0.103	0.041	0.045	0.018	0.075	0.030
UNEMPLOYED	0.104	0.041	0.108	0.043	0.075	0.030	0.132	0.053	0.083	0.033
AT HOME	0.355***	0.141	0.361***	0.143	0.334***	0.133	0.340***	0.135	0.310***	0.123
STUDENT	-0.033	-0.013	-0.126	-0.050	-0.056	-0.022	-0.040	-0.016	0.019	0.008
RETIRED	0.688***	0.273	0.724***	0.288	0.711***	0.282	0.686***	0.272	0.666***	0.265
OTHER	0.132	0.053	0.238	0.095	0.178	0.071	0.296	0.118	0.233	0.093
<i>d) Economic Situation</i>										
UPPER CLASS							0.000	0.000	0.033	0.013
UPPER MIDDLE CLASS							-0.154	-0.061	-0.101	-0.040
LOWER MIDDLE CLASS							-0.118	-0.047	-0.079	-0.031
WORKING CLASS							-0.139	-0.055	-0.104	-0.041
<i>e) Trust</i>										
TRUST IN GOVERNMENT			0.216***	0.086			0.226**	0.090		
TRUST IN THE LEGAL SYSTEM					0.085**	0.034			0.083***	0.033
Observations	1148		1105		1122		1055		1068	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, LOWER CLASS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

In further estimations we are going to control for the economic situation. *Table 6* presents the results. In all estimations both trust variables have a significantly positive effect on tax morale. An increase in the trust in government (legal system) by one unit raises the share of

persons indicating the highest tax morale by more than 8 (3) percentage points. Looking at the control variables we can observe that people at the age of 50-64 have a significantly higher tax morale than the reference group. As in Costa Rica a higher age seems to have a positive impact on tax morale. People at home have also a relatively high tax morale. Contrary to Costa Rica, females have a significantly higher tax morale than males and married people have a higher tax morale than singles.

IV. EXPERIMENTAL EVIDENCE

1. Design and Hypotheses

Researchers in tax compliance literature have just started to conduct cross-culture experiments. Laboratory experiments have the advantage of holding the tax reporting institutions constant, in order to investigate compliance behaviour across various cultural settings. Cummings, Martinez-Vazquez and McKee (2001) found cultural differences between U.S., South Africa, and Botswana, and Alm, Sanchez, and De Juan (1995) between Spain and the United States. Novel in our experiment is the comparison between a stable Latin American country and a European country as Switzerland. We have chosen to design an experiment that analyses governments' efficiency.

The subjects who participated in our experiment are volunteering students, postdoctoral students and staff members from the University of Basel in Switzerland (52 subjects) and from the University Fidélitas in San José (28 subjects). The design is close to the one done by Torgler (2002). The experiment lasted about an hour and they earned in Switzerland between 7 and 20\$ and in Costa Rica between 5 and 15\$ depending on the amount of money they accumulated at the end of the experiment which went 23 rounds. To improve the robustness of the results, the experiment for the reference experiment (Switzerland) has been done twice. It was not allowed to communicate with each other. We did not use tokens as currency but fictive lab dollars. Compared to Torgler (2002) an additional endogenous audit selection rule has been introduced in the experiment. The audit probability increased from 5% to 10% depending on the amount of non declared income between the present year and the declaration of the year before. In such an experimental design the probability of audit is endogenous, depending on the behaviour of taxpayers throughout the experiment. In line with Torgler (2002) the income distribution was not

exogenously given by the experimenter but attributed endogenously. In a test, participants were confronted with numerical series following certain numerical patterns. Dependent on the results, the students were divided into two income categories (200 lab \$ or 400 lab \$).

In the empirical part we have seen that trust in the government and the legal system has a positive effect on tax morale. Furthermore, the results indicate that tax morale decreases if people notice that tax evasion is common and increases if people believe that others are honest. Similarly, we are going to analyse in the experiment to which extent the recognition of government services has an effect on tax compliance. To design the appreciation of government services and degree of moral constraints, consumers' surplus derived from government's provision of public goods was changed by varying the group's surplus multiplier (0/1/2 and 3) (see Torgler 2002 for theoretical considerations). The resulting amount was then redistributed in equal shares to the members of the group. Group 1 was used as a control group and thus did not receive any redistribution. In general the following hypothesis can be formulated:

Hypothesis 2: Taxpayers who perceive more favourable exchanges will become less distressed will have higher moral costs of tax evasion, and will report more income than taxpayers with less favourable exchanges.

We are going to see if this hypothesis can not be rejected in both countries. If this is the case, we could conclude that the positive effects of a more favourable exchange is robust regarding culture differences.

Novel compared to Torgler (2002) is the fact that in all sessions subjects had to vote on the total amount of tax penalty and after tax, having been given the possibility to discuss this issue with other group members during five minutes after round 15. Up to this time, the tax penalty rate was 2.0 (200%) of the shortfall. The participants had the following options: a) reduce to 100% of the shortfall, b) leave 200%, or c) raise to 300% of the shortfall. The effects of voting on tax compliance has recently been analysed using different sorts of experiments, by Torgler and Schaltegger (2003), Torgler, Schaltegger and Schaffner (2003), Feld and Tyran (2002) and Alm, McClelland and Schulze (1999). In all experiments voting leads to an increase in tax compliance. The voting procedure, especially public discussions prior to votes, creates a sense of civic duty and increases the opportunity set of the subjects which might lead to a higher acceptance after the process. In general, Alm (1996, p. 123) surveying his experimental findings points out:

“I believe that the cheap talk in combination with vote allows individuals to change the social norms, in this case to demonstrate that evasion will not be accepted”.

Furthermore, Alm and Martinez-Vazquez (2001) point out that more participation in the decision process fosters compliance implying a commitment to the institution. Voting affects social norms via participation, legitimising the public sector and thus imposing social norms to pay taxes. Thus, we hypothesize:

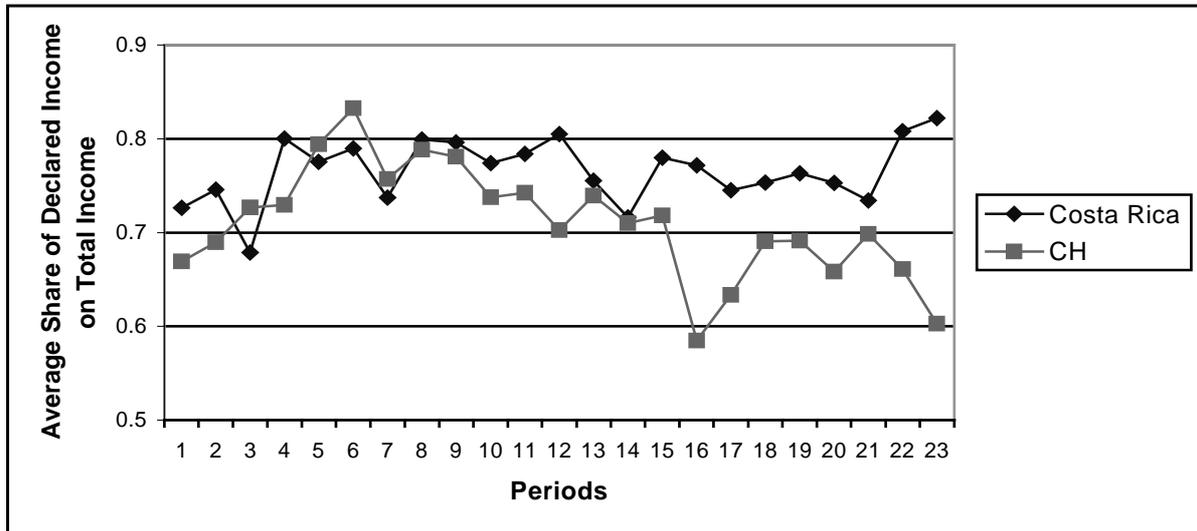
Hypothesis 3: The possibility to decide on the enforcement parameters increases tax compliance.

2. Results

In a first step we are going to evaluate the level of tax compliance in Costa Rica and in Switzerland. As the dependent variable we will use individuals' compliance rate in a given round, measured as the ratio of the reported income to the true income. First, in *Figure 1* we present the average compliance rate across all subjects and groups in any particular round. In a next step we analyse both countries separately using the compliance rate as dependent variable and conduct Tobit maximum likelihood estimations as the rate varies between 0 and 1 with many 0 and 1 values. To include the panel-structure of the data, we additionally include the random-effects models in order to control time-specific effects.

Figure 1 indicates that over time the compliance rate in Costa Rica is mostly higher than in Switzerland. These findings are in line with the results obtained in the empirical part, comparing tax morale in Switzerland for the year 1996 and Costa Rica for the year 1998. After having done a multiple regression in each country separately, we pool the data to check, among other things, whether the differences between both countries are significant, controlling for additional factors.

Figure 1
Tax Compliance Rate Over Time



Results are presented in *Table 7* and the variables are explained in detail in *Table A4* (see *Appendix*). The basic estimation equation reads as follows:

$$CR_{it} = \beta_0 + \beta_1 \cdot DF_{it} + \beta_2 \cdot ES_{it} + \beta_3 \cdot GR_{it} + \beta_4 \cdot VOTE_{it} + \beta_5 \cdot TM_{it} + \beta_6 \cdot SDF_{it} + \varepsilon_{it} \quad (1)$$

where CR_{it} denotes the compliance rate. DF_{it} is a panel of deterrence factors including the number of audits per person and the nominal fine for tax evasion. ES_{it} covers the obtained income in each round and the transfer payment obtained in each period. GR_{it} are the group dummy variables. $VOTE_{it}$ is the dummy variable of interest that differentiates between pre-voting period and post-voting period, TM_{it} measures the degree of tax morale and SDF_{it} is a panel of socio-demographic factors as age, gender, education, marital status, religion and including a dummy variable for being an economist or not.

Looking at the results for Costa Rica we find that individuals in the groups with redistribution factors (2, 3, and 4) have a higher tax compliance. This result suggests that hypothesis 2 cannot be rejected. Favourable exchanges have a positive effect on tax compliance. However, this result is not confirmed by the findings in Switzerland. Only group 3 has a significantly higher tax compliance than the reference group.

Table 7

Determinants of Tax Compliance (Dependent Variable: Tax Compliance Rate)

Tobit	Costa Rica		Switzerland		Pooled Eq. 1		Pooled Eq. 2	
Variables	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.
a) Deterrence Factors (DF)								
audit	-0.159***	-6.663	-0.030	-1.413	-0.125***	-7.036	-0.124***	-6.984
penalty	-0.001**	-1.985	-0.002***	-4.352	-0.002***	-6.091	-0.002***	-6.142
b) Economic Situation (ES)								
income	0.001***	3.745	-5.8E-06	-0.035	2.9E-04**	2.282	3E-04**	2.359
transfers	0.001**	2.192	0.002***	3.745	0.002***	5.158	0.002	5.194
c) Groups (GR)								
Group 2	0.442***	6.287	0.066	1.232	0.020	0.488	0.019	0.476
Group 3	0.409***	5.918	0.302***	3.673	0.159***	2.724	0.157***	2.689
Group 4	0.267***	3.560	0.063	0.608	-0.166**	-2.263	-0.169**	-2.302
d) Participation (VOTE)								
voting	0.130***	4.458	-0.106***	-3.212	0.020	0.696	0.012	0.396
e) Tax Morale								
Tax morale index	0.308***	8.503	0.145***	4.606				
Tax morale (WVS)					0.014**	2.405	0.014**	2.423
f) Socio-Demographic Factors								
age	0.002	0.271	-0.042***	-8.486			-0.003	-1.411
female	0.540***	5.167	0.235***	5.670			0.025***	0.816
education	0.307***	14.342	0.102***	2.964				
married			0.414***	2.777				
living together	0.281**	2.558	0.179***	3.818				
widowed	0.006	0.060						
protestant			-0.055	-1.232				
Jewish	-0.206**	-2.558	0.728***	3.544				
other religion	0.758***	8.731						
no religion	-0.782***	-9.147	-0.065	-1.451				
economist	0.5286***	6.701	-0.321***	-6.856				
g) Culture								
COSTA RICA					0.118***	4.413	0.118***	4.432
Log-likelihood	-164.3		-852.1		-1418.8		-1417.7	
Observations	644		1196		1840		1840	

Notes: Dependent variable: tax compliance rate as the ratio of reported income to true income. In the reference group are GROUP 1, MALE, SINGLE, CATHOLIC, NON ECONOMISTS, SWITZERLAND. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Furthermore, we observe that voting has a significant positive effect on tax compliance. Individuals in Costa Rica are significantly more compliant in the post-voting period after having obtained the possibility to decide on the enforcement parameters. Thus, hypothesis 3 cannot be rejected. People seem to positively value the right to participate. One reason might be that participation produces itself a kind of procedural utility as the opportunity set

increases. Looking at Switzerland, we observe at first glance that voting does not go in line with a higher compliance. However, this positive effect might depend on the extent to which people become aware of the importance to contribute to the public goods. Individuals with a higher group transfer coefficient have a higher incentive to express in the discussion the advantages of a better co-operation. Furthermore, after the discussion the moral costs of not behaving in line with a group opinion has the tendency to increase. Participants could dislike the idea that others suffer of tax evasion as the total yield decays, which leaves less money for redistribution. On the other hand, the advantages of tax evasion might be discussed more intensely in groups with a lower redistribution factor. Individuals than notice that evasion is a commonly accepted practice with reduces the moral costs of behaving dishonestly. Thus, the following hypothesis can be developed:

Hypothesis 4: The positive effect of voting on compliance increases with an increase in the surplus multiplier.

To analyse this hypothesis we build interaction terms between the voting variable and the group dummies. *Table 8* presents the results for Switzerland and the pooled estimations. Hypothesis 4 cannot be rejected. All product terms are highly statistically significant with a positive sign. Thus, there is strong evidence that the effect of voting depends on the level of the surplus multiplier and vice versa.

Tax morale in both experiments had a positive effect on tax compliance. Although it can be criticised that a post-experiment questionnaire could produce biases regarding the link between attitude and behaviour, this result corresponds to other empirical findings. Torgler (2001b, 2003a, 2003b) reports a negative correlation between the size of shadow economy/tax evasion and tax morale. Thus, it seems that there is a connection between attitude and behaviour. To check the robustness of these findings, in the pooled estimation we use another proxy for tax morale based on the WVS, which we used as a dependent variable in the empirical part (see Appendix *Table A4*). Eq. 2 indicates a significant positive correlation between tax compliance and tax morale.

Interestingly, both deterrence factors have a significantly negative effect on tax compliance. This result is in line with Torgler, Schaltegger and Schaffner (2003), using a tax amnesty experiment in Switzerland and Costa Rica, and thus seems to be robust in different cultures. However, the findings contradict the traditional economics-of-crime approach stressing that compliance depends upon enforcement. The results for both countries indicate

that deterrence factors might even crowd out tax compliance. Especially monitoring induces such a negative effect. In both countries a higher income and higher transfers have a positive effect on tax compliance, females report a higher compliance than males, and education has a positive effect on tax compliance. Furthermore, singles seem to have a lower compliance than married people and individuals who live together with a partner. Contrary results can be found for religion and being an economist. Whereas in Costa Rica economists have a higher compliance than the reference group, the contrary result is observed in Switzerland. Furthermore, being Jewish rather than catholic reduces compliance in Costa Rica but increases compliance in Switzerland. In general there is the tendency that people without a religion denomination have a lower compliance than the reference group.

Table 8

Interaction Between Voting and Surplus Multiplier (Switzerland and Pooled)

Tobit	Switzerland		Pooled	
Variables	Coeff.	z-Stat.	Coeff.	z-Stat.
a) Deterrence Factors	included		included	
b) Economic Situation	included		included	
c) Groups				
Group 2	-0.038	-0.608	-0.062	-1.286
Group 3	0.158*	1.819	0.053	0.820
Group4	-0.052	-0.483	-0.257***	-3.144
d) Participation				
voting	-0.350	-5.776	-0.153	-2.896
e) Interaction Voting & Groups				
Group 2 * voting	0.275***	3.396	0.202***	2.876
Group 3 * voting	0.404***	4.493	0.257***	3.403
Group4 * voting	0.344***	3.964	0.214***	2.933
e) Tax Morale	included		included	
f) Socio-Demographic Factors	included		included	
g) Culture				
COSTA RICA			0.118***	4.446
Observations				

Notes: Dependent variable: tax compliance rate as the ratio of reported income to true income. In the reference group are GROUP 1, MALE, SINGLE, CATHOLIC, NON ECONOMISTS, SWITZERLAND. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Finally, looking at the culture difference between Costa Rica and Switzerland we find that the observed difference in the descriptive analysis remains highly significant and corresponds to the empirical findings from the multivariate analysis in the previous section. Thus, it seems that compliance is an accepted mode of behaviour in Costa Rica.

V. CONCLUSIONS

In this paper we have tried to bring more light into the discussion about the effects of social norms on tax compliance and tax morale. Alm (1998) points out that “there is little empirical work on the role of social norm” (p. 34). And Alm and Martinez-Vazquez (2001) argue:

“If individual attitudes toward tax compliance are a function of social norms, tax enforcement policies may have to be designed specifically for the culture in which they will be applied”.

With the data set Latinobarómetro for Costa Rica we found that *internal social norms* have a positive effect on tax morale, measured as the perceptions of other taxpayers’ law obedience and information about other taxpayers’ behaviour regarding tax avoidance. The empirical findings indicate a positive correlation in the first case and a negative one in the second. With the World Values Survey (WVS) we analysed whether *external social norms*, measured as trust in the government and the legal system have positive effects on tax morale. Both variables showed a robust positive correlation. Thus, the survey findings indicated the relevance of social norms on tax morale in two different cultural settings. Looking at the degree of tax morale we observed a higher tax morale in Costa Rica compared to Switzerland. However, it should be noticed that comparisons are not free of biases as the question to measure tax morale was not identical. To better compare the differences between both countries we turned to the use of experimental methods to control extraneous influences holding tax reporting institutions constant. The experimental results indicate that compliance behaviour varies across different cultural settings. We observe a significantly higher tax compliance in Costa Rica compared to Switzerland. Furthermore, the experimental design examined the role of social norms in compliance decision. Voting on tax enforcement issues had a significant positive effect on tax compliance. Building interaction terms showed that the positive effect of voting on tax compliance depends on the degree of fiscal exchange/benefits individuals obtained for the “government”. Interestingly, coercion had not the positive effect

on tax compliance a traditional economic-of-crime approach would predict. There is even a negative correlation between coercion and tax compliance, being audited having a stronger negative effect on tax compliance than the degree of penalties.

Generally, these results are insofar interesting as the government of Costa Rica is reforming the tax system to increase tax revenues. One of the main strategies is to increase the tax burden. As we have observed a relatively high social norm to comply with the taxes, it might be important to take care in these reforms that the “terms of trade” between government activities and taxpayers’ payments be balanced. A lack of satisfaction with these terms of trade might erode the high level of social norms observed in Costa Rica.

APPENDIX

Table A1

Indexes of Economic Freedom 2003 in Latin and Caribbean Countries

Country	Fiscal Burden	Government Intervention	Property Rights	Regulation	Black Market
The Bahamas	1.5	2	1	1	2
Dominican Republic	1.5	1	4	4	3.5
El Salvador	2	2	3	2	3.5
Guatemala	2	1	4	4	4
Paraguay	2	3	4	4	5
Haiti	2	2	5	5	5
Chile	2.5	2	1	3	1.5
Peru	2.5	3	4	4	3.5
Brazil	2.5	3	3	3	3.5
Honduras	2.5	3	3	4	4
Ecuador	2.5	2	4	4	4
Bolivia	3	2	4	4	4.5
Costa Rica	3	2.5	3	3	3
Argentina	3	2	4	3	3.5
Nicaragua	3	3	4	4	4
Venezuela	3	2	4	4	4
Uruguay	3.5	2.5	2	3	3
Trinidad and Tobago	3.5	3	2	3	2.5
Belize	3.5	2	3	3	3
Colombia	3.5	3	4	3	3.5
Barbados	4	2	1	2	2
Panama	4	3	4	3	3.5
Jamaica	4	3	3	3	3
Guyana	4	3	3	4	4
Suriname	4.5	4	3	4	5
Cuba	4.5	4	5	4	5

Source: O'Driscoll, Feulner and O'Grady (2003).

Table A2

Personal Income Tax Rates as Percent of Taxable Income in Latin America and Europe

Countries	1985 or 1986	1991	1997
Latin America			
Argentina	16.5 - 45.0	6.0 - 30.0	6.0 - 33.0
Bolivia	... - 30.0	13 % flat rate	13 % flat rate
Brazil	0.0 - 60.0	10.0 - 25.0	15.0 - 25.0
Chile	0.0 - 57.0	5.0 - 50.0	5.0 - 45.0
Colombia	... - 49.0	5.0 - 30.0	35% flat rate
Costa Rica	5.0 - 50.0	10.0 - 25.0	10.0 - 25.0
Dominican Republic	2.0 - 73.0	3.0 - 70.0	3.0 - 70.0
Ecuador	19.0 - 40.0	10.0 - 25.0	10.0 - 25.0
El Salvador	3.0 - 60.0	10.0 - 50.0	10.0 - 30.0
Guatemala	11.0 - 48.0	4.0 - 34.0	15.0 - 30.0
Honduras	3.0 - 40.0	3.0 - 40.0	9.0 - 40.0
Mexico	3.0 - 55.0	3.0 - 55.0	3.0 - 55.0
Nicaragua	15.0 - 50.0	6.0 - 50.0	10.0 - 30.0
Panama	13.0 - 56.0	2.5 - 56.0	4.0 - 30.0
Paraguay	5.0 - 30.0	0	3.0 - 30.0
Peru	2.0 - 56.0	5.0 - 56.0	15.0 - 30.0
Uruguay	0	0	0.7 - 3.0
Venezuela	12.0 - 45.0	4.5 - 45.0	6.0 - 34.0
Europe			
Austria	21.0 - 62.0	10.0 - 50.0	10.0 - 50.0
Belgium	55.3 - 71.0	25.0 - 55.0	25.0 - 55.0
Denmark	14.4 - 39.6	6.0 - 68.0	60
Finland	38.0 - 51.0	7.0 - 39.0	6.0 - 38.0
France	0.0 - 65.0	5.5 - 56.8	6.0 - 38.0
Germany	21.4 - 54.5	19.0 - 53.0	27.3 - 53.0
Ireland	35.0 - 60.0	30.0 - 53.0	27.0 - 48.0
Italy	12.0 - 62.0	10.0 - 50.0	10.0 - 51.0
Netherlands	16.0 - 72.0	13.0 - 60.0	5.1 - 60.0
Norway	3.0 - 40.0	0.0 - 17.0	9.5 - 28.0
Portugal	50.0 - 70.0	15.0 - 40.0	14.0 - 40.0
Spain	26.4 - 46.0	30.0 - 56.0	28.0 - 56.0
Sweden	4.0 - 20.0	30	30
Switzerland	1.1 - 13.2	1.0 - 13.0	2.0 - 13.0

Source: Shome (1999, p. 5).

Table A3
Indexes of Economic Freedom 2003 in Europe

Country	Fiscal Burden	Government Intervention	Property Rights	Regulation	Black Market
Ireland	3.0	2.0	1.0	2.0	1.5
Iceland	3.0	2.0	1.0	2.0	1.0
Switzerland	3.5	3.0	1.0	3.0	1.0
Luxembourg	4.0	2.0	1.0	2.0	1.0
United Kingdom	4.0	2.0	1.0	2.0	1.5
Finland	4.0	2.0	1.0	2.0	1.0
The Netherlands	4.0	2.0	1.0	3.0	1.0
Canada	4.0	2.5	1.0	2.0	1.0
Norway	4.0	3.0	1.0	3.0	1.0
Spain	4.0	2.5	2.0	3.0	2.0
Portugal	4.0	2.0	2.0	3.0	2.0
Malta	4.0	3.0	1.0	2.0	4.0
Denmark	4.5	3.5	1.0	1.0	1.0
Sweden	4.5	2.5	1.0	3.0	1.0
Austria	4.5	2.0	1.0	3.0	1.5
Germany	4.5	2.0	1.0	3.0	1.5
France	4.5	3.0	2.0	3.0	2.0
Italy	5.0	2.0	2.0	3.0	2.5

Source: O'Driscoll, Feulner and O'Grady (2003).

Table A4
Description of Variables

Variables	Description
compliance rate	ratio of the reported income to the true income.
fortune	individual's accumulated earnings.
audit	number of times a subject has been controlled (adjusted after every audit).
penalty	total penalty amount after detection.
transfers	amount an individual obtains from the group fund at the end of the previous round.
voting	dummy variable (0=pre-voting period, 1=post-voting period).
education	<p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree
Index tax morale	<p>Unweighted average value of the following questions:</p> <ol style="list-style-type: none"> 1. Given present tax burdens, one can hardly blame tax evaders 2. Given the easy availability of opportunities to evade taxes, one can hardly blame tax evaders 3. If in doubt about whether or not to report a certain source of income, I would not report it 4. Since the government get enough taxes, it does not matter that some people evade taxes. 5. Taxes are so heavy that tax evasion is an economic necessity for many to survive. 6. If I receive \$2000 in cash for services rendered, I would not report it. 7. Cheating on taxes is justifiable in light of the unfairness of the tax system 8. Taxes are something which is taken away from me. 9. Since everybody evades taxes, one can hardly be blamed for doing it 10. There is nothing bad about under-reporting taxable income on one's tax return <p>((1=strongly disagree; 2=disagree; 3=neutral; 4=agree, 5=strongly agree)).</p>
Tax morale (WVS)	<p>Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between. Cheating on tax if you have the chance (10=never and 1=always).</p>

REFERENCES

- Alm, J. (1996). Explaining Tax Compliance, in: S. Pozo (ed.), *Exploring the Underground Economy*. Kalamazoo W. E. Upjohn Institute for Employment Research: 103-128.
- Alm, J. (1998). Tax Compliance and Administration, Working Paper, University of Colorado at Boulder.
- Alm, J. and J. Martinez-Vazquez (2001). Societal Institutions and Tax Evasion in Developing and Transitional Countries, Public Finance in Developing and Transition Countries: Conference in Honor of Richard Bird, Atlanta, Georgia, April 4 – April 6, 2001.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Alm J., I. Sanchez and A. De Juan (1995). Economic and Noneconomic Factors in Tax Compliance, *KYKLOS*. 48: 3-18.
- Arroyo, A. (2002a). Proyecto ley de contingencia fiscal, Tax&Legal news, October 2002.
- Arroyo, A. (2002b). Nuevo impuesto de salida de Costa Rica, Tax&Legal news, October 2002.
- Cummings, R. G., J. Martinez-Vazquez and M. McKee (2001). Cross Cultural Comparisons of Tax Compliance Behavior, Working Paper No. 01-03. George State University. School of Policy Studies.
- Feld, L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Frey, B. S. and L. P. Feld (2002). Deterrence and Morale in Taxation: An Empirical Analysis, CESifo Working Paper No. 760.
- Gwartney, J. and R. Lawson (1997). *Economic Freedom of the World*. Vancouver : Fraser Institute.
- OECD (2002). *Revenue Statistics 1965-2001*. Paris: OECD.
- O'Driscoll Gerald P., Jr., E. J. Feulner and M. A. O'Grady (2003). 2003 *Index of Economic Freedom*. Heritage Foundation (available: <http://www.heritage.org/research/features/index/>).
- Schneider, F. (2002). The Size and Development of the Shadow Economies and Shadow Economy Labor Force of 16 Central and South American and 21 OECD Countries: First Results for the 90s, Working Paper, Johannes Kepler University of Linz.
- Schneider, F. and D. Enste (2000). Shadow Economies: Size, Causes, and Consequences, *Journal of Economic Literature*. 38: 77-114.
- Shome, P. (1999). Taxation in Latin America: Structural Trends and Impact of Administration, IMF Working Paper No. 99/19, International Monetary Fund.
- Slotsky, J. G. and A. WoldeMariam (2002). Central American Tax Reform: Trends and Possibilities, IMF Working Paper, 02/227, International Monetary Fund.
- Torgler, B. (2001a). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.

- Torgler, B. (2001b). Is Tax Evasion Never Justifiable?, *Journal of Public Finance and Public Choice*. 20: 143-168.
- Torgler, B. (2002). Vertical and Exchange Equity in a Tax Morale Experiment, WWZ-Discussion Paper 02/02, Basel: WWZ.
- Torgler, B. (2003a). Tax Morale and Tax Evasion. Evidence from the United States, WWZ-Discussion Paper 03/01, Basel: WWZ.
- Torgler, B. (2003b). Tax Morale in Latin America, WWZ-Discussion Paper 03/03, Basel: WWZ.
- Torgler, B. and C. A. Schaltegger (2003). Tax Amnesty and Political Participation, WWZ-Discussion Paper 03/07, Basel: WWZ.
- Torgler, B., C. A. Schaltegger and M. Schaffner (2003). Is Forgiveness Divine? A Cross-Culture Comparison of Tax Amnesties, forthcoming in: *Swiss Journal of Economics and Statistics*.

CHAPTER XVIII

PREACHING MATTERS:

TAX MORALE AND RELIGIOSITY*

ABSTRACT

The intention of this paper is to analyse religiosity as a potential factor that affects tax morale. For this purpose, a bivariate analysis has been made in more than 40 countries, and a multivariate analysis for the United States, West Germany, Canada and Great Britain with data from the World Values Surveys has been done. The analyses suggest that religiosity raises tax morale.

JEL classification: H260, H730, K420

Keywords: tax morale; tax compliance; religiosity

* Revised version of the paper: Benno Torgler (2002). Preaching Matters: Tax Morale and Religiosity, WWZ-Discussion Paper 02/03, Basel: WWZ.

I. INTRODUCTION

This study has the aim to analyse religiosity as a potential factor that affects taxpayers' tax morale. According to the author's knowledge there are only two papers which examine religiosity's effect on tax cheating (Tittle 1980, Grasmick et al. 1991). Grasmick et al. (1991) used data collected from the annual Oklahoma City Survey in spring 1989 with a random sample of 330 adults. In our analysis we are going to use the World Values Surveys (1991-1993 and 1995-1997). Compared to Grasmick et al. (1991) our analysis has a higher sample size and more control variables. Furthermore, in a descriptive analysis we are going to check the correlation between tax morale and religiosity in more than forty countries. In a multivariate analysis we compare four countries: the U.S., West Germany¹, Canada and Great Britain. Thus, this paper is a contribution to expand the focus and to compare different countries. The empirical findings indicate that religiosity in all countries has a significant positive effect on tax morale, even if other determinants as demographic and economic factors are controlled for. Before starting with the descriptive (Section III) and the multivariate analysis (Section IV), Section II introduces into the economics of religiosity and argues that religiosity works as a constraint on individual behaviour.

II. RELIGIOSITY AS A CONSTRAINT ON INDIVIDUAL BEHAVIOUR

There are many behavioural norms as, for example, moral constraints which are not formally laid down, but are crucially influenced by religious motivations. North (1981) uses the terminus ideology to refer to a system of internalised constraints which influences individuals' behaviour. He points out:

“Their myopic vision has prevented neoclassical economists from seeing that even with a constant set of rules, detection procedures, and penalties there is immense variation in the degree to which individual behavior is constrained” (p. 47).

Adam Smith in his *Theory of Moral Sentiments* analysed religiosity from a rational point of view and noted that religiosity acts as a kind of internal moral enforcement mechanism (for a

¹ The World Values Surveys (1981-1997) divide Germany into West Germany and East Germany.

broad discussion see Anderson 1988). Such an opinion is contrary to the one emerged in the 19th century and strongly present in the 20th century, for example, in the works of Freud (1927)² and Davis (1947) who see religion as non-rational or even irrational (see Stark et al. 1996). Religious behaviour results from religious beliefs which are shaped by benefit and cost considerations (see Hardin 1997).

New research movements are in the line of Adam Smith and use the notion of rationality to address ethical capabilities of rational human behaviour (see, e.g., van Staveren 2001, Iannaccone 1998). Religion can be seen as a moral commitment to acting in a systematic way. As Sen 1977 states, commitment

“drives a wedge between personal choice and personal welfare” (p. 329).

Van Staveren (2001) argues that commitment to values shared within a community can provide an explanation for unselfish behaviour, since the motive resides in the value itself. Sen (1992) brings an example in which a man stops to fight, even if he gets hurt in doing so. Such a behaviour can be judged as rational. Stopping the fight can be interpreted as an action motivated by his values, acting on the basis of a commitment, for example, to a peaceful conflict resolution (see van Staveren 2001).

Previous works used the economic instruments in non-market areas were based on given preferences (see Becker 1981). However, today many economists argue that individuals' preferences are not to be taken as given. Mueller (2001), e.g., points out:

“If preferences are truly exogenous, and all individual choices are attempts by rational actors to maximize their utilities, it is difficult to understand why individuals in northern Germany overwhelmingly choose to be Protestants, while southern Germans opt to be Roman Catholics; why Italy is overwhelmingly Roman Catholic, while neighboring Greece is overwhelmingly Greek Orthodox” (p. 161).

According to Mueller religious instructions are able to shape individual preferences, so that a particular religion is favoured. Networks of people as the family or the colleagues can influence the decision making of a person. Someone invests in a set of positively valued social relations by conforming to the norms and the behaviour of such a network. To act

² Freud uses words as “neurosis”, “illusion”, “poison” to diagnose religion (p. 8).

conformly and thus imitate the behaviour can enforce the acceptance inside such a group (see Smith, Sawkins and Seaman 1998).

Hardin (1997) develops an economic theory of knowledge. Such a theory focuses on the way people come to hold their beliefs. He demonstrates how belief might change. One way is a reduction of cognitive dissonance:

“Suppose I am in a community of people who believe *x* and who generally support those who seem to believe *x* and to shun those who do not. I might see it as in my interest now to profess belief *x* even though I do not actually believe it. I thereby enjoy the camaraderie of my group.

Now, as a result of my participation in the life of the group, I hear many things that actually support the belief that I merely pretend to have. After some – perhaps long – time, I may begin to have difficulty separating various things I seemingly know from the belief *x*, which begins to be reinforced by this growing body of related knowledge” (p. 266).

Thus, Hardin (1997) notes that preferences might change without leaving the area of rational choice. New knowledge is acquired because it is more comfortable when someone is accepted rather than excluded from its various activities. From this point, there is no reason for human beings to be irreligious. Religious organisations provide moral constitutions for a society. Religion provides a certain level of enforcement to act in the lines of accepted rules and acts as a “supernatural police” (Anderson and Tollison 1992).

Similar to habits, religiosity has the function to economise and simplify our actions³. It makes our social life more predictable and provides a sense of security to counteract the anxiety associated with uncertainty (Heiner 1983). Religiosity settles habits of thoughts common to all individuals. As a consequence, transaction and enforcement costs decrease. Confucius, for example, emphasised the importance of ritual in creating harmonious, predictable human behaviour already 2500 years ago.

Religious behaviour can be socially enforced with quasi-moral judgements and sanctions. Hull and Bold (1994) analyse the role of religious organisations in encouraging the production of social goods as moral behaviour which we can, for example, find in the Ten Commandments. The relative costs for religious inputs to produce social goods are quite low. The demand side is influenced by the culture’s complexity. In complex communities, individuals are less able to recognise social costs of misbehaviour and individual gain from proper behaviour is lower than in a small society group. The authors state that religion has a

³ For a treatment of habits see Twomey (1999).

comparative advantage in producing or encouraging social goods in large cultures of intermediate complexity, where the central government is too weak to enforce property rights. Such a strategy attracts members and this helps a church to prosper and survive. One church “institution” to promote compliance and to punish misbehaviour is the afterlife doctrine:

“Heaven rewards desirable behavior and hell increases the expected cost of misbehavior, causing an increase in enforcement effectiveness” (Hull and Bold 1994, p. 449).

Margolis (1997) analysed the question why morality and religiosity are tied together. Religiosity includes the belief about the right behaviour. He argues that the right behaviour has two components:

“Right behavior in the sense of proper performance or rituals honoring what is sacred in the society and hence serving also to bind the society together; and right behavior in the secular sense of what is fair and just” (p. 247).

According to Hirschi and Stark (1969) religion might inhibit illegal behaviour because religion is a sanctioning system that legitimises and reinforces social values. Empirical studies have shown that states and counties with higher rates of religious memberships have significantly lower violent and non-violent crime (see, e.g., Hull 2000, Hull and Bold 1989 and Lipford, McCormick and Tollison 1993).

Grasmick et al. (1991) argue that there are other agents than the State to threaten violators. They argue that agents in the near surroundings restrict the possibility set or reduce crime’s expected utility by informal and “interpersonal sanctions” (e.g., loss of respect). They state:

“While embarrassment’s most immediate consequence probably is physiological discomfort, more long-term consequences include loss of valued relationships and perhaps restricted opportunities to achieve other valued goals” (p. 253).

III. EMPIRICAL FINDINGS

The data that we use come from the World Values Survey (WVS, 1990-1993 and 1995-1997). To compare different countries, we assessed for each country how many individuals had the opinion that cheating is never justified. First of all, in a descriptive analysis we show how individuals from more than 40 countries responded to this question, dividing the answers into the different religion denominations. Furthermore, we analyse the correlation between religiosity and tax morale.

1. Descriptive Statistics

In order to present a descriptive cross-cultural comparison, the responses are dichotomised, listing up only the percentage ranking “never justified”. To reduce loss of information, we consider individual respondent information at the micro level for each country. First our analysis focuses on a simple correlation between tax evasion and religion. A more sophisticated data analysis, investigating more variables in a multiple regression analysis, is the subject in subsection three.

The descriptive analysis is based on the World Values Survey 1990-1993 because compared to the World Values Survey 1995-1997 more European countries are included. The countries in *Table 1* are ranked based on the Gross National Product per capita, from the poorest to the richest country, according to the evaluation of the World Development Report (1993).

In *Table 1*, the first figure in each country is the amount of people, the second one is the percentage of individuals who evaluate tax evasion as “never justified”. Only countries with a certain diversion of religion denominations as, e.g., the United States, Canada, Great Britain, the Netherlands, Switzerland or West Germany help to get a first impression of tax morale in different religions. Generally, what can be observed in almost all cases is that people without a religion denomination are less likely to argue that tax evasion is never justified than individuals with a denomination. This could indicate that religion might be a restriction in deciding whether to evade or not.

Table 1
Religion and Tax Morale (WVS, 1990-1993 and 1995-1997)

country	No Religion	Roman Catholic	Protestant established	Protestant n. establ.	Jewish	Islamic	Hindu	Buddhist	Others	Total
India	6 100%	14 93.3%	16 94.1%	14 77.8%		193 85%	1673 83.7%	5 18.5%	27 75%	1953 83.1%
Nigeria	15 60%	72 67.9%	67 65.7%	61 71.8%		62 51.2%			28 70%	306 63.8%
China	887 78.4%	3 75 %		2 100 %		18 94.7%		7 63.6%	4 80%	921 78.5%
Romania	35 54.7%	19 76%	6 60%	20 71.4%		1 50%			656 68.4%	737 67.7%
Turkey ^g	24 75%	7 100%			5 100%	874 90.3%			4 100%	915 90%
Poland		415 48.8%	7 87.5%	6 54.5%				1 100 %	6 66.7 %	448 49.3%
Bulgaria	381 56.4%		2 100%	10 100%		37 57.8%			144 58.5%	579 57.4%
Chile		762 75.4%	9 69.2%	108 77.7%	3 75%		3 75%	1 100%	38 82.6%	1130 75.7%
South Africa ^c	78 52%	116 68.2%	105 65.2%	558 62%	3 60%				144 67.3%	1042 62.4%
Lithuania ^h		331 60.2%	2 100%	1 25%	1 33.3%				26 61.9%	549 57%
Hungary		238 57.9%	74 61.7%	3 100%	1 100%				23 85.2%	548 56.3%
Argentina	107 69%	623 82.8%	14 77.8%	8 72.7%		1 50%	1 100%	2 100%	40 85.1%	797 80.5%
Brazil	96 47.1 %	732 61.6 %	36 67.9%	74 70.5%		1 50 %		3 60%	94 64.3%	1048 60.8%
Mexico	79 33.9%	446 37.9%	12 30.8%	15 42.9%	1 50%			1 100%	1 33.3%	558 37.3%
Belarus		32 50.8%		1 25%			1 100%		94 43.3%	432 44.4%
Russia ⁱ	677 55.4%	323 55.5%	3 100%	1 100%	13 23.6%			3 60%	14 31.8%	1034 53 %
Latvia ^h		93 70.5%	62 69.7%	4 100%	1 33.3%	1 100%			50 55.6%	573 64.4%
Estonia ^h		1 25%	56 78.9%	5 83.3%					26 57.8%	641 64.6%
Portugal	43 33.3%	138 41.8%	1 100%		1 100%				4 57.1%	187 40%
South Korea ^e	323 89%	179 88.6%	240 89.6%					287 91.1%	85 92.4%	1120 89.9%
Ireland ^b	3 42.9%	81 49.1%	1 50%	2 100 %				1 100%		86 49.1%
North Ireland ^b	6 75%	12 50%	15 71.4 %	1 100%			14 66.7%	3 100%	1 100 %	53 66.3%
Slovenia ^f	187 65.4%	486 70.3%				7 43.8%			6 75%	688 68.5%
Spain	130 44.5%	1031 60.6%	2 40%	2 66.7%		1 100%		1 50%	8 80%	1181 58.4%
East Germany	552 63.9%	168 74.3%	165 71.7%		2 100%				4 100%	892 67.2%
Britain	548 46.7%	127 52.5%	659 59.1%	140 67.0%	3 42.9%	3 25%	6 100%	2 66.7%	11 64.7%	1502 53.8%
Italy ^a	165 53.2%	920 55.5%	11 73.3%	3 75%					1 50	1105 55.2%

Netherlands	69 37.9%	45 39.8%	22 52.4%	13 65%		2 75 %	1 100%		8 80%	161 43.2%
Belgium	29 30.2%	70 35.9%	1 100%						1 100%	102 34.7%
Austria	133 55.6%	700 63.5%		62 66%	2 66.7%				5 55.6%	902 62.3%
France	417 39.1 %	820 51.4 %	11 39.7 %			17 58.6%		6 50.0 %	14 60.9 %	1288 46.4 %
Canada	236 52.4%	413 58.9%	303 66.6%	22 66.7%	9 45%	4 66.7%	5 83.3%	1 50%	18 60%	1011 59.2%
United States	248 59.8%	365 64.1%	452 74.5%	128 78.5%	9 25%	1 50%	6 85.7%	2 40%	92 62.6%	1325 66.7%
Iceland		5 100 %	366 55.9%						11 57.9%	389 56%
West Germany	93 28.3%	558 41.4%	548 42.2%						14 58.3%	1216 40.4 %
Denmark		1 100%	78 56.9%						1 58.3%	87 57.6%
Finland	23 34.3 %		198 40.7%	3 42.9%					7 70 %	232 40.3 %
Norway		5 55.6%	440 41.8%	16 84.2%	1 84.2%	1 100%	2 100%	1 100%	11 64.7%	528 43.1%
Sweden ^d		1 16.1%	448 56.6%	4 66.7%					130 56.3%	585 56.4%
Japan ^j	1146 81%	3 77.8%	11 100%	13 100%			2 100.0%	493 83.9 %	59 81.9%	1764 82%
Switzerland	39 40.6%	403 65.8%	361 64.9%		1 33.3%				27 77.1%	838 63.6%

Source: author's calculation from the World Values Survey 1990-1993.

Notes: The countries are ranked based on the Gross National Product per capita, from the poorest to the richest country, according to the evaluation of the World Development Report (1993). No answers or undocumented code are not included in this table. Protestant (established) means the mainline or established protestant church for a given country, Protestant (n. establ.) means non established or fundamentalist Protestant churches. ^a in Italy Protestants are substituted with Jehova's Witnesses; ^b in Ireland and Northern Ireland Hindu and Buddhist are substituted by Presbyterian and Methodist; ^c in South Africa, from left to right: None, Catholic, Anglican, Dutch Reformed, Presbyterian, Lutheran, Other Christian, Islamic; ^d in Sweden: None, Church of Sweden (Lutheran), Catholic, Pentecostal, Swedish Missionary League, Salvation Army, Baptist, Orebro Mission, Evangelical; ^e in South Korea: instead of None and Others, D.K. and Confucian; ^f in Slovenia: instead of Jewish and Buddhist, other Christian and Other; ^g in Turkey, instead of Hindu and Buddhist, Greek Orthodox and Gregorian; ^h in Lithuania, Latvia and Estonia instead of Hindu, Greek Orthodox; ⁱ in Russia: from left to right: None, Russian Orthodox, Baptist, Seven Day Adventist, 50 Days Believer, Old Believer, Catholic, Jewish, Buddhist; ^j in Japan in other, Shinto is also included.

2. Bivariate Analysis

In a further step, the correlation between confession and tax immorality is checked. In *Table 1* we lost information about the scale of those who did sometimes justify tax evasion. Thus, using a continuous variable TAX IMMORALITY (1=never justifiable, 10 always justifiable) helps to consider this information. To analyse religion, we build a dummy variable CONFESSION (1= member of a religious denomination). Furthermore, as people with a religious denomination must not be religious at all, we integrated a religiosity variable developed from the following question in the WVS:

Independently of whether you go to church or not, would you say you are

- 1 A religious person
- 2 Not a religious person
- 3 A convinced atheist

Based on this question, a continuous variable NON RELIGIOUS (values from 1 to 3) is built. This variable tries to capture the extent of individuals' internalised religious convictions (religious identity salience).

In Section II it has been argued that religion or being religious is a restriction to acting illegally. Thus, we predict that CONFESSON is negatively and NON RELIGIOUS positively associated with tax immorality. Furthermore, as people with a religious denomination must not be religious, we predict a higher correlation between TAX IMMORALITY and NON RELIGIOUS than between TAX IMMORALITY and CONFESSON. *Table 2* presents the results. Among respondents from many countries TAX IMMORALITY has a significant negative association with CONFESSON and significantly positively associated with NON RELIGIOUS, with only a few exceptions as, e.g., China, where the percentage of people without a confession is very high (95%). In most cases the correlation coefficients of NON RELIGIOUS are higher than the ones for CONFESSON.

Table 2
Correlation Between Tax Immorality and Religion

		confession		non religious	
TAX IMMORALITY	India	-0.007	(0.721)	0.174**	(0.000)
	Nigeria	-0.059	(0.196)	0.069	(0.134)
	China	-0.035	(0.229)	-0.099**	(0.001)
	Romania	-0.092**	(0.002)	0.107**	(0.000)
	Turkey	-0.094**	(0.003)	0.103**	(0.001)
	Poland			-0.020	(0.560)
	Bulgaria	-0.260	(0.404)	0.016	(0.638)
	Chile			0.011	(0.666)
	South Africa	-0.048*	(0.052)	0.070*	(0.050)
	Lithuania			0.076*	(0.030)
	Hungary			0.091**	(0.050)
	Argentina	-0.113**	(0.000)	0.132**	(0.000)
	Brazil	-0.078**	(0.001)	0.080**	(0.001)
	Mexico	-0.052*	(0.046)	0.053*	(0.045)
	Belarus			-0.079*	(0.027)
	Russia	0.072**	(0.002)	-0.045	(0.054)
	Latvia			0.009	(0.822)
	Estonia			-0.019	(0.572)
	Portugal	-0.091	(0.050)	0.047	(0.317)
	South Korea	-0.017	(0.544)		
	Ireland	-0.110	(0.143)	0.112	(0.138)
	Northern Ireland	0.071	(0.536)	0.123	(0.286)
	Slovenia	-0.097**	(0.002)	0.109**	(0.002)
	Spain	-0.152**	(0.000)	0.171**	(0.000)
	East Germany	-0.086**	(0.002)	0.105**	(0.000)
	Britain	-0.148**	(0.000)	0.237**	(0.000)
	Italy	-0.025	(0.256)	-0.029	(0.212)
	Netherlands	-0.131*	(0.011)	0.105*	(0.045)
	Belgium	-0.088	(0.000)	0.130*	(0.032)
	Austria	-0.092**	(0.000)	0.092**	(0.001)
	France	-0.146**	(0.000)	0.151**	(0.000)
	Canada	-0.109**	(0.000)	0.171**	(0.000)
	United States	-0.081**	(0.000)	0.137**	(0.000)
	Iceland			0.070	(0.067)
West Germany	-0.132**	(0.000)	0.266**	(0.000)	
Denmark			0.042	(0.618)	
Finland	-0.101*	(0.016)	0.184**	(0.000)	
Norway			0.183**	(0.000)	
Sweden			0.093**	(0.004)	
Japan	-0.004	(0.864)	-0.015	(0.525)	
Switzerland	-0.176**	(0.000)	0.205**	(0.000)	

Source: author's calculation from the World Values Survey 1990-1993.

Notes: * Correlation is significant at the 0.05 level. ** significant at the 0.01 level, p-values in parenthesis.

3. *Multivariate Analysis*

Until now, it has only been analysed if there is a correlation between tax immorality and religion/religiosity. However, simple correlations did not per se tell us something about causes and effects. For a deeper analysis, a multivariate regression analysis should be done. Thus, we expand our analysis comparing the following four countries: U.S.A., West Germany, Canada and Great Britain. These countries have been chosen because they have a certain diversion of religious denomination. The data from the first two countries are from the WVS 1995-1997 and the second two from WVS 1990-1993.

As religiosity variable we first take the frequency of church attendance (CHURCH ATTENDANCE). Such a variable is an approximation of how much time individuals devote to religion. It is nearer to the behaviour than, e.g., religious attitudes since church attendance involves ties to others and religious activities might support the norms of a larger community (see Tittle and Welch 1983). Iannaccone (2002) points out that traditional research has neglected the aspect of time people devote to religion. Church attendance is not just another dimension of religiosity:

“Attendance takes time, time that has an opportunity cost because it preempts other activities” (p. 209).

Furthermore, someone’s reputation will be affected and will create a greater likelihood of embarrassment if religiosity implies a strong interaction with “conventional significant others” (see Grasmick et al. 1991). The question from which the variable CHURCH ATTENDANCE is developed has the following wording:

Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never).

A second variable is RELIGIOUS (continuous variable, 1= convinced atheist, 3= religious person). In our analysis, frequency of attending religious services and religious identity are significantly positively correlated (for the U.S. 0.367, West Germany 0.516, Canada 0.493 and Great Britain 0.491 also far beyond the 0.001 significance level). Thus, in other models RELIGIOUS is used as a substitute variable for CHURCH ATTENDANCE. Further models

are also going to include the religious affiliations. The estimation methods used are: weighted least squares and weighted ordered probit. For West Germany no weighting is necessary. As we can see in *Table 3*, the U.S. and the West Germany results are robust regarding the estimation method.

Table 3
Determinants of Tax Morale in the U.S. and West Germany (WVS 1995-1997)

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>Eq. 1</i> U.S. 1995				<i>Eq. 1</i> West Germany 1997			
	<i>weighted least squares</i>		<i>weighted ordered probit</i>		<i>least squares</i>		<i>ordered probit</i>	
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>
a) Demographic Factors								
AGE 30-49	0.015	0.213	0.072	0.997	-0.063	-0.485	-0.069	-0.572
AGE 50-64	0.039	0.354	0.192	1.578	-0.019	-0.104	-0.004	-0.023
AGE 65+	-0.086	-0.582	0.087	0.484	-0.082	-0.303	-0.041	-0.162
FEMALE	0.218***	3.617	0.242***	3.807	0.123	1.160	0.102	1.017
EDUCATION	-0.014	-0.869	0.032**	2.472	-0.076***	-3.490	-0.072***	-3.513
b) Marital Status								
MARRIED	0.230***	2.713	0.348***	4.176	0.338**	2.403	0.328***	2.502
LIVING TOGETHER	-0.048	-0.354	0.130	1.107	0.369**	2.128	0.332**	2.059
DIVORCED	0.193*	1.600	0.268**	2.444	0.352**	1.658	0.356	1.766
SEPARATED	0.242	1.173	0.141	0.703	0.089	0.231	0.068	0.187
WIDOWED	0.300*	1.891	0.570**	2.309	0.257	1.124	0.273	1.265
c) Economic Variables								
INCOME	-0.050***	-3.421	-0.034**	-2.433	-0.053**	-2.190	-0.057**	-2.473
FINANCIAL SATISFACTION	0.058***	4.585	0.067***	6.452	0.046**	2.054	0.049**	2.333
d) Employment Status								
PART TIME EMPLOYED	-0.242**	-2.501	-0.104	-1.067	0.113	0.776	0.106	0.770
SELFEMPLOYED	0.126	0.880	0.050	0.353	-0.096	-0.269	-0.084	-0.255
UNEMPLOYED	0.104	0.881	0.255**	2.019	0.020	0.080	-0.015	-0.062
AT HOME	0.089	0.861	0.128	1.077	-0.060	-0.341	-0.084	-0.513
STUDENT	-0.426**	-2.490	0.169	1.177	-0.211	-1.113	-0.207	-1.159
RETIRED	0.145	1.094	0.108	0.721	0.356	1.684	0.309	1.543
OTHER	-0.133	-0.443	0.193	0.797	-0.034	-0.067	0.085	0.174
e) Religious Variable								
CHURCH ATTENDANCE	0.066***	4.693	0.084***	5.679	0.076***	2.915	0.074***	2.995
Observations	1308		1308		807		807	
R-squared	0.737				0.137			
Prob(F-stat)	0.000				0.001			
Prob(LM stat)			0.000				0.000	

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NOT RISK AVERSE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

The coefficient for church attendance in both countries is highly significant and with a positive sign. Thus, the results seem to confirm our predictions and suggest that religiosity has a positive effect on tax morale and might endorse legal norms.

Table 4
Determinants of Tax Morale in Canada and Great Britain (WVS 1990-1993)

<i>Dependent Variable:</i> <i>Tax Morale</i>	<i>Eq. 1</i> Canada 1990				<i>Eq. 1</i> Great Britain 1990			
	<i>weighted least squares</i>		<i>weighted ordered probit</i>		<i>weighted least squares</i>		<i>weighted ordered probit</i>	
<i>Independent Variables</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>
<i>a) Demographic Factors</i>								
AGE 30-49	0.167**	1.868	0.198**	2.207	0.051	0.456	0.003	0.032
AGE 50-64	0.306***	2.770	0.346***	3.135	0.267**	2.003	0.174*	1.787
AGE 65+	0.206	1.250	0.233	1.356	0.664***	3.422	0.617***	4.387
FEMALE	0.185***	2.611	0.177**	2.501	0.092	0.968	0.121	-1.691
EDUCATION	0.015	1.001	0.008	1.093	0.005	0.272	-0.013*	1.625
<i>b) Marital Status</i>								
MARRIED	0.197**	2.002	0.146	1.529	0.198*	1.694	0.09	1.060
LIVING TOGETHER	0.052	0.393	0.035	0.273	0.276	1.603	0.223*	1.893
DIVORCED	0.044	0.243	0.022	0.106	0.267	1.255	0.108	0.717
SEPARATED	0.352*	1.732	0.358*	1.786	0.024	0.062	0.069	0.275
WIDOWED	0.331**	1.970	0.396**	2.166	0.257	1.449	0.137	1.034
<i>c) Economic Variables</i>								
INCOME	-0.060***	-3.983	-0.061***	-3.724	0.006	0.311	0.006	0.421
FINANCIAL SATISFACTION	0.075***	4.872	0.071***	4.671	0.033**	2.024	0.033***	2.701
<i>d) Employment Status</i>								
PART TIME EMPLOYED	-0.196*	-1.673	-0.135	-1.141	0.321**	2.212	0.279**	2.454
SELFEMPLOYED	-0.036	-0.228	0.027	0.164	-0.025	-0.160	-0.046	-0.395
UNEMPLOYED	-0.042	-0.296	-0.036	-0.266	-0.039	-0.179	-0.043	-0.276
AT HOME	0.050	0.416	0.110	0.811	-0.033	-0.210	-0.041	-0.337
STUDENT	-0.508**	-2.312	-0.393**	-2.047	-0.474	-1.251	-0.322	-0.842
RETIRED	0.056	0.403	0.110	0.772	0.220	1.323	0.255**	1.966
OTHER	0.332	1.251	0.364	1.325	0.082	0.106	-0.137	-0.335
<i>e) Religious Variable</i>								
CHURCH ATTENDANCE	0.051***	3.231	0.046***	2.871	0.099***	4.857	0.110***	6.740
Observations	1405				791			
R-squared	0.212				0.574			
Prob(F-statistic)	0.000				0.000			
Prob(LM statistic)	0.000				0.000			

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 4 shows the findings from Canada and Great Britain. As these countries have not been analysed in the WVS 1995-1997, the data from the WVS 1990-1993 has been used. As we can see, the coefficient of the variable CHURCH ATTENDANCE is positive and highly significant in both countries.

4. Sensitivity Analysis

To check the reliability of the effect of religiosity on tax morale, the variable RELIGIOUS (Eq. 3) and religion denomination variables are included in additional equations (Eq. 2 and Eq. 4). Thus, we analyse if catholics, protestants or people with other confessions⁴ have a higher tax morale than people without a confession (reference group).

Table 5 to *8* presents the results for all for countries. RELIGIOUS similar to CHURCH ATTENDANCE significantly increases tax morale in all countries. On the other hand, the coefficients of the confession variables are not significant in all countries. This may indicate that it is not confession that increases tax morale and acts as a behavioural constraint possibly inhibiting illegal behaviour, but religiosity.

⁴ The variable OTHER RELIGION is an aggregation of all the other religion denominations presented in *Table 1*.

Table 5
Different Estimation Equations for the United States 1995

U.S.	weighted least squares			weighted ordered probit		
Dependent V.: Tax Morale	(2)	(3)	(4)	(2)	(3)	(4)
Independent Variables						
<i>a) Demographic Factors</i>						
AGE 30-49	0.002	-0.002	-0.015	0.053	0.014	0.002
AGE 50-64	0.012	0.002	-0.027	0.172	0.154	0.135
AGE 65+	-0.124	-0.084	-0.127	0.066	0.045	0.023
FEMALE	0.210***	0.252***	0.237***	0.230***	0.227***	0.212***
EDUCATION	-0.015	-0.016	-0.018	0.028**	0.006	0.005
<i>b) Marital Status</i>						
MARRIED	0.245***	0.261***	0.254***	0.340***	0.341***	0.327***
LIVING TOGETHER	-0.04	-0.052	-0.021	0.097	-0.069	-0.062
DIVORCED	0.231**	0.19	0.234*	0.278**	0.183	0.208
SEPARATED	0.287	0.277	0.285	0.096	0.138	0.083
WIDOWED	0.333**	0.390**	0.390**	0.560**	0.563**	0.542**
<i>c) Economic Variables</i>						
INCOME	-0.046***	-0.031**	-0.029*	-0.032**	-0.044***	-0.041***
FINANCIAL SATISFACTION	0.054***	0.061***	0.059***	0.066***	0.054***	0.054***
<i>d) Employment Status</i>						
PART TIME EMPLOYED	-0.184*	-0.245**	-0.199**	-0.101	-0.152*	-0.146*
SELFEMPLOYED	0.11	0.106	0.104	0.02	0.009	-0.013
UNEMPLOYED	0.106	0.119	0.117	0.253**	0.129	0.147
AT HOME	0.091	0.1	0.106	0.127	0.09	0.094
STUDENT	-0.397**	0.05	0.049	0.185	0.111	0.131
RETIRED	0.15	0.154	0.168	0.104	0.03	0.04
OTHER	-0.18	-0.153	-0.177	0.178	-0.006	0.012
<i>e) Religious Variable</i>						
CHURCH ATTENDANCE	0.045***			0.065***		
CATHOLIC	0.164*		0.215**	0.062		0.18
PROTESTANT	0.168**		0.184**	0.188**		0.113***
OTHER RELIGION	0.295***		0.338***	0.304***		0.245***
RELIGIOUS		0.155**	0.098		0.285***	0.233***
R-squared	0.74	0.74	0.744			
Prob(F-statistic)	0	0	0			
Prob(LM statistic)				0	0	0

Notes: Coefficients with significance levels. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 6
Different Estimation Equations for West Germany 1997

West Germany	least squares			ordered probit		
Dependent V.: Tax Morale	(2)	(3)	(4)	(2)	(3)	(4)
Independent Variables						
a) Demographic Factors						
AGE 30-49	-0.099	-0.060	-0.064	-0.105	-0.063	-0.070
AGE 50-64	0.019	0.024	0.042	0.017	0.034	0.046
AGE 65+	-0.015	-0.032	-0.004	0.006	-0.008	0.015
FEMALE	0.143	0.140	0.161	0.124	0.119	0.141
EDUCATION	-0.082***	-0.073***	-0.070***	-0.076***	-0.068***	-0.066***
b) Marital Status						
MARRIED	0.382***	0.421***	0.421***	0.368***	0.406***	0.408***
LIVING TOGETHER	0.362**	0.360**	0.351**	0.329**	0.330**	0.326**
DIVORCED	0.343*	0.399*	0.379*	0.330*	0.384*	0.368*
SEPARATED	-0.258	0.082	-0.119	-0.238	0.081	-0.104
WIDOWED	0.297	0.302	0.302	0.305	0.288	0.298
c) Economic Variables						
INCOME	-0.047**	-0.047**	-0.047**	-0.050**	-0.052**	-0.052**
FINANCIAL SATISFACTION	0.042*	0.045**	0.048**	0.042**	0.045**	0.047**
d) Employment Status						
PART TIME EMPLOYED	0.020	0.004	0.010	0.014	0.005	0.011
SELFEMPLOYED	-0.304	-0.314	-0.354	-0.275	-0.287	-0.310
UNEMPLOYED	0.024	0.111	0.161	-0.019	0.066	0.114
AT HOME	-0.100	-0.074	-0.061	-0.124	-0.095	-0.083
STUDENT	-0.276	-0.267	-0.261	-0.276	-0.262	-0.251
RETIRED	0.319	0.339	0.340	0.285	0.302	0.303
OTHER	0.008	0.056	0.023	0.127	0.146	0.137
e) Religious Variable						
CHURCH ATTENDANCE	0.092***			0.088***		
CATHOLIC	-0.128		-0.105	-0.11		-0.088
PROTESTANT	-0.147		-0.155	-0.135		-0.140
OTHER RELIGION	0.063		0.205	0.029		0.165
RELIGIOUS		0.194***	0.225***		0.190***	0.218***
R-squared	0.126	0.194	0.126			
Prob(F-statistic)	0.000	0.000	0.000			
Prob(LM statistic)				0.000	0.000	0.000

Notes: Coefficients with significance levels. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 7
Different Estimation Equations for Canada 1990

Canada	weighted least squares			weighted ordered probit		
Dependent V.: Tax Morale	(2)	(3)	(4)	(2)	(3)	(4)
Independent Variables						
a) Demographic Factors						
AGE 30-49	0.171**	0.178**	0.181**	0.202**	0.177*	0.179**
AGE 50-64	0.296***	0.326***	0.316***	0.337***	0.324*	0.316***
AGE 65+	0.196	0.258	0.249	0.219	0.256	0.247
FEMALE	0.183**	0.180**	0.179**	0.179**	0.174*	0.178**
EDUCATION	0.014	0.016	0.014	0.007	-0.006	-0.007
b) Marital Status						
MARRIED	0.190**	0.181*	0.177*	0.142	0.13	0.127
LIVING TOGETHER	0.062	0.057	0.067	0.054	-0.002	0.015
DIVORCED	0.039	-0.007	-0.015	0.016	-0.031	-0.037
SEPARATED	0.356*	0.333	0.339	0.363*	0.306	0.311
WIDOWED	0.326**	0.314	0.311*	0.393**	0.36	0.355**
c) Economic Variables						
INCOME	-0.061***	-0.058***	-0.058***	-0.063***	-0.059*	-0.061***
FINANCIAL SATISFACTION	0.074***	0.073***	0.073***	0.074***	0.066**	0.069***
d) Employment Status						
PART TIME EMPLOYED	-0.191	-0.152	-0.148	-0.131	-0.124	-0.119
SELFEMPLOYED	-0.03	0.011	0.017	-0.018	0.025	0.016
UNEMPLOYED	-0.051	-0.046	-0.056	-0.045	-0.062	-0.072
AT HOME	0.039	0.039	0.027	0.086	0.083	0.066
STUDENT	-0.506**	-0.426*	-0.425**	-0.401**	-0.383	-0.392**
RETIRED	0.041	0.03	0.015	0.09	0.078	0.057
OTHER	0.315	0.224	0.215	0.366	0.341	0.344
e) Religious Variable						
CHURCH ATTENDANCE	0.049***			0.048**		
CATHOLIC	-0.016		-0.07	-0.059		-0.068
PROTESTANT	0.126		0.077	0.122		0.105
OTHER RELIGION	0.106		0.055	0.135		0.132
RELIGIOUS		0.264***	0.277***		0.184***	0.192***
R-squared	0.213	0.213	0.214			
Prob(F-statistic)	0	0	0			
Prob(LM statistic)				0	0	0

Notes: Coefficients with significance levels. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 8
Different Estimation Equations for Great Britain 1990

Great Britain	weighted least squares			weighted ordered probit		
Dependent V.: Tax Morale	(2)	(3)	(4)	(2)	(3)	(4)
Independent Variables						
a) Demographic Factors						
AGE 30-49	0.024	-0.023	-0.03	-0.015	-0.005	-0.014
AGE 50-64	0.233*	0.223	0.202	0.147	0.17	0.147
AGE 65+	0.629***	0.655***	0.613***	0.593***	0.652***	0.622***
FEMALE	0.087	0.131	0.121	0.119	0.151**	0.139
EDUCATION	-0.003	0.029	0.016	-0.015*	-0.017*	-0.017*
b) Marital Status						
MARRIED	0.187	0.179	0.176	0.095	0.074	0.095
LIVING TOGETHER	0.268	0.269	0.284	0.225*	0.149	0.187
DIVORCED	0.275	0.2	0.189	0.125	0.077	0.097
SEPARATED	0.004	-0.085	-0.045	0.06	0.017	0.018
WIDOWED	0.209	0.225	0.201	0.125	0.092	0.103
c) Economic Variables						
INCOME	0.006	0.002	0.002	0.006	0.004	0.003
FINANCIAL SATISFACTION	0.032**	0.037**	0.036**	0.034***	0.033***	0.035***
d) Employment Status						
PART TIME EMPLOYED	0.316**	0.341**	0.337	0.276**	0.287**	0.283**
SELFEMPLOYED	-0.028	-0.044	-0.057	-0.054	-0.063	-0.091
UNEMPLOYED	0.001	-0.006	0.007	-0.001	-0.074	-0.031
AT HOME	-0.036	-0.06	-0.059	-0.036	-0.043	-0.03
STUDENT	-0.545	-0.645*	-0.698*	-0.379	-0.381	-0.448
RETIRED	0.203	0.215	0.209	0.253**	0.195	0.201
OTHER	0.068	0.186	0.166	-0.131	-0.167	-0.144
e) Religious Variable						
CHURCH ATTENDANCE	0.084***			0.101***		
CATHOLIC	-0.111		0.1	-0.096		0.115
PROTESTANT	0.165*		0.214**	0.103		0.216***
OTHER RELIGION	0.312**		0.427***	0.210*		0.405***
RELIGIOUS		0.235***	0.157***		0.153***	0.096*
R-squared	0.577	0.571	0.575	0	0	0
Prob(F-statistic)	0	0	0			
Prob(LM statistic)				0	0	0

Notes: Coefficients with significance levels. Dependent variable: tax morale on a four point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, NO RELIGION. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

IV.CONCLUSION

The basic contribution of this paper is to analyse religiosity as a factor potentially affecting tax morale. With data from the World Values Survey strong evidence has been adduced that religiosity factors exert a systematic influence on tax morale in the United States, West Germany, Canada and Great Britain. This effect tends to persist even after controlling for age, income, education, gender, marital status, employment status in the analysed four countries.

The empirical findings support the relevance of incorporating non-economic factors into the analysis of tax compliance. Tax morale and tax compliance are not just a function of opportunity to evade taxes, tax rates, probability of detection. It might therefore be fruitful to work with models that systematically integrate ideas borrowed from other social sciences. An extension of the economic model of man integrating factors as religiosity opens a new working instrument, without losing simpleness and robustness. Iannaccone (1998) points out:

“The economics of religion will eventually bury two myths – that of homo economicus as a cold creature with neither need nor capacity for piety, and that of homo religious as a benighted throwback to pre-rational times” (p. 1492).

APPENDIX

Table A1
Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always).
CHURCH ATTENDANCE	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never)
RELIGIOUS	Independently of whether you go to church or not, would you say you are 1. A convinced atheist 2. Not a religious person 3. A religious person
INCOME	Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deduction. U.S. 1. None or less than \$4.999 2. \$5.000-9.999 3. \$10.000-14.999 4. \$15.000-19.999 5. \$20.000-24.999 6. \$25.000-29.999 7. \$30.000-39.999 8. \$40.000-49.999 9. \$50.000-74.999 10. 75.000 and over West Germany 1. Below 2.000 DM per month 2. 2.000-2.999 DM 3. 3.000-3.999 DM 4. 4.000-4.499 DM 5. 4.500-4.999 DM 6. 5.000-5.499 DM 7. 5.500-5.999 DM 8. 6.000-6.999 DM 9. 7.000-7.999 DM 10. 8.000 DM and over Canada 1. Under \$10.000 per year 2. \$10.000-14.999 3. \$15.000-19.999 4. \$20.000-24.999 5. 25.000-29.999 6. \$30.000-39.999 7. \$40.000-49.999

	<ol style="list-style-type: none"> 8. \$50.000 and 59.999 9. \$60.000-69.999 10. \$70.000 and over per year <p>Great Britain (annual family income)</p> <ol style="list-style-type: none"> 1. under 2.6000 pounds 2. 2.600-3.499 pounds 3. 3.500-5.499 pounds 4. 5.500-7.999 pounds 5. 8.000-10.499 pounds 6. 10.500-12.499 pounds 7. 13.000-14.999 pounds 8. 15.000-17.999 pounds 9. 18.000-21.999 pounds 10. 22.000 pounds and more
EDUCATION	<p>For the U.S. and West Germany data:</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> 1. No formal education 2. Incomplete primary school 3. Completed primary school 4. Incomplete secondary school: technical/vocational type 5. Complete secondary school: technical/vocational type 6. Incomplete secondary: university-preparatory type 7. Complete secondary: university-preparatory type 8. Some university-level education, without degree 9. University-level education, with degree <p>For Canada and Great Britain:</p> <p>At what age did you or will you complete your full time education, either at school or at an institution of higher education? Please exclude apprenticeships</p> <p>.</p>
FINANCIAL SATISFACTION	<p>How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)</p>

Source: Inglehart et al. (2000).

REFERENCES

- Anderson, G. M. (1988). Mr. Smith and the Preachers: The Economics of Religion in the Wealth of Nations, *Journal of Political Economy*. 96: 1066-1088.
- Anderson, G. M. and R. D. Tollison (1992). Morality and Monopoly: The Constitutional Political Economy of Religious Rules, *CATO Journal*. 13: 373-391.
- Becker, G. S. (1981). Altruism in the Family and Selfishness in the Market Place, *Economica*. 48: 1-15.
- Davis, K. (1949). *Human Society*. New York: Macmillan.
- Freud, S. (1929). *The Future of an Illusion*. Garden City: Doubleday.
- Grasmick, H. G., R. J. Bursik and J. K. Cochran (1991). "Render Unto Caesar What Is Caesar's": Religiosity and Taxpayers' Inclinations to Cheat, *Sociological Quarterly*. 32: 251-266.
- Hardin, R. (1997). The Economics of Religious Belief, *Journal of Institutional and Theoretical Economics*. 153: 259-278.
- Heiner, R. A. (1983). The Origins of Predictable Behavior, *American Economic Review*. 73: 560-595.
- Hirschi, T. and R. Stark (1969). Hellfire and Delinquency, *Social Problems*. 17: 202-213.
- Hull, B. B. (2000). Religion Still Matters, *Journal of Economics*. 26: 35-48.
- Hull, B. B. and F. Bold (1989). Towards an Economic Theory of the Church, *International Journal of Social Economics*. 16: 5-15.
- Hull, B. B. and F. Bold (1994). Hell, Religion, and Cultural Change, *Journal of Institutional and Theoretical Economics*. 150: 447-464.
- Iannaccone, L. R. (1998). Introduction to the Economics of Religion, *Journal of Economic Literature*. 46: 1465-1496.
- Iannaccone, L. R. (2002). A Marriage Made in Heaven? Economic Theory and Religious Studies, in: S. Grossbard-Shechtman and C. Clague (eds.), *The Expansion of Economics*. New York: M.E. Sharpe: 163-193.
- Inglehart, R. et al. (2000). *Codebook for World Values Survey*. Ann Arbor: Institute for Social Research.
- Jain, A. K. (2001). Corruption: A Review, *Journal of Economic Surveys*. 15 : 71-121.
- Lipford, J., R. E. McCormick and R. D. Tollison (1993). Preaching Matters, *Journal of Economic Behavior and Organization*. 21: 235-250.
- Margolis, H. (1997). Religion as Paradigm, *Journal of Institutional and Theoretical Economics*. 153: 242-252.
- Mueller, D. S. (2001). Centralism, Federalism, and the Nature of Individual Preferences, *Constitutional Political Economy*. 12: 161-172.
- Sen, A. (1977). Rational Fools: A Critique of the Behavioural Foundation of Economic Theory, *Philosophy and Public Affairs*. 6: 317-344.

- Sen, A. (1992). *Inequality Reexamined*. Oxford: Blackwell.
- Smith, A. (1976). *Theory of Moral Sentiments*. Oxford: Oxford University Press.
- Smith, I., J. W. Sawkins and P. T. Seaman (1998). The Economics of Religious Participation: A Cross-Country Study, *KYKLOS*. 51: 25-43.
- Stark, R., L. R. Iannaccone, and R. Finke (1996). Linkages Between Economics and Religion, *American Economic Review*. 86: 433-437.
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Tittle, C. and M. Welch (1983). Religiosity and Deviance: Toward a Contingency Theory of Constraining Effects, *Social Forces*. 61: 653-682.
- Twomey, P. J. (1999). Habit, in: P. E. Earl and S. Kemp (eds.), *The Elgar Companion to Consumer Research and Economic Psychology*. Cheltenham, UK: Edward Elgar: 270-275.
- Van Staveren, I. (2001). *The Values of Economics. An Aristotelian Perspective*. London: Routledge.
- World Development Report (1993). *Investing in Health*. Oxford: Oxford University Press.

PART THREE:

TAX POLICY STRATEGIES

Certainly, there is tax evasion, draft evasion, and various other forms of disobedience and even outright resistance; yet it is remarkable the extent to which citizens acquiesce and even actively consent to the demand of governments, well beyond the point explicable by coercion. This is a puzzle for social scientists, particularly those who believe that individuals are self-interested, rational actors who calculate only the private, egoistic costs and benefits of possible choices (p. 2).

Levi, Margaret (1997). *Consent, Dissent, and Patriotism*. Cambridge: Cambridge University Press.

CHAPTER XIX

MORAL SUASION AND TAX COMPLIANCE:

EVIDENCE FROM A CONTROLLED FIELD EXPERIMENT IN SWITZERLAND*

ABSTRACT

This paper analyses in a controlled field experiment in Switzerland the effects of moral suasion on the timely paying and filling out of the tax form 2001, and the honesty regarding the declaration of domestic income from capital gains, lottery winnings, and certain insurance benefits. Comparisons of different tax filling years and multiple regression estimations have been done using these three factors as dependent variables to check if there is a significant difference between the control group and the treatment group, controlling for additional factors that might influence compliance behaviour. In February 2002 the treatment group received a letter signed by the commune fiscal commissioner containing normative appeals. Results indicate that moral suasion has hardly any effect on taxpayers' compliance behaviour. The strongest positive effect can be observed for the variable "timely paying the taxes".

Key words: tax compliance, morale suasion, field experiment

JEL classification: H260, H710

* Benno Torgler (2003). Moral Suasion: An Alternative Tax Policy Strategy? Evidence from a Controlled Field Experiment in Switzerland, WWZ-Discussion Paper 03/05, Basel: WWZ.

I. INTRODUCTION

Tax compliance seems to depend upon numerous factors and is not only affected by deterrence and economic factors (for a survey, see Torgler 2001, 2002a). Many studies have been focussed on the effect of deterrence factors as, e.g., fine and audit rate. Recently, researchers have started to put more weight on letting these deterrence factors constant and analysing to which extent other determinants matter (e.g., Bosco and Mittone 1997). Such studies have worked with experiments. Recently, tax compliance researchers have started to use field experiments to implement “real” actors as the tax authority or taxpayers in their natural situation of filling out the tax form (see Blumenthal, Christian and Slemrod 2001, Slemrod, Blumenthal and Christian 2001). In line with these studies we are going to analyse the effects of moral suasion on tax morale in a controlled field experiment in cooperation with the local tax administration in Trimbach (Canton Solothurn, Switzerland). Section II presents theoretical considerations about the effects of moral suasion on tax morale and tax compliance and gives an overview on the related literature. Section III introduces the design of the field experiment, before the results are presented in Section IV. The paper finishes with some concluding remarks in Section V.

II. MORAL SUASION

Economists are generally sceptical about the effects of moral suasion. We find some studies in the field of monetary or environmental economics. Many years ago, Breton and Wintrobe (1978) analysed the relationship between central and commercial banks. They point out that the techniques of moral suasion

“allow the central and commercial banks to exchange views on the current economic situation and develop a common view of the economy” (p. 214).

And Baumol and Oates (1979) stress that

“voluntary compliance does have several significant and useful roles to play and ... some of our colleagues have been a bit too ready to reject it out of hand” (p. 283).

Experiments can be used to analyse rather undeveloped areas as moral and social sentiments, social norms etc. In the early stages, Schwartz and Orleans (1967) carried out an interesting field experiment. Their approach was to determine the effects of moral appeals and threats of punishment on behavioural compliance with the tax laws. They found that moral appeals had a much stronger influence than punishment threats. These findings were important to focus the attention on different potential compliance factors. However, since then, little work has been done to analyse the relevance of moral appeals. In line with Schwartz and Orleans, McGraw and Scholz (1991) analysed the effects of moral suasion on tax compliance. People watched a video where it was applied to social responsibility. Researchers could not find a larger increase in income reporting compared to the control group.

In the last years researchers in the tax compliance literature show a tendency to stress moral considerations. Andreoni, Erard and Feinstein (1998) argue in their tax compliance survey that adding moral factors to tax compliance models is an undeveloped area, and Erard and Feinstein (1994a) have integrated honesty in a tax compliance model. In Erard and Feinstein (1994b) they formalised the impact of guilt and shame and incorporated it into taxpayers' utility function. Roth, Scholz and Witte (1989) identify moral commitment as important determinants that affect tax compliance. Erard and Feinstein (1994b) point out:

“One important reason why the conventional expected utility model of tax compliance overpredicts the prevalence and extent of tax evasion is that compliance behavior is assumed to be motivated solely by financial considerations, whereas in reality many taxpayers are influenced by a variety of other feelings, which we will call moral sentiments” (p. 74).

If moral sentiments or moral commitments play an important role in the degree of tax compliance, it might be interesting to analyse to which extent moral suasion can influence moral sentiments and thus the degree of co-operation. Surprisingly, tax compliance literature has rarely analysed the effects of moral suasion on tax compliance. What we find is an analysis of the effects of information and complexity on tax compliance (for a survey, see Torgler 2002b). However, there is a lack of economic models incorporating information that do not start from the assumption that individuals have well defined preferences. Even Gary Becker (1996) argues that values can no longer be treated as exogenous preferences and stresses the power of endogenous preferences as an extension of the utility-maximising approach, serving to unify often neglected aspects as habitual, social or political behaviour, addiction, emotions as love and sympathy etc. And Bowles (1998) states:

“If preferences are affected by the policies or institutional arrangements we study, we can neither accurately predict nor coherently evaluate the likely consequences of new policies or institutions without taking account of preference endogeneity” (p. 75).

One policy might be to influence individuals’ preferences using moral suasion. In the political process this instrument is often used. Frey and Kirchgässner (1994) point out that politicians often try to create an anti-inflation-mentality to reduce the expectations about inflation and thus to reduce the costs of disinflation. In general, economists are rather cautious regarding the effects of moral suasion. Frey and Kirchgässner (1994) give two examples (p. 404). In the 70s petrol enterprises, as Shell (e.g., in Switzerland and in the United States, see also Baumol and Oates 1979, p. 289) ran large marketing campaigns for using unleaded gasoline despite its slightly higher price. However, after a short time a drop in sales of unleaded petrol has been observed. Shell’s unleaded gasoline “Shell of the Future” reached only 5 percent of sales (Baumol and Oates 1979). The governor of Oregon used large propaganda expenses as well as his personality to reduce the electricity consumption. After a reduction of two percent in the first month, no reaction was observed in the following months. The authors point out that moral suasion does not work in situations where individuals or institutions such as firms are under strong competitive pressure. Frey and Kirchgässner (1994) are more optimistic about the effects of moral suasion in a state of emergency, as were Baumol and Oates (1979). In many countries moral appeals to the voluntary blood donating in an emergency situation were very successful:

“Happily, experience suggests that, in these instances, circumstances for effective voluntary cooperation are likely to be the most favorable” (Baumol and Oates 1979, p. 283).

De Alessi (1975, p. 127) points out that individuals are more generous toward each others after a disaster. Such a situation shifts the individual utility function toward more “community feeling”. Baumol and Oates (1979) mention two examples from New York City. In September 1970 hospitals had a blood shortage. The response to an urgent appeal for voluntary donations was so high that donors were willing to stand in line up to 90 minutes to donate blood. The appeals during a period of water shortage in the 60s achieved a reduction of water consumption between 4 and 6 percent. Frey (1997) points out that such a behaviour is a manifestation of intrinsic motivation. He states:

“Economists should acknowledge that the motivation structure of individuals is more complex than in their traditional model. Once they accept that behaviour is not solely motivated by extrinsic motivation, they must become aware that their cynicism has considerable cost by damaging environmental moral ... What is proposed is a partial rehabilitation of moral appeals in environmental policy – without giving up incentive instruments” (p. 65).

Baumol and Oates (1979) stress that moral suasion should be used under specific circumstances, otherwise it can undermine voluntarism. It is interesting to notice that India’s tax amnesty 1997 was quite successful (additional revenue of 100 billions of rupees), as the state had engaged two private marketing enterprises to conduct a marketing campaign (based on moral suasion) to increase tax compliance.

However, some researchers have seen the importance of clarifying this topic. Hasseldine (2000) stresses that moral appeals could help to frame tax compliance as a positive act. Blumenthal, Christian and Slemrod (2001) worked together with the Minnesota Department of Revenue and analysed the impact of moral persuasion on voluntary income tax compliance with a field experiment. They used the difference-in-difference approach with data for the tax years 1993 and 1994. Compliance behaviour has been measured by the income reported or the tax paid and was compared with the reference group (no communication). They found that the average compliance rate of those in the treatment group was 220\$ higher compared to the control group (0.08 percent of average income). However, the coefficient was not statistically significant. Thus, this study did not find a significant effect of moral appeals. In a second step, Blumenthal et al. (2001) conducted a multiple regression in which they used the treatments as dummy variables to check other variables. The results indicate that people with greater opportunities to evade or avoid taxes (e.g., self-employees) are less susceptible to normative appeals.

III. FIELD EXPERIMENT DESIGN

1. General Aspects

Tax laws in Switzerland allow citizens to declare their own income and assets and to make generalised deductions. The commune Trimbach has 3497 taxpayers (date January 2003). Out of these individuals, around 580 individuals have been selected randomly before they

were sent the tax form 2001. We divided the people into two groups. The experimental treatment group received a letter just after the tax form (for a copy of this letter, see Appendix). To simulate real effects, taxpayers were not informed that they were part of the experiment.

As the study of Blumenthal, Christian and Slemrod (2001) has focused on the accurate reporting, our analysis looks at two other compliance factors: timely filling and timely paying. According to the author no study has analysed this aspect in a controlled field experiment with real taxpayers. Blumenthal, Christian and Slemrod (2001) did not find a significant impact of normative appeals on tax compliance. They conducted a large field experiment at a relatively central level working with the Minnesota Revenue Department.

It could be argued that moral suasion might be more efficient at a local level. Due to the federal structure of Switzerland, the competence of collecting the tax forms is mostly held by the communities. There is a far reaching division of competences between communities and the cantonal government. In Trimbach, where the experiment has been conducted, the tax administration has the autonomy to collect the tax forms and to remind taxpayers of filling them. We were careful to choose a small village, as there is an intensive contact between the tax administration and the taxpayers. Closeness might play an important role in how well moral suasion works. It means physical proximity as all households are not more than around one kilometre away from the tax administration. However, there might even be a certain mental closeness and connectedness, based on strong interaction with each others. In small communities everyone can actually come to know everyone else. In local areas certain social norms are likely to emerge and give rise to social identification (see Taylor 1996). Small structures have the advantage that citizens' preferences can be met better. Politicians are informed about the preferences of the local population. They are elected at the local level, and have an incentive to put citizens' preferences into account. There is a strong every-day interaction between taxpayers and local politicians and bureaucrats which moves the government closer to the citizens. Thus, if there is a moral suasion effect, it might be more common at the local level than at a much more centralised level as in the experiment conducted by Blumenthal et al. (2001).

We have information regarding the timely filling and timely paying for the tax years 1999, 2000 and 2001. This helps to analyse the impact of moral suasion on compliance comparing the treatment group with the control group for different years.

2. Design of the Letter

The treatment group received a letter signed by the commune fiscal commissioner in February 2002. The letter has been sent just after the tax form 2001 in a separate letter to increase the possibility that taxpayers who use professional assistance read the letter. We chose a pink sheet so that individuals get better aware of it (see Appendix). Furthermore, the letter was signed by the chief tax administrator in person. The style (easy to read and to understand) and an adequate letter length (not too long) have been chosen to make it easier to capture the attention of taxpayers.

To reduce biases individuals were not informed that they had been selected randomly for a tax compliance study. The letter had the following moral suasion part in the first paragraph:

If the taxpayers did not contribute their share, our commune with its 6226 inhabitants would suffer greatly. With your taxes you help keep Trimbach attractive for its inhabitants.

Similar to the design of the letter in Blumenthal et al. (2001), the message points out the importance to pay the taxes voluntarily to guarantee the provision of public goods in an attractive manner. Contrary to Blumenthal et al. (2001) we have done our experiment at the communal level, and integrated the number of inhabitants (6226) in the message to stress how “close” people are with each others. In the second paragraph we signalise that citizens are trusted, which helps to enforce the psychological contract between the tax administration and taxpayers:

In Switzerland, contrary to other countries, the citizens have the opportunity to actively participate in the legislative procedure. This advantage is also reflected in the tax legislation, which stipulates self declaration by the taxpayers. This Swiss system presupposes that citizens have a sense of responsibility and are ready to maintain the functioning of municipalities, cantons, and the state. With your conscientious tax declaration you contribute to preserving this democratic and liberal structure.

A respectful and fair procedure by the tax administration gives taxpayers a signal that taxpayers are respected. The intention of the message in the last paragraph is to give the taxpayers additional information and thus communicate in a neutral way that tax

administration is a “service” institution interested that individuals understand the tax filling process¹.

If you encounter any difficulties or doubts when filling in your tax declaration, please refer to the green sheet enclosed with the form.

On the one hand a letter covering more than one sentence helps to catch better moral suasion factors, focussing on different aspects. It enhances the probability that normative appeals used in our letter have an effect on taxpayers’ attitudes and thus might change compliance behaviour. It leaves the question open to which extent the behaviour is going to be adjusted because of attitudinal shifts. On the other hand, the more sentences are used the higher the “noise” or “interpretation difficulties” and the lower the chance to know which sentence finally resulted or not in shifting attitudes. Furthermore, it increases the possibility that individuals do not read the letter to the end. Letters should not be too long or complicated, but rather understandable, so that subjects become neither bored nor confused and therefore get the incentive to read the whole letter.

IV. RESULTS

1. Descriptive Analysis

Tax compliance researchers have paid substantial attention to tax evasion and thus to the decision how much income to report in a tax return. Almost nothing is known about individuals’ compliance behaviour regarding the timely filling out of the tax form and to which extent individuals pay their taxes on time. This field data analysis tries to overcome these shortfalls analysing these factors as dependent variables and searching for factors that influence them.

Before starting with the multiple regression estimations using “timely filling out the tax form” (*TF*) and “timely paying the taxes” (*TP*) as dependent variables and to check if there is a significant difference between the control group and the treatment, searching for

¹ Another possibility would have been to offer special assistance as, e.g., an assistance covering more than the normal level of service that is currently offered by the department. However, such a strategy would bias the analysis of moral suasion. Such a treatment would help analyse whether a positive relationship between the taxpayer and the department stimulates compliance.

factors that influence compliance behaviour, we focus on the dependent variables descriptively. *TF* and *TP* are coded as follows:

TF: 3= no submission delay, extension of time
 2= first reminder
 1= second reminder
 0= no submission

TP: 3 = payments on time, remission of taxes
 2= first request for payment
 1= debt collection
 0= depreciation

Thus, a higher value goes in line with a higher tax compliance. The value 0 for the *TF* variable covers a group that according to Erard and Ho (2001, pp. 25-26) have been neglected by tax compliance research: the non-filers, also known as the “ghosts”. With a sample from the 1988 U.S. federal individual income tax return file based on a 25 percent random subsample survey they show that non-filing is more current among self-employed individuals, especially in those professions where income is more easy to hide. Furthermore, they point out that a reduction of the burden of filling and programs educating individuals about the filling procedure help reduce non-filing as for taxpayers near the threshold of filling, the burden serves as a filling restriction:

“Once a ghost is brought into the system, he is likely to remain in the system” (p. 48).

Table 1 shows the percentage of non-filers in our field experiment: 4.8 percent in the control group and 3.1 in the treatment group. Looking back to the years 2001 and 2000, the values vary between 2.1 and 4.8 percent. These results are in line with the estimated cantonal level (Solothurn: 2.4 percent of the taxpayers, Swiss average: 2.85 percent, year 1999²).

In general, *Table 1* indicates that a great number of taxpayers send their tax forms back on time (control group: 91.3 percent, treatment group: 92.1 percent). Thus, there is no strong variance in the degree of compliance for both variables. For both compliance variables we can observe that the moral suasion treatment group has a higher compliance rate than the

² This data has been collected by the University of Zurich, Institute for Empirical Research in Economics with a survey. Thanks are due to Alois Stutzer for giving me these information.

reference group. The mean values for the variable *TF* (*TP*) are 2.813 (2.878) for the control and 2.859 (2.923) for the treatment group. The strongest effects can be observed for the variable *TP*. However, to get a real picture to which extent such a behaviour is the consequence of a moral suasion effect, *TF* and *TP* values for the years 1999 and 2000 are included.

Table 1
“Timely Filling Out” the Tax Form 2001

Timely Filling Out (TF)	Degree	Control Group	Treatment Group	Total
0	Count	14	9	23
	% within Groups	4.8	3.1	4.0
1	Count	1		1
	% within Groups	0.3		0.2
2	Count	10	14	24
	% within Groups	3.5	4.8	4.1
3	Count	264	268	532
	% within Groups	91.3	92.1	91.7
Total	Count	289	291	580
	% within Groups	100.0	100.0	100.0
Mean TF Degree		2.813	2.859	

Table 2
“Timely Paying” the Taxes (Tax Form 2001)

Timely Paying (TP)	Degree	Control Group	Treatment Group	Total
0	Count	1		1
	% within Groups	0.3		0.2
2	Count	32	22	54
	% within Groups	11.1	7.6	9.3
3	Count	256	267	523
	% within Groups	88.6	92.4	90.5
Total	Count (N)	289	289	578
	% within Groups	100.0	100.0	100.0
Mean TP Degree		2.878	2.923	

However, to get a real picture to which extent such a behaviour is the consequence of a moral suasion effect, *TF* and *TP* values for the years 1999 and 2000 are included. *Table 3* and *4* present the results. In general, only for the variable *TP* we observe a relatively strong increase in compliance between the years 2001 and 2000, which may indicate a moral suasion effect. The mean values between the control group and the treatment group for the years 2000 and 1999 are almost identical. For the year 2001 we observe in both groups an increase in the mean value. The results for the mean values for the *TF* variable are not very consistent. A decrease is observed in both groups between the years 2000 and 2001.

Table 3
Summary Three Years Timely Filling Out (TF) (in %)

Degree	Year	Control Group	Treatment Group
0	2001	4.8	3.1
	2000	3.9	2.1
	1999	2.8	3.8
1	2001	0.3	
	2000	1.1	1.4
	1999	0.4	0.8
2	2001	3.5	4.8
	2000	3.6	2.8
	1999	4.4	4.2
3	2001	91.3	92.1
	2000	91.5	93.7
	1999	92.4	91.3
Mean	2001	2.813	2.859
	2000	2.826	2.881
	1999	2.866	2.830

Table 4
Summary Three Years Timely Paying (TP) (in %)

Degree	Year	Control Group	Treatment Group
0	2001	0.3	1.0
	2000	2.3	3.0
	1999	2.9	3.6
1	2001		
	2000	1.9	2.6
	1999	1.7	1.2
2	2001	11.1	7.6
	2000	8.7	5.5
	1999	6.2	4.4
3	2001	88.6	92.4
	2000	87.2	88.9
	1999	89.3	90.7
Mean	2001	2.879	2.924
	2000	2.808	2.804
	1999	2.823	2.823

We are going to use an independent-samples t-test to compare means for the reference and the treatment group in the year 2001. This test can be applied as subjects have been randomly assigned to the two groups, so that any difference in response is due to the treatment effect. The results indicate that there is a significant difference between the groups for the coefficient of the variable *TP* (sig. 2-tailed, 0.086), but not for the variable *TF*.

To get an information about the changes over time for the treatment group, the paired-sample t test (Wilcoxon) has been done. It allows to compare the means of a group in different time periods. It computes the differences between values and tests if the average differs from 0. In our study, taxpayers' *TF* and *TP* are measured in 2000 and 2001. Thus, each subject has two measures, before and after the field experiment. *Table 5* presents the results. For the variable *TF* there is no significant difference between the years 2000 and 2001 for both groups. On the other hand, for the *TP* variable there is a significantly higher compliance in the year 2001 compared to 2000. *Table 5* shows that the mean coefficient and the t-value is higher for the treatment group than for the control group. Such a result indicates that moral suasion might have an effect on the morality of paying taxes.

Table 5
Paired Samples Statistics

Pairs	Mean	Std. Error Mean	t-value
<i>Treatment Group</i>			
TP 2000 - TP 2001	-0.118***	0.033	-3.566
TF 2000 - TF 2001	0.021	0.034	0.533
<i>Control Group</i>			
TP 2000 - TP 2001	-0.072**	0.029	-2.456
TF 2000 - TF 2001	-0.004	0.030	-0.120

Notes: number of observations treatment group: 281, control group: 286. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

2. Multivariate Analysis

The results in the descriptive analysis indicate that morale suasion seems not to have a strong effect on compliance. The descriptive analysis indicates a significant difference between the control and the treatment group for the variable *TP*. However, it is questionable whether such a result remains stable using a multivariate analysis. To check if moral suasion has been successful, it is essential to control for many variables and thus to use a multivariate analysis instead of only a univariate data evaluation. We are going to integrate socio-demographic and socio-economic variables into the equations. A dummy variable MORAL SUASION has been built to compare the control with the treatment group (1=treatment group). Compared to previous studies (Slemrod et al. 2001, Blumenthal et al. 2001) we pay attention to integrate more control variables, e.g., we compare foreigners with Swiss citizens and check if the variable religion affects compliance³.

³ Comparison between religion subgroups is interesting in Switzerland as people resigned from the traditional churches (catholic and protestant church) do not have to pay church taxes.

1. Model Estimation

Least squares and ordered probit models are used to analyse the determinants of tax morality. The least squares estimations offer qualitatively quite similar results as the ordered probit model⁴. In *Table 4* we present only the marginal effect for the highest *TP* and *TF* values. The basic estimation equation has the following structure:

$$TP_i = \beta_0 + \beta_1 \cdot AGE_i + \beta_2 \cdot GENDER_i + \beta_3 \cdot REL_i + \beta_4 \cdot CULTURE_i + \beta_5 \cdot GROUP_i + \beta_6 \cdot MARITAL_i + \beta_7 \cdot ECONOMIC_i + \beta_8 \cdot FILLING_i + \varepsilon_i$$

$$TF_i = \beta_0 + \beta_1 \cdot AGE_i + \beta_2 \cdot GENDER_i + \beta_3 \cdot REL_i + \beta_4 \cdot CULTURE_i + \beta_5 \cdot GROUP_i + \beta_6 \cdot MARITAL_i + \beta_7 \cdot ECONOMIC_i + \beta_8 \cdot FILLING_i + \varepsilon_i$$

The independent variables are specified as follows:

AGE_i: Dummy variables for the following groups: 20-29, 30-49, 50-64, 65+, with 20-29 as reference group. Predicted sign: (+). Elderly people are more experienced in tax matter and they know the consequences of not paying the taxes and not sending the tax form on time. Furthermore they are more strongly attached to their community, which might be important in our case.

GENDER_i: The following comparisons have been done with dummy variables: FEMALES, MALES and MARRIED COUPLES (reference group: MARRIED COUPLES). The first two variables cover individuals that live alone (singles, widowed, separated, divorced). Social psychological research suggests that women are more obedient and compliant and less self-reliant than men (Tittle 1980). On the other hand, couples might have a lower compliance degree as in Switzerland they are taxed in a higher bracket than two separate incomes. Thus, we would predict that couples have a lower compliance than individuals who live alone.

RELIGION_i: The following variables have been generated: CATHOLIC, PROTESTANT, OTHER/NO CONFESSION. This comparison is interesting as people in the third category do not have to pay church taxes. It can be supposed that some of those individuals without a

⁴ *TP*: three point scale from 0 to 2, *TF*: four point scale from 0 to 3 (see *Tables 3* and *4*).

confession might have chosen the exit option in order to be exempt from these taxes. With this comparison it is almost impossible to analyse if religion acts as a moral incentive to behave honestly, providing a certain level of enforcement to act in the lines of accepted rules, and acts as a “supernatural police” (Anderson and Tollison 1992).

CULTURE_i: We are going to differentiate between Swiss and foreigners (dummy variable: 1= Swiss citizens and 0=foreigners). We also are going to differentiate in some equations between couples where one of the partners is Swiss and the other foreigner (SWISS AND FOREIGNER, and the other way round FOREIGNER AND SWISS). It should be noticed for the other estimations that a married couple with one foreign person has been coded as foreigners. It is difficult to develop a clear prediction of the effects on compliance. Due to their status, foreigners might have an incentive to be honest and to avoid conflicts with the state. On the other hand, they might be less affected by the second paragraph in the letter, as they gain less from direct democracy being excluded from the participation rights.

GROUP_i: Is a dummy variable with the value 1 for the treatment group and 0 for the control group. We are going to see in a multiple regression analysis if the small differences between the control and the treatment group is significant controlling for additional variables.

MARITAL STATUS_i: (dummy variables: SINGLE, LIVING TOGETHER, MARRIED, DIVORCED, SEPARATED, WIDOWED, reference group: SINGLE). Marital status might influence legal or illegal behaviour. Tittle (1980) states:

“A long tradition in sociology, extending back to Durkheim, postulates that proneness toward rule breaking varies inversely with the extent to which individuals are involved in social networks with constraining content” (p. 111).

This would imply that married people are more compliant than others, especially compared to singles because they are more constrained by their social network. It should be noticed that we never put the variables MARITAL STATUS and GENDER in one equation, because of the classification of the GENDER variable.

ECONOMIC_i: Some of the variables analysed are proxies for the economic situation of a taxpayer: INCOME, HOUSE OWNER (dummy variable), DEBT (dummy variable) and VST (dummy variable). To check the sensitivity of these variables we integrate them mostly

separately into the estimations. Being a house owner might increase the incentive to act in line with the law to maintain society “stakes”. Home owners have higher costs to leave the community compared to a person who rents an apartment. The person might have chosen to buy a house as he/she likes the region and the people. Thus, we would predict that house owners are more compliant than other individuals. As there is a strong correlation between income and having an own house in our data, we integrate them separately into the estimations. We furthermore expect a negative correlation between having debts and paying the taxes on time. People with debts have probably financial problems and thus difficulties to pay the taxes. There even might be a negative correlation between sending the tax form on time and debts, as debts might go in line with other problems or characteristics as, e.g., reliability and trustworthiness. As in Switzerland many home owners have debts we excluded them in the variable of having debts. The dummy variable VST measures whether individuals declare domestic income from capital gains, lottery winnings and certain insurance benefits as life insurance and private pensions (yes = value 1). In Switzerland, this tax is imposed at the current rate of 35%. It should be noticed that tax payments can be reclaimed by persons filing Swiss federal tax returns or credited against cantonal tax liabilities. As the variable catches honesty, we would predict that there is a positive correlation between compliance and VST.

FILLING_i: We furthermore integrate tax filling components into the analysis: i) the amount someone has deducted in his/her tax form (DEDUCTION) and ii) how a taxpayer has filled out the tax form (with a computer or a typewriter (COMPUTER/TYPEWRITER), or without). We were not able to distinguish clearly between tax forms filled in with computerised tax packages and those done with a typewriter. However, most of the tax forms seem to be done with the computer. Many taxpayers in Switzerland have started to use a computer software to fill out their tax forms. As almost no empirical evidence is known about the effects of tax preparation software packages on compliance we add this variable into further equations. Computer tax packages might reduce the tendency to consult tax specialists. In general, the main advantages are that they provide technical knowledge, especially concerning the tax law and help warn taxpayers if they commit certain types of errors (see Masselli et al. 2000). If tax preparation software helps reduce the costs of filling out the tax form it might have a positive effect on compliance. Furthermore, individuals that use a computer or a typewriter might have a higher willingness to comply rightly with the law and such a duty might also be correlated positively with the variable *TP*. Deduction on

the other hand could be seen as a proxy for the intention to maximise the possibility set to find legal reductions to reduce taxes and thus to take advantage of the tax law. Those individuals might be more sceptical about the relevance of contributing to the public good and thus less compliant regarding the variables *TF* and *TP*.

2. Results

The first estimations contain a small amount of control variables. We estimated these models because with these estimations we do not lose many observations. Contrary to further estimations, non-filers, e.g., are integrated. *Table 6* and *7* present the results. In the ordered probit estimations, only the marginal effects for the highest compliance value are shown. As we can see most findings are robust regarding the estimation methods. In general, the least squares results present coefficients at a higher significance level. We are going to start with the determinants of the variable *TP*.

We first look at the variable MORAL SUASION. Although the marginal effects are relatively high, indicating that being in the moral suasion group increases the probability of being compliant by 3 percentage points, the coefficients are not significant in the ordered probit estimations. In the least squares estimations only equation 1 indicates a significantly higher compliance (0.041 score points) in the treatment than the control group. In the least squares estimation, individuals at the age of 65+ on average report around 0.154 score points more compliance than the reference group (20-29) (see first estimation). Similar, being at the age 65+ rather than 20-29 increases the probability of being totally compliant by around 14 percentage points. In both models females who live alone report a significantly higher compliance than couples. The marginal effects indicate, for example, in Equation 2 that being female and living alone rather than being married increases the probability of having the highest *TP* value by 6.5 percentage points. This indicates a strong obligation to comply. Religion has no significant effect on *TP*. Being married rather than single reduces the probability of being highly compliant by around 7 percentage points. Compared to other marital statuses only married people have a significantly higher compliance than singles. Furthermore, there is no significant difference between Swiss individuals and foreigners.

Table 6

Determinants of the Variable "Timely Paying" the Taxes (TP)

Dependent Variable: TP	Ordered Probit						Least Squares					
	Eq. 1		Eq. 2		Eq. 3		Eq. 1		Eq. 2		Eq. 3	
	Variable	Coeff.	Marg.	Coeff.	Marg.	Coeff.	Marg.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.
a) Groups												
MORAL SUASION	0.243	0.035	0.242	0.034	0.242	0.031	0.042*	1.695	0.041	1.626	0.041	0.102
b) Demographic Factors												
AGE 30-49	-0.019	-0.003	0.086	0.012	0.083	0.011	-0.011	-0.272	0.012	0.273	0.012	0.788
AGE 50-64	0.378	0.054	0.505	0.070	0.493	0.064	0.061	1.364	0.092*	1.824	0.090	0.076
AGE 65+	0.929***	0.134	1.048***	0.146	1.040***	0.135	0.116***	2.767	0.154***	2.885	0.152	0.004
c) Culture												
SWISS	-0.027	-0.004	-0.061	-0.009	-0.046	-0.006	0.004	0.108	-0.003	-0.080	0.001	0.984
SWISS AND FOREIGNER					-0.139	-0.018					-0.049	0.751
FOREIGNER AND SWISS					6.350	0.821					0.139	0.310
d) Gender												
FEMALE	0.452**	0.065					0.065**	2.072				
MALE	0.324	0.047					0.056	1.597				
e) Religion												
CATHOLIC	-0.188	-0.027	-0.208	-0.029	-0.205	-0.027	-0.026	-0.840	-0.031	-1.002	-0.030	0.334
PROTESTANT	-0.003	0.000	-0.002	0.000	0.007	0.001	-0.003	-0.071	-0.004	-0.112	-0.003	0.946
f) Marital Status												
MARRIED			-0.537**	-0.075	-0.538**	-0.070			-0.096**	-2.524	-0.096	0.012
DIVORCED			-0.360	-0.050	-0.357	-0.046			-0.055	-1.071	-0.054	0.293
SEPARATED			-0.330	-0.046	-0.322	-0.042			-0.058	-0.712	-0.056	0.486
WIDOWED			0.153	0.021	0.157	0.020			-0.042	-0.794	-0.041	0.440
Observations	572		572		572		572		572		572	
Prob(F-statistic)							0.003		0.004		0.007	
Prob(LM-statistic)	0.001		0.001		0.002							

Notes: Dependent variable: TP on a three point scale (0-2). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, COUPLES, OTHER RELIGION/NO RELIGION, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest TP score (2).

Table 7 presents the results of the TF variable.

Table 7
Determinants of the Variable “Timely Filing Out” the Tax Form 2001 (TF)

<i>Dependent Variable: TF</i>	<i>Ordered Probit</i>						<i>Least Squares</i>					
	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>	
	<i>Variable</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>
a) Groups												
MORAL SUASION	0.040	0.005	0.050	0.006	0.046	0.005	0.042	0.829	0.041	0.805	0.042	0.823
b) Demographic Factors												
AGE 30-49	0.379*	0.047	0.495**	0.060	0.498**	0.056	0.184**	2.256	0.242***	2.726	0.241***	2.703
AGE 50-64	0.477*	0.060	0.580*	0.071	0.568	0.064	0.237**	2.573	0.300***	2.912	0.298***	2.878
AGE 65+	1.242***	0.155	1.283***	0.157	1.276***	0.145	0.340***	3.959	0.399***	3.660	0.396***	3.629
c) Culture												
SWISS	0.267	0.033	0.241	0.029	0.244	0.028	0.067	1.005	0.057	0.842	0.064	0.929
SWISS AND FOREIGNER					-0.275	-0.031					0.016	0.051
FOREIGNER AND SWISS					5.974	0.677					0.199	0.709
d) Gender												
FEMALE	-0.160	-0.020					-0.032	-0.503				
MALE	0.069	0.009					0.054	0.752				
e) Religion												
CATHOLIC	-0.031	-0.004	-0.095	-0.012	-0.091	-0.010	-0.007	-0.114	-0.030	-0.467	-0.029	-0.451
PROTESTANT	-0.043	-0.005	-0.124	-0.015	-0.106	-0.012	0.000	-0.001	-0.023	-0.308	-0.023	-0.302
f) Marital Status												
MARRIED			-0.111	-0.014	-0.110	-0.013			-0.088	-1.142	-0.090	-1.161
DIVORCED			-0.249	-0.030	-0.246	-0.028			-0.125	-1.201	-0.124	-1.189
SEPARATED			-0.699	-0.085	-0.695	-0.079			-0.275*	-1.663	-0.273*	-1.650
WIDOWED			0.137	0.017	0.144	0.016			-0.070	-0.639	-0.069	-0.630
Observations	574		574		574		574		574		574	
Prob(F-statistic)							0.011		0.011		0.03	
Prob(LM-statistic)	0.001		0.001		0.003							

Notes: Dependent variable: TF on a four point scale (0-3). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, COUPLES, OTHER RELIGION/NO RELIGION, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest TF score (3).

Similar to the variable *TP*, the coefficient of MORAL SUASION has a positive sign but is not significant in the ordered probit estimations. However, the marginal effects are significantly lower. Furthermore no least square estimation shows a significant correlation between MORAL SUASION and compliance. Looking at the other variables we observe that

the oldest age group (65+) has a significantly higher compliance than the reference group 20-29. We can observe that the marginal effects and the t-statistics increase with an increase of the age. Similarly, there is no culture difference and religion has not a significant effect on compliance. Regarding the marital status, in the two least squares estimations, separated taxpayers show a slightly significant lower compliance than singles. Contrary to the variable *TP*, females do not report a higher compliance than couples.

Our focus in further estimations is the dependent variable *TP*, as we have obtained stronger MORAL SUASION effects for this variable. *Table 8* and *9* present the results. The coefficient MORAL SUASION is not significant and the marginal effects vary between 2.5 and 3 percentage points. In general, the estimates seem to be robust, as coefficients of other variables change only slightly. The coefficients for the highest age group and for married people remain significant. Eq. 4 indicates that having an own house has a significantly positive effect on compliance. Having an own house increases the probability of being highly compliant by 5.4 percentage points. This significant positive impact is compatible with the theoretical considerations. Interestingly, the coefficient of the variable SWISS has the tendency to be significant with a negative sign which is in line with our predictions. There is no significant difference between self-employers and employees and income has no significant impact on *TP*. The coefficient for DEBT has the expected negative sign, being highly significant. The marginal effect for the highest *TP* score indicates that the proportion of persons with debts is 14.4 percentage points lower than for taxpayers without debt, and the coefficient of the least squares estimate indicates that taxpayers with debts, on average, and keeping all other influences constant, are 3.519 points less compliant than other taxpayers. The inclusion of the variable VST has been done in Eq. 7. The coefficient has the expected sign. For taxpayers who declare their domestic income from capital gains, lottery winnings, and certain insurance benefits, the probability of being totally compliant increases by 6.8 percentage points. In the least squares estimation an increase in the scale by one point raises the average compliance by 4.68 units. Regarding the tax filling variables we find that a higher deduction leads to lower compliance without being significant (marginal effects around 1 percentage point). On the other hand, people who use a computer or a typewriter to fill out their tax forms are more compliant with marginal effects between 2.6 and 3.4 percentage points, showing a significant effect in Eq. 6.

Table 8

Further Determinants of the Variable "Timely Paying" the Taxes (Ordered Probit)

Dependent Variable: TP	Ordered Probit							
	Eq. 4	Eq. 5		Eq. 6		Eq. 7		
Variable	Coeff.	Marg. Coeff.	Coeff.	Marg. Coeff.	Coeff.	Marg. Coeff.	Coeff.	Marg.
a) Groups								
MORAL SUASION	0.310	0.030	0.333	0.033	0.375	0.029	0.396	0.025
b) Demographic Factors								
AGE 30-49	0.069	0.007	0.122	0.012	0.899	0.068	0.797	0.051
AGE 50-64	0.369	0.036	0.456	0.046	0.928	0.071	0.840	0.054
AGE 65+	0.980*	0.096	1.016*	0.102	1.341**	0.102	0.993	0.064
c) Culture								
SWISS	-0.587*	-0.057	-0.379	-0.038	-0.581	-0.044	-0.964*	-0.062
d) Religion								
CATHOLIC	-0.142	-0.014	-0.071	-0.007	-0.215	-0.016	-0.257	-0.017
PROTESTANT	0.109	0.011	0.098	0.010	0.103	0.008	0.011	0.001
e) Marital Status								
MARRIED	-0.807***	-0.079	-0.560	-0.056	-0.767*	-0.058	-0.728	-0.047
DIVORCED	-0.113	-0.011	-0.056	-0.006	-0.317	-0.024	-0.262	-0.017
SEPARATED	-0.389	-0.038	-0.217	-0.022	-0.536	-0.041	-0.298	-0.019
WIDOWED	-0.039	-0.004	0.135	0.014	-0.131	-0.010	0.133	0.009
f) Employment Status								
SELFEMPLOYED	0.265	0.026	0.524	0.053	0.659	0.050	0.380	0.024
d) Economic Situation								
OWN HOUSE	0.557*	0.054						
LOG (INCOME)			0.032	0.003	0.068	0.005	0.063	0.004
DEBT					-1.062***	-0.081	-0.802**	-0.051
VST							1.065***	0.068
e) Tax Filling Variables								
LOG (DEDUCTION)			-0.106	-0.011	-0.137	-0.010	-0.170	-0.011
COMPUTER/WRITING MACH.	0.344	0.034	0.463*	0.046	0.451	0.034	0.405	0.026
Observations	498		499		410		409	
Treatment Group	249		250		206		205	
Control Group	249		249		204		204	

Notes: Dependent variable: TP on a three point scale (0-2). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, COUPLES, OTHER RELIGION/NO RELIGION, SINGLE, EMPLOYED, WITHOUT AN OWN HOUSE, NO DEBTS, NO VST DECLARATION, WITHOUT COMPUTER/TYPEWRITER. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest TP score (2).

Table 9
Further Determinants of the Variable “Timely Paying” the Taxes (Least Squares)

<i>Dependent Variable: TP</i>	<i>Least Squares</i>							
	<i>Eq. 4</i>		<i>Eq. 5</i>		<i>Eq. 6</i>		<i>Eq. 7</i>	
	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>	<i>Coeff.</i>	<i>t-Stat.</i>
a) Groups								
Moral Suasion	0.045*	1.870	0.045*	1.849	0.039	1.551	0.041	1.645
b) Demographic Factors								
AGE 30-49	0.010	0.235	0.019	0.434	0.124**	2.573	0.103**	2.172
AGE 50-64	0.049	0.984	0.065	1.311	0.124**	2.268	0.095*	1.781
AGE 65+	0.113**	2.195	0.127**	2.462	0.174***	3.136	0.113***	2.033
c) Culture								
SWISS	-0.072**	-2.172	-0.044	-1.343	-0.054	-1.496	-0.088**	-2.437
d) Religion								
CATHOLIC	-0.013	-0.420	-0.008	-0.280	-0.020	-0.643	-0.029	-0.941
PROTESTANT	0.013	0.373	0.012	0.330	0.010	0.275	-0.001	-0.016
e) Marital Status								
MARRIED	-0.112***	-2.980	-0.080**	-2.138	-0.090**	-2.276	-0.061	-1.547
DIVORCED	-0.010	-0.205	-0.012	-0.240	-0.030	-0.544	-0.009	-0.166
SEPARATED	-0.052	-0.627	-0.030	-0.356	-0.052	-0.630	-0.012	-0.150
WIDOWED	-0.054	-1.072	-0.033	-0.658	-0.046	-0.904	-0.019	-0.378
f) Employment Status								
SELFEMPLOYED	0.035	0.631	0.048	0.880	0.072	1.321	0.040	0.745
d) Economic Situation								
OWN HOUSE	0.072**	2.384						
LOG (INCOME)			0.002	0.326	0.005	0.835	0.004	0.620
DEBT					-0.188***	-4.601	-0.144***	-3.519
VST							0.187***	4.681
e) Tax Filling Variables								
LOG (DEDUCTION)			-0.009	-0.943	-0.007	-0.569	-0.017	-1.370
COMPUTER/WRITING MACH.	0.038	1.316	0.054*	1.874	0.042	1.404	0.035	1.223
Observations	498		499		410		409	
Treatment Group	249		250		206		205	
Control Group	249		249		204		204	

Notes: Dependent variable: TP on a three point scale (0-2). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, COUPLES, OTHER RELIGION/NO RELIGION, SINGLE, EMPLOYED, WITHOUT AN OWN HOUSE, NO DEBTS, NO VST DECLARATION, WITHOUT COMPUTER/TYPERWRITER. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest TP score (2).

It should be noticed that including additional variables reduces the number of observations as, for example, regarding the additional variables no information are available for non-filers. *Table 8* and *9* show that the reduced number of observations has no effect on the equal distribution between the control group and the reference group.

The role of withholding taxes has been studied, for example, in relation to the cross-border income flows to combat tax evasion. However, according to the author's knowledge there is hardly any empirical study that analyses honesty regarding the declaration of domestic income from capital gains, lottery winnings and certain insurance benefits as dependent variable at the individual level (VST) and searches for factors that influence compliance behaviour. To reduce such a shortcoming, additional estimations have been done using VST as dependent variable. *Table 10* presents the results.

There is no difference between the treatment and the control group. Looking at the other variables we observe that all age groups from 30 to 65+ have a significantly higher compliance regarding the declaration than the reference group 20-29. For example, the proportion of persons of the age 50-64 who report the highest compliance is more than 12 percentage points higher than for the reference age group. We can observe that the marginal effects increase with an increase of the age. Thus, the group at the age 65 and above reports the highest compliance among the groups. Living alone as a female (male) rather than being married reduces the probability of a person being honest by 11.1 (8.9) percentage points. Married, divorced, separated, and widowed people have a lower compliance than singles, showing in some equations a significant tendency for the variables MARRIED, DIVORCED and WIDOWED. Foreigners are significantly less honest than Swiss citizens, a result which seems to be quite robust throughout the estimations with high marginal effects (between 8.1 and 28.9 percentage points).

When controlling for mixed couples the difference still remains significant. The variables measuring the economic situation indicate the same picture throughout all the estimations. A higher income and a higher fortune lead to a significantly higher compliance. The proportion of taxpayers with an own house who declare honestly is 29.5 percentage points higher than of taxpayers who do not own a house. On the other hand, having debts reduces compliance. Furthermore, higher deductions and filling the tax form out with the computer/typewriter have a positive effect on compliance. In general, for many variables as, e.g., age, marital status, economic situation these results prove to be in line with findings obtained from the variable *TP*, indicating thus a robust picture.

Table 10

Determinants of the Variable “Declaration of Domestic Income from Capital Gains, Lottery Winnings
and Certain Insurance Benefits” (VST) (Tax Declaration 2001)

<i>Binomial Probit</i>														
<i>Dependent Variable: VST</i>														
	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>		<i>Eq. 6</i>		<i>Eq. 7</i>	
<i>Variable</i>	<i>Coeff.</i>	<i>Marg.</i>												
a) Groups														
Moral Suasion	0.037	0.010	0.013	0.003	0.016	0.004	0.007	0.002	0.008	0.003	-0.033	-0.006	0.005	0.001
b) Demographic Factors														
AGE 30-49	0.328*	0.088	0.494**	0.130	0.492**	0.129	0.413*	0.121	0.359***	0.114	0.551*	0.092	0.330	0.038
AGE 50-64	0.482**	0.129	0.736***	0.194	0.726***	0.191	0.617***	0.181	0.676***	0.214	0.751**	0.125	0.399	0.046
AGE 65+	1.285***	0.344	1.600***	0.421	1.590***	0.417	1.531***	0.450	1.907***	0.604	1.857***	0.310	1.139**	0.132
c) Culture														
SWISS	1.078***	0.289	1.061***	0.279	1.089***	0.286	0.784***	0.230	0.848	0.269	0.692***	0.116	0.695***	0.081
SWISS AND FOREIGNER					-0.108	-0.029								
FOREIGNER AND SWISS					0.926	0.243								
d) Gender														
FEMALE	-0.414**	-0.111												
MALE	-0.334*	-0.089												
e) Religion														
CATHOLIC	0.175	0.047	0.113	0.030	0.121	0.032	0.093	0.027	0.132	0.042	0.165	0.028	0.046	0.005
PROTESTANT	-0.013	-0.004	-0.042	-0.011	-0.034	-0.009	-0.003	-0.001	0.059	0.019	0.329	0.055	0.078	0.009
f) Marital Status														
MARRIED			0.121	0.032	0.111	0.029	-0.287	-0.084	-0.378	-0.120	-0.632**	-0.105	-0.616*	-0.072
DIVORCED			-0.595**	-0.157	-0.589**	-0.155	-0.646**	-0.190	-0.832***	-0.263	-0.615	-0.103	-0.353	-0.041
SEPARATED			-0.148	-0.039	-0.145	-0.038	-0.551	-0.162	-0.321	-0.102	-0.848	-0.141	-0.950	-0.110
WIDOWED			-0.349	-0.092	-0.343	-0.090	-0.562*	-0.165	-0.503	-0.159	-0.885**	-0.148	-0.661	-0.077
d) Economic Situation														
OWN HOUSE							1.005***	0.295						
LOG (INCOME)									0.078**	0.025	0.031	0.005		
LOG (FORTUNE)													0.215***	0.025
DEBT											-0.822***	-0.137	-0.134	-0.016
e) Tax Filling Variables														
LOG (DEDUCTION)									0.319***	0.101	0.241**	0.040	0.147	0.017
COMP./WRIT. MACH.							0.526***	0.154	0.553***	0.175	0.386*	0.064	0.193	0.022
Observations	501		501		501		499		499		413		392	

Notes: Dependent variable: VST on a two point scale (0-1). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, COUPLES, OTHER RELIGION/NO RELIGION, SINGLE, EMPLOYED, WITHOUT AN OWN HOUSE, NO DEBTS, WITHOUT COMPUTER/TYPEWRITER. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest TP score (2).

V. CONCLUSIONS

Governments and tax administrations have an incentive to search for tax policy strategies that generate additional revenues, especially in times with large and persistent deficits. Raising taxes and increasing enforcement strategies are only two of the possible instruments. Research findings in the tax compliance literature found evidence for the difficulties of traditional factors to increase tax compliance. Turning away from deterrence strategies offers the possibility to check the effects of alternative factors as, e.g., moral suasion. With this field experiment we analysed the effects of moral suasion on tax compliance. Tax compliance researchers have paid substantial attention to tax evasion and thus to the decision how much income to report in a tax return. But almost nothing is known about individuals' compliance behaviour regarding moral suasion focusing on the variables timely filling out of the tax form and paying individual taxes on time. This field data analysis tries to overcome this shortfalls, analysing these factors as dependent variables and searching for factors that influence those variables. Contrary to a previous controlled experiment done by Blumenthal et al. (2001), which found little or no evidence of a positive effect of normative appeals on tax compliance, we chose to cooperate with a *local* tax administration, because moral suasion efforts might be more effective at this lower level. Our results are in line with previous findings indicating that moral suasion has hardly any effect on taxpayers' compliance behaviour. The strongest effect can be observed for the variable *TP*, paying individual taxes on time.

We first conducted a descriptive comparison between the treatment group and the control group. For both compliance variables *TP* and *TF* (filling the tax form on time) we observed that the moral suasion treatment group has a higher compliance rate than the reference group. However, to get a real picture of the extent to which such a behaviour is a consequence of moral suasion different years have been compared. In general, only for the variable *TP* we observe a relatively strong increase in compliance between the years 2001 and 2000, which may indicate a moral suasion effect. In a further step we checked if moral suasion is successful, controlling for many variables in a multivariate analysis integrating socio-demographic, socio-economic, and tax filling variables into the estimations. In general, the coefficients of the variable MORAL SUASION indicated a positive correlation without being significant in most estimations. We observed higher marginal effects for the *TP* variable. Looking at the other variables, age and a good economic situation had a positive effect, being married and having debts a negative one. A strong correlation between being honest regarding the withholding taxes and the variable *TP* has been shown. No significant

difference between treatment and control group has been observed using as a dependent variable honesty regarding the declaration of domestic income from capital gains, lottery winnings and certain insurance benefits. On the other hand, factors as age, economic situation (own house, income, and fortune) had a positive effect on compliance, while foreigners and individuals with debts had a lower compliance than their reference groups.

Using controlled field experiments has many advantages. Compared to laboratory experiments, one of the main advantages is the implementation of tax authorities and not experimenters, which evokes real processes in the usual environment outside a laboratory setting. It helps to better test the effects of different instruments on taxpayers in the real situation of “filling out the tax form” and “paying the taxes”. This helps formulate practical advices on tax policy, based on a scientific test. Certainly, compared to lab experiments, this kind of experiments allows social and economic interactions and is thus less controlled, but causality can be better determined than in non-experimental studies (see Burtless 1995 about the advantages and problems of randomised field trials).

Our field experiment has been done in a specific commune in Switzerland. Future research could expand the analysis integrating different communes in different cantons. This is especially interesting in Switzerland (or in the United States), covering a certain variation of institutional components as direct democracy and federalism among the cantons (states).

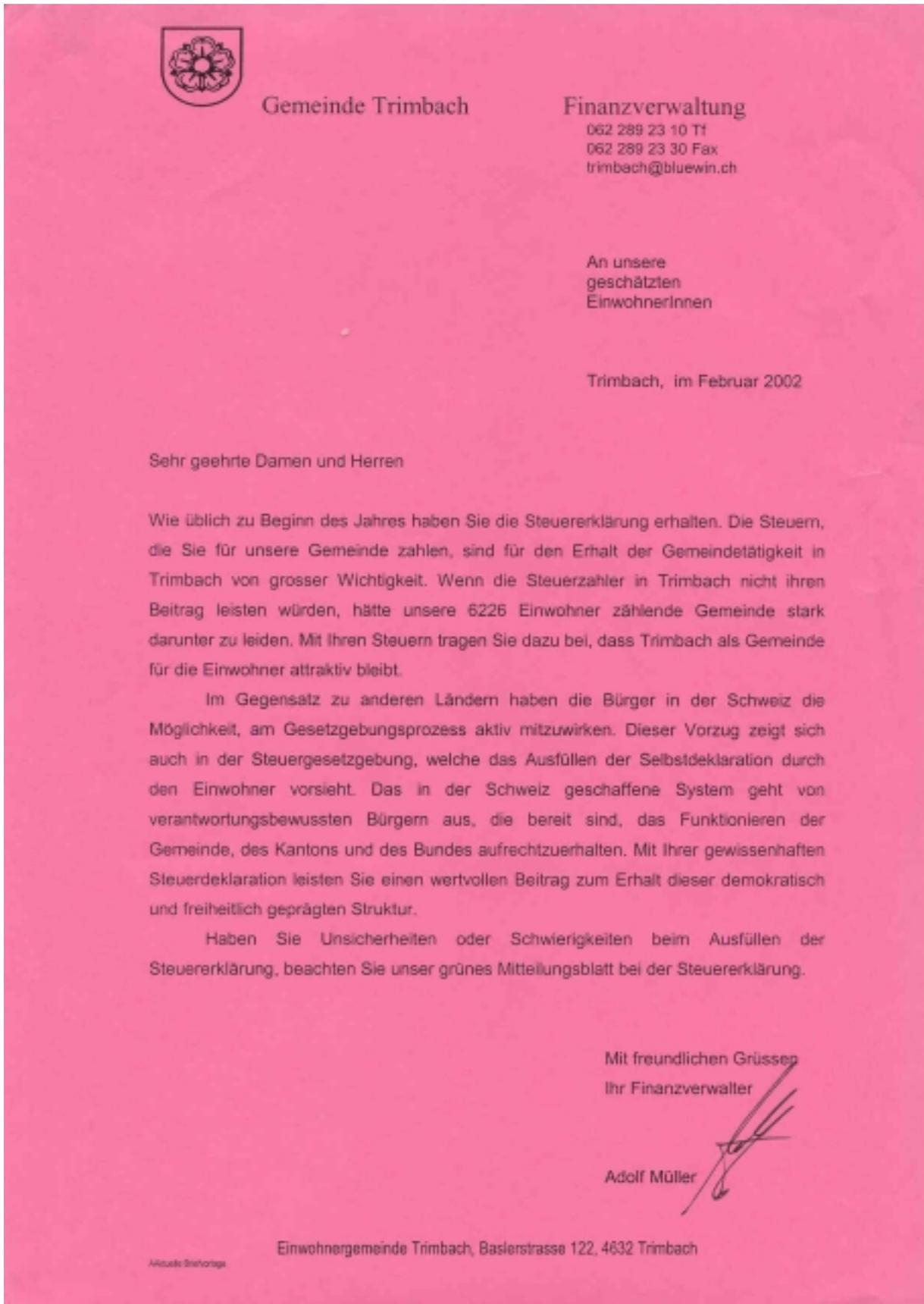
Furthermore, Blumenthal et al. (2001) point out referring to the advertising research that

“Communications of a different sort, delivered in a different way, or with greater frequency might still produce a compliance effect” (p. 135).

Thus, further field experiments could analyse whether more communication channels, including, e.g., local newspapers, radios, information events, affect compliance behaviour. Positive effects of moral suasion have been observed, e.g., looking at tax amnesties. In India, a successful amnesty was accompanied by intensive media activities organised by a marketing company and integrating well-known sport and film celebrities. Geneva collected the highest per capita amount among the cantons in an amnesty in Switzerland having made an intensive effort using advertising, press conferences and arrangements.

APPENDIX

A1. Sample of the Letter



Translation

Dear Madam and Sir

As in the beginning of every year, you have just received the tax form. The taxes you pay are vital for maintaining the municipal tasks in Trimbach. If the taxpayers did not contribute their share, our commune with its 6226 inhabitants would suffer greatly. With your taxes you help keep Trimbach attractive for its inhabitants.

In Switzerland, contrary to other countries, the citizens have the opportunity to actively participate in the legislative procedure. This advantage is also reflected in the tax legislation, which stipulates self declaration by the taxpayers. This Swiss system presupposes that citizens have a sense of responsibility and are ready to maintain the functioning of municipalities, cantons, and the state. With your conscientious tax declaration you contribute to preserving this democratic and liberal structure.

If you encounter any difficulties or doubts when filling in your tax declaration, please refer to the green sheet enclosed with the form.

Yours sincerely,

Your tax administrator

REFERENCES

- Anderson, G. M. and R. D. Tollison (1992). Morality and Monopoly: The Constitutional Political Economy of Religious Rules, *CATO Journal*. 13: 373-391.
- Andreoni, J., B. Erard and J. Feinstein (1998). Tax Compliance, *Journal of Economic Literature*. 36: 818-860.
- Baumol, W. J. and W. E. Oates (1979). *Economics, Environmental Policy, and the Quality of Life*. Englewood Cliffs: Prentice-Hall.
- Becker, G. S. (1996). *Accounting for Tastes*. Cambridge: Harvard University Press.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Bowles, S. (1998). Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions, *Journal of Economic Literature*. 46: 75-111.
- Blumenthal, M., C. Christian and J. Slemrod (2001). Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota, *National Tax Journal*. 54: 125-138.
- Breton, A. and R. Wintrobe (1978). A Theory of 'Moral Suasion', *Canadian Journal of Economics*. 11: 210-219.
- Burtless, G. (1995). The Case for Randomized Field Trials in Economic and Policy Research, *Journal of Economic Perspective*. 9: 63-84.
- Erard, B. and J. S. Feinstein (1994a). Honesty and Evasion in the Tax Compliance Game, *RAND Journal of Economics*. 15: 1-20.
- Erard, B. and J. S. Feinstein (1994b). The Role of Moral Sentiments and Audit Perceptions in Tax Compliance, *Public Finance*. 49: 70-89.
- Erard, B. and C. C. Ho (2001). Searching for Ghosts: Who Are the Nonfilers and How Much Tax Do They Owe?, *Journal of Public Economics*. 81: 25-50.
- De Alessi, L. (1979). Toward an Analysis of Postdisaster Cooperation, *American Economic Review*. 65: 127-138.
- Frey, B. S. (1997). *Not Just for Money*. An Economic Theory of Personal Motivation. Cheltenham, UK: Edward Elgar Publishing.
- Frey, B. S. and G. Kirchgässner (1994). *Demokratische Wirtschaftspolitik: Theorie und Anwendung*. München: Vahlen.
- Hasseldine, J. (2000). Using Persuasive Communications to Increase Tax Compliance: What Experimental Research Has (and Has Not) Told Us, *Australian Tax Forum*. 15: 227-224.
- Masselli, J., R. Ricketts, V. Arnold and S. G. Sutton (2000). The Impact of Embedded Intelligent Agents of Tax Compliance Decisions, unpublished manuscript, Texas Tech University.
- McGraw, K. and J. T. Scholz (1991). Appeals to Civic Virtue Versus Attention to Self-Interest: Effects on Tax Compliance, *Law and Society Review*. 25: 471-498.

- Roth, J. A., J. T. Scholz and A. D. Witte (eds.) (1989). *Taxpayer Compliance*, Vol. 1 and Vol. 2. Philadelphia: University of Pennsylvania Press.
- Schwartz, R. and S. Orleans (1967). On Legal Sanctions, *University of Chicago Law Review*. 34: 282-300.
- Slemrod, J., M. Blumenthal and C. Christian (2001). Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Experiment in Minnesota, *Journal of Public Economics*. 79: 455-483.
- Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.
- Taylor, M. (1996). When Rationality Fails, in: J. Friedman (ed.), *The Rationality Choice Controversy*. New Haven & London: 223-223.
- Torgler, B. (2001). What Do We Know about Tax Morale and Tax Compliance?, *International Review of Economics and Business (RISEC)*. 48: 395-419.
- Torgler, B. (2002a). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 656-683.
- Torgler, B. (2002b). The Economic Analysis of “Creative” Compliance, WWZ-Discussion Paper 02/05, Basel: WWZ.

CHAPTER XX**BEYOND PUNISHMENT:****A TAX COMPLIANCE EXPERIMENT WITH TAXPAYERS IN
COSTA RICA *****ABSTRACT**

Tax compliance experiments have been conducted with students and have focused on the effects of deterrence on tax compliance. However, important insights can be gained looking at alternative instruments. A main purpose of this paper is to conduct an experiment in Costa Rica not with students (exclusively) but with taxpayers, holding traditional factors, such as the probability of penalty and the fine rate, constant and thus analysing to which extent other factors as fiscal exchange, moral suasion, and positive rewards systematically influence tax compliance. Our findings indicate that these factors increase the compliance rate.

JEL classification: H260, H410, C900, D630

Keywords: tax morale, tax compliance, tax evasion, experiments

* Forthcoming: Benno Torgler (2003). Beyond Punishment: A Tax Compliance Experiment with Taxpayers in Costa Rica, *Revista de Análisis Económico*.

I. INTRODUCTION

Since the theoretical work of Allingham and Sandmo (1972), tax compliance literature has flourished. Experimental studies have strongly increased in the last 15 years. In the late 80s researchers, like Paul Webley mostly psychologist (see, e.g., Webley, 1987, Webley and Halstead 1986, Webley, Morris and Amstutz 1985, Webley, Robben and Morris 1988 and Webley, Robben, Elffers and Hessing 1991) contributed to the tax compliance literature; in the 90s, more and more economic researchers emerged, as James Alm (see, e.g., Alm 1991, 1998, Alm Jackson and McKee 1992a, 1992b, 1992c, Alm, McClelland and Schulze 1992, 1999) who strongly influenced the orientation of the tax compliance research.

Most of the experiments have been conducted with students. However, many researchers have doubts that students are a satisfactory sample for studies in tax compliance behaviour. Baldry (1987) presented evidence that students' responses are not different from those of other subjects. The argumentation would be that the cognitive processes in the experiment are not different between subject pools (see Alm 1998). On the other hand, Gërkhani and Schram (2001) show in their cross-country experiments in the Netherlands and Albania the importance of subject pools. They used different groups as high school pupils, university students, high school teachers, university non-academic personnel and university teachers. They found, for example, that the aggregated group of Dutch pupils and students evaded taxes more often than the same group in Albania, and more often than teachers and personnel in both countries. Furthermore, Albanian university students over-report the income more often than the high school pupils. However, in their study it can be criticised that they also used specific subject pools and not general population distribution. First of all, many of the subjects in the experiments of Gërkhani and Schram (2001) do not pay taxes. Pupils might not be a good subject group to analyse tax compliance. In general, highly educated people working or studying in the education sector participated in the experiment. Thus, it might be difficult to draw general conclusions based on the used subject pools.

Our experiment has been conducted in Arenal, a small village in Costa Rica (in 1998, 2495 inhabitants, see INEC 2002, p. 36), with "real" taxpayers with a greater job variation compared to the experiment by Gërkhani and Schram (e.g., teacher, housewife, cook, student, farmer etc.). Costa Rica is an interesting country to do experiments as it has been one of the most stable democracies in Latin America. The top marginal income tax rate is 25 percent, the average taxpayer's marginal is 0 percent. Any individual employed in Costa Rica pays a monthly withholding tax based on his/her salary. Thus, Costa Rica has not a self-filling

system as Switzerland or the United States (for a general overview about Costa Rica see Torgler 2003a).

As we were doing an experiment with individuals from different backgrounds, we paid attention to the design being easy to understand. Thus, we have not conducted a laboratory experiment. This procedure is quite novel in the tax compliance literature. We do not find many experiments that work with real taxpayers. Furthermore, there are hardly any experiments conducted in Latin America. Section II introduces the experimental design, Section III presents the empirical results and the paper finishes in Section IV with some concluding remarks.

II. EXPERIMENTAL DESIGN

While many experiments have focussed on the effect of deterrence factors as, e.g., fine rate and audit rate, more recent experiments put more stress on letting these deterrence factors constant and analysing to which extent other determinants matter (e.g., Bosco and Mittone 1997, Torgler 2002a). Tax compliance experiments, at first strongly motivated by theory, get now an incentive to go beyond simple theoretical concepts based on the traditional deterrence factors and check the relevance of social and institutional factors (for surveys, see Torgler 2002b). Taxpayers may be driven by moral rules and sentiments. They might bear moral costs if they do not pay the taxes and act as free-riders. In this paper we are going to show that the instrument of deterrence is not the only instrument to make individuals comply. We are going to test the effects of different factors as, e.g., fiscal exchange, morale suasion, or positive rewards. Each instrument is measured by a specific treatment. Thus, we are going to have the possibility to check each instrument in relation to the basic group, which allows to analyse the efficiency of each instrument.

The 37 subjects in our experiment are volunteers from Arenal, a small village in Costa Rica. All subjects participated for the first time in an experiment. Each session lasted about 40 minutes and they earned between 5 and 15\$, depending on the amount of money they declared. It was not allowed to communicate with each others. We did not use fictive tokens as currency but real money. Tax compliance experiments have been criticised for being conducted with students. Thus, the experiment in Arenal was carried out with taxpayers having different professions. Furthermore, to reduce artificiality, individuals received real

money in an envelope and from this money they had to give back a certain amount, similar to taxes. For simplicity, we conducted only one round.

In all experiment sessions we had a basic structure. People received an assigned income. They were informed that they had to pay back 1/3 of the amount. They had to decide how much they were willing to pay back to us. This decision was taken anonymously. Other participants could not see how much a person decided to pay back (see the Appendix for the experiment instructions).

People were well informed about the punishment parameters fine rate and audit probability. With this we wanted to control possible effects or bias based on uncertainty. They were confronted with a simple experiment based on neutral terms which helps to mask the context of the experiment, increase the control over subject preferences, and avoid making subjects invoke different mental scripts (see Alm 1998). In addition to the experiment, subjects also completed a post-experimental questionnaire (see Appendix). The questionnaire helps to get further control variables. Each treatment group was divided into two sub-groups. These two sub-groups received different amounts of money, 3'000 Colones (around 9 Dollars) and 1'500 Colones¹. Four treatments have been made: 1) a control group, 2) a fiscal exchange group, 3) a moral suasion group, and 4) a positive rewards group. The degree of compliance in group two through four is compared with the control group.

The audit process followed a random procedure, with the probability of 1/6 to be audited. After the declaration, for every envelope a die was thrown. If the 6 was drawn, the envelop was checked for noncompliance. The throwing of the dice was done by a neutral person. Before the experiment started, participants were informed that they could observe the drawing process. This helps to produce a certain procedure transparency. The fine was 500 Colones (low income group) and 1'000 Colones (high income group) and thus was not dependent upon the amount a person did not declare. In the next subsections we are going to explain shortly the structure of the different sessions.

1. Fiscal Exchange/Moral Costs Treatment

Exchange equity refers to the perceived fairness of what taxpayers receive from the government in exchange for their paid taxes. We considered a treatment in which a public

¹ The amount of 1500 Colones was divided into 1*500 Colones coin, and 10*100 Colones coins. The amount of 3000 Colones was divided into 1*1000 Colones bill, 1*500 Colones and 15*1000 Colones coins.

good is provided. To analyse the recognition of government services, consumers' surplus derived from government provision of the public good was 2. The resulting amount was then redistributed in equal shares to the members of the group². To prevent framing effects, subjects were not informed that the surplus multiplier was a result of the state's efficiency. We would predict that higher surplus multipliers lead to higher tax compliance. Furthermore, the surplus multiplier is not only an indicator of state efficiency, but also a factor that might have an effect on the moral costs of behaving dishonestly (see Torgler 2002a).

2. Moral Suasion Treatment

If moral sentiments or moral commitments play an important role in the degree of tax compliance, it might be interesting to analyse to which extent moral suasion can influence moral sentiments and thus the degree of co-operation. Surprisingly, tax compliance literature has rarely analysed the effects of moral suasion on tax compliance (exceptions Blumenthal et al. 2002, Torgler 2003b). One of the main problems in the analysis of moral suasion with experiments is the way moral suasion is integrated in the design. There might be a difference between the intention of the message delivered and the way people interpret this normative communication (see Bardach 1989). Thus our intention was to communicate it short and clear. We did not use a long letter as in the field experiment of Blumenthal, Christian and Slemrod (2001). It is difficult to control to which extent people react to letters. Letters might give way to different interpretations and therefore reduce the control mechanism of experiments. We used the following statement:

Although we will not be able to find out who among you might have been dishonest we want to point out that we greatly appreciate your behaving honestly and paying back the whole amount we have asked you for.

² Other authors have also implemented multipliers. Alm, McClelland and Schulze (1992) found that surplus multiplier increases the average group compliance in a non-linear way. The results of Alm, Jackson and McKee (1992c) indicate that the average compliance is always higher in the presence of the public good. However, the introduction of fiscal uncertainty in the presence of a public good lowers the average compliance rate relatively to the base case. In a laboratory experiment over 12 rounds Torgler (2002a) has shown that, beside the positive effect of exchange and moral costs which have the tendency to increase tax compliance, there might be a reverse effect. If the redistribution sum decreases, individuals notice that many individuals evade taxes which can crowd out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic. This feeling and reaction could increase with the surplus multiplier. Therefore, the net tax compliance effect is not clear.

As we have done only one experimental round we would predict that moral suasion has a positive effect on tax compliance.

3. Positive Reward Treatment

It might be interesting to focus on a different tax policy strategy than punishment to increase tax compliance: working with rewards. Rewards could be more effective than punishments for eliminating undesired behaviour or for motivating (see, e.g., Nuttin and Greenwald 1968). According to the author's knowledge there is only one theoretical study published in the *Public Finance Quarterly* by Falkinger and Walther (1991) that analysed the possibility of pecuniary rewards as an economic incentive for taxpayers to be honest. In their model a taxpayer who is investigated has to pay a penalty for the evaded tax and receives a reward for the paid tax. The authors show that on the one hand a mixed penalty-reward system improves the taxpayer's position and on the other hand does not lower the tax revenues of the government. Thus, introducing rewards coupled with an increase of the penalty constitutes a welfare improvement. The work of the authors shows that the analysis of positive rewards might be an important topic in the tax compliance literature which is just at its beginning:

“It is surprising that up to the present neither theoretical tax-evasion analysis nor the practiced policy against tax evasion has taken into account the possibility of a mixed penalty-reward system” (Falkinger and Walther 1991, p. 77).

Alm, Jackson and McKee (1992a) have used experiments to analyse the effects of positive inducements upon tax compliance behaviour. The results indicate that positive inducements have a significant and positive impact on compliance.

In the positive reward session, a subject audited and found to be fully honest received a reward of 500 Colones in the low income group and 1'000 Colones in the high income group. Such a reward can also be seen as a compensation for the burden of investigation which the taxpayer has to pass if s/he is audited (see Falkinger and Walther 1991). We would expect that a positive reward would increase tax compliance.

4. Modelling the Incentive Structure in the Different Sessions

1. Control Group

We are going to start with the basic structure and thus with the control group. An individual i receives an amount of Y Colones. A subject has to give back $Y/3$. However, the subject can decide to keep between Y and $Y/3$ Colones and thus to return between 0 and $Y/3$ Colones. Each subject decides to be honest (H) or not honest (NH). Non honesty means that a subject does not pay back anything. The expected utility of *not being honest* $E(U(nh))$ for each individual is

$$E(U(nh)) = (1-p)Y + p(Y-f) \quad (1)$$

where:

Y is the received income

p is the probability of detection and

f the fine rate

The first part of the equation indicates the utility level if the taxpayer escapes detection, the second part, if the taxpayer is caught and punished. If we simplify Equation 1 we obtain the following equation:

$$E(U(nh)) = Y - pf \quad (2)$$

The expected utility of being honest ($E(U(h))$) is:

$$E(U(h)) = Y - Y/3 \quad (3)$$

An individual will have the incentive not to be honest if :

$$Y - pf > Y - Y/3 \quad (4a)$$

$$pf < Y/3 \quad (4b)$$

Equation 4b indicates that it depends on the audit probability, the fine rate and the amount to pay back whether a subject is honest or not. If we integrate our design factors into condition 4b (for income one: $p=1/6$, $f=500$, $Y/3=500$, for income two: $f=1'000$, $Y/3=1'000$) we find that not being honest is the dominant strategy.

2. Fiscal Exchange Group

Equation 1 and Equation 3 have changed the following way:

$$E(U(nh)) = (1-p) (Y + msG) + p (Y-f + msG) \quad (5)$$

$$E(U(h)) = Y - Y/3 + ms(G+Y/3) \quad (6)$$

where m is the surplus multiplier, s the individual's share of the group fund and G the amount the other group subjects have paid back, $ms(G)$ is the amount someone who was not honest receives from the redistribution, $ms(G+Y/3)$ the amount someone receives from redistribution if s/he is honest. Equation 7 results from a simplification of Equation 5.

$$E(U(nh)) = Y - pf + msG \quad (7)$$

Compared to Equation 2 we have an addition of the term $+ msG$. Thus an individual will have an incentive not to be honest if:

$$Y - pf + msG > Y - Y/3 + ms(G+Y/3) \quad (8a)$$

$$pf - msG < Y/3 - ms(G+Y/3) \quad (8b)$$

$$pf < Y/3 - ms(Y/3) \quad (8c)$$

Condition 8c shows that not only the audit probability, the fine rate and the amount to pay back influence subject's behaviour but also the surplus multiplier and the share each person receives from the group fund. In our treatment design we have set the following conditions: $m=2$, $s=1/8$. The surplus multiplier in our case should be c.p. higher than 6.67 to create the incentive to be honest. Thus, also in this setting or model it is the dominant strategy not to comply.

3. Moral Suasion Group

Traditional economics would use the same model we have used in the control group arguing that moral costs have no effect on tax compliance. However, it could be argued that moral suasion “activates” our moral costs of not complying. People may not be comfortable with dishonesty. In order to consider this argument, the utility function in Equation 1 could be expanded with a new factor d , which measures the disutility of not being honest. But it can also be argued that moral suasion does not “activate” moral costs but “enforces” the moral costs of not complying. This would mean that we multiply the factor d with a factor a which measures the efficiency of the moral suasion. Moral suasion can have the intention to enforce tax compliance ($a > 1$), like in our design. On the other hand appeals could have the intention to convince people not to pay their taxes ($a < 1$) and thus to reduce moral costs. Such a situation could, for example, happen if people are unhappy about the way the state treats taxpayers. If we see moral suasion as an enforcement mechanism, the expected utility of *not being honest* $E(U(nh))$ for each individual would have the following structure:

$$E(U(nh)) = (1-p)Y + p(Y-f) - ad \quad (9)$$

Thus, an individual will have the incentive to comply if:

$$pf + ad > Y/3 \quad (10)$$

However, the problem of such a modelling is that moral costs are not directly observable. It is thus difficult to have an idea about the degree of d . There is the risk of modifying d to make it fit the observations.

4. Positive Reward Group

In the positive reward session someone receives a reward if s/he is audited and found to be honest. The expected utility of being honest ($E(U(h))$) in Equation 3 changes as follows:

$$E(U(h)) = Y - Y/3 + pR \quad (11)$$

where R is the reward. An individual will have the incentive to be honest if:

$$pf + pR > Y/3 \quad (12)$$

In our design structure it would still be rational not to comply. The reward must be of more than 2'500 Colones in the low income group to create the incentive to be honest.

III. EXPERIMENTAL RESULTS

The data evaluation will be done with traditional statistical methods, taking into account the small number of observations. First of all, *Table 1* presents the results of the descriptive analysis.

Table 1
Tax Compliance Rate in the Different Groups

		<i>Tax Compliance (in %)</i>		
		<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
GROUP	1	57.50	8	43.01
	2	85.00	8	35.05
	3	90.00	8	19.27
	4	100.00	13	0.00
	Total	85.41	37	30.42

As we can see, our control group (group 1) has the lowest tax compliance. The highest tax compliance rate can be found in the positive reward session followed by the moral suasion session and the fiscal exchange treatment. It seems that the norm of reciprocity in the degree of tax compliance is followed by taxpayers where the government creates positive rewards or a fiscal exchange. The more the governments in exchange for an adequate tax price provide public services corresponding to taxpayers' preferences, and the more they honour honesty, the more taxpayers are willing to comply.

In general, the compliance rate is surprisingly high in the treatment groups 2, 3 and 4. It cannot be argued that the stakes that could be earned in our experiment in Costa Rica were so low that people had no incentives to opt for profit. Furthermore, it is interesting to notice

that the moral suasion group had a higher compliance rate than the fiscal exchange session and that nobody in the positive reward session tried to evade, although the model indicates that it would be rational not to be honest. These findings are in line with many other experiments done with students which indicate that the compliance rate is higher than the expected utility model would predict. Such results motivate to expand the traditional expected utility theory we have used in Equation 1 and to check the relevance of other theories.

Interdependencies among the observations have been avoided using an appropriate design, where people participate only once in a specific group. This allows us to use independent sample methods. Evaluations of experiments often use nonparametric tests as it can be risky to presume that errors are normally distributed. Davis and Holt (1993) point out that experimental data has often a non-normal structure. Siegel and Castellan (1988) point out that a nonparametric statistical test specifies only very general conditions and none regarding the specific form of the distribution from which the sample was drawn. To test whether there is a significant difference between the treatment groups and the control group regarding the tax compliance rate, a Wilcoxon-Mann-Whitney test is often used in experiments. However, many experiments disregard that this test assumes that the distributions are the same, implying that the variability or variance of the distribution are equal (see Siegel and Castellan 1988). Some researchers have shown that the Wilcoxon-Mann-Whitney test is not always appropriate, showing that its real level is highly sensitive to the combination of differently sized samples and different population levels of dispersion. On the other hand, the robust rank-order test is less sensitive to changes in distributional assumptions than the Wilcoxon-Mann-Whitney test (see Feltovich 2003, Zimmerman 1987, Zimmermann and Zumbo 1993a, 1993b). Looking at our data set it makes sense to test the hypothesis, without assuming that the underlying distributions are the same, because the groups may differ in terms of variability. Therefore, a robust rank-order test has been used which was developed by Fligner and Pollicello (1981). The null hypothesis would be that the tax compliance rates in the treatment groups are as in the control group. As with values as large as \hat{U} the probabilities associated with the occurrence of the null hypothesis being true may not be determined by the normal distribution in the first three groups (8 observations), we use the tabled distribution for small sample sizes offered by Siegel and Castellan (1988). The robust rank-order test statistic \hat{U} focussing on the differences between group 1 (control group) and 2 (fiscal exchange group) is 1.031. References to the table in Siegel and Castellan³ show that the probability of obtaining a sample value of \hat{U} as large as 1.031 when H_0 is true exceeds 0.10 (critical value

³ See also the tables of Fligner and Pollicello (1981) or Feltovich (2003).

1.295). Thus, the hypothesis H_0 cannot be rejected⁴. On the other hand, analysing group 1 and 3 (moral suasion) shows a \hat{U} value of 2.191 which is beyond the critical value of $\alpha=0.10$ but does not reach the value of $\alpha=0.01$ (2.954). Thus, we may reject the hypothesis H_0 that there is no difference between group 1 and group 3. As the group 4 (positive rewards) has the highest compliance rate (100 percent), it can be supposed that there is a significant difference between group 1 and group 4.

Thus, the results indicate that positive incentives seem to be a good instrument to enhance tax compliance. The relatively strong effect of moral suasion is surprising. However, one important question regarding the effect of moral suasion is not analysed with such an experiment. Does moral suasion have sustainable influence over time? It might create a certain enthusiasm which gradually fades out over time. There are quite a few arguments against a long term effect of moral suasion on attitudes and behaviour. Contrary to Schwartz and Orleans (1969), McGraw and Scholz (1991) did not find any effect of normative communication on tax compliance. As Blumenthal et al. (2001) point out, an explanation for this could be that the time between experimental manipulation and the tax filing deadline was longer (over three months, compared to one month in the experiment of Schwartz and Orleans).

Now we are going to analyse differences in the tax compliance rate regarding the control variables. *Table 2* presents the results. We do not find a big difference between female and male. The tax compliance rate is a bit higher for female. The compliance rate for people with a higher income was lower (76.32%) than for those who received the lower income (95.00%). The result is interesting as we have not used a progressive taxation, which produces the effect that higher income subjects realise a higher dollar return by evading. Looking at the education, the highest compliance rate has been found by persons with a university degree. It is difficult to evaluate the results regarding the different confessions, as most of the participants are catholic. The small number of protestants or individuals without a confession had on average a higher tax compliance than catholic inhabitants. A stronger difference can be found using the variable "religious denomination". People who defined themselves as religiously active had a higher tax compliance than inactive individuals. In many countries, the degree of church attendance has a positive effect on tax morale. Furthermore, there is almost no difference between married and unmarried individuals.

⁴ As the sample size of both group is lower than 12, a special sampling distribution table has to be used. As the sample size increases, the distribution of \hat{U} approaches that of the unit normal distribution (see Siegel and Castellan 1988).

Table 2
Further Variables

		<i>Tax Compliance (%)</i>		
		<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
<i>GENDER</i>	Male	83.00	10	33.35
	Female	86.30	27	29.89
	Total	85.41	37	30.42
<i>INCOME</i>	1500	95.00	18	12.95
	3000	76.32	19	38.90
	Total	85.41	37	30.42
<i>EDUCATION</i>	primary school	84.50	20	31.37
	secondary school	82.00	10	38.24
	University	92.86	7	12.54
	Total	85.41	37	30.42
<i>CONFESSIO</i>	no religion	100.00	3	0.00
	catholic	80.74	27	34.41
	protestant	96.00	5	8.94
	Total	84.57	35	31.09
<i>RELIGIOUS</i>	no	79.00	10	39.57
	yes	87.31	26	27.21
	Total	85.00	36	30.75
<i>MARRIED</i>	no	86.36	11	26.93
	yes	85.00	26	32.28
	Total	85.41	37	30.42

IV. CONCLUSIONS

Our experimental setting with “real” taxpayers in Costa Rica, a Latin American country, is novel. Most of the experiments have been done with students. This has been criticised by some researchers. As we worked with average taxpayers we made our experiment short, clear and understandable, in order not to make subjects bored or confused. We have made an effort to explain the instructions thoroughly. However, we have avoided to give examples which could lead to anchors and thus influence the way people act in the experiment. A quite novel framework was also to give individuals the designed income not as a fictive amount but in

cash. This procedure induces a higher realism of the experiment and thus a higher external validity.

Whereas much work in the tax compliance literature has concentrated on standard factors as audit, penalty, and tax rate, in our design we tried to evaluate alternative policy instruments. To compare the effects of the instruments it was important to include them all in one experiment. Thus, a main purpose of this experiment was to hold these traditional factors constant, and to analyse to which extent other factors, as fiscal exchange, moral suasion, and positive rewards systematically influence tax compliance. Our findings indicate that these factors *ceteris paribus* increase compliance rate. These policy instruments could merit further development in the tax compliance research agenda.

However, interpretations of our findings should be done with some caution. Although we find many experiments with less participants than in ours, the sample size is very small. To get robust and convincing findings, the experiment should be replicated. Experiments offer a good instrument to analyse possibilities and limitations of alternative theories. As we have a lack of experiments with taxpayers instead of students as subjects, it might be interesting to do cross-country studies with such an experimental design.

There are still many unanswered questions. How, for example, does the phenomenon of moral suasion trade off against a variation in the private stakes? Would a systematic replication of this experiment, increasing strongly the earned income, reduce the effects of moral suasion? Is there a negative relationship between the effects of moral suasion and the time span? Individual's willingness to comply could change over time. Our experimental structure has the limitation that its design, using only one round, is static. The decision to evade or not is rather a dynamic than a static problem, because taxes are paid regularly every year. Thus, the effects of policy instruments should be observed over time. Future research could pay more attention to time related effects regarding tax evasion and tax compliance.

APPENDIX

A1. ORIGINAL INSTRUCTION SHEET

*1. Instructions for Group 1 (control group)**(page one)***GRUPO 1**

Muchas gracias por su participación en este experimento. En la mesa encontrará usted un formulario y un cuestionario.

El formulario da información sobre:

1. Su ingreso asignado (1500 Colones o 3000 Colones)
2. El monto que usted nos debe devolver:
 - 500 Colones o 1.000 Colones
3. La exactitud con la cual les estaremos controlando
4. El monto del castigo si nos enteramos que usted no se ha comportado correctamente:
 - 500 Colones o 1.000 Colones

En el formulario usted puede decidir que monto nos quiere devolver. Su decisión es anónima. En el sobre grande usted encontrará también junto con el formulario 3 tiquetes numéricos que les van a brindar la seguridad de que la devolución del dinero es anónimo. Además encontrará 2 sobres con los siguientes nombres: "ENTREGA" y "PERSONAL".

El experimento funciona de la siguiente manera:

1. Por favor rellene primero el formulario y el cuestionario
2. Usted debe tomar ahora su decisión y meter el formulario, el cuestionario y el dinero que nos quiere devolver en el sobre "ENTREGA". El dinero, con el que usted quiere quedarse, por favor de depositar en el sobre "PERSONAL".
3. Meter un tiquete en el sobre "ENTREGA" y un tiquete en el sobre "PERSONAL".
4. Depositar los 2 sobres en el sobre grande
5. Guarde el tercer tiquete, con el cual usted puede retirar su dinero. Por favor no mostrar a nadie.

Después por favor depositar el sobre en la caja de su grupo, es decir INGRESO 1 o INGRESO 2, y regresar a su lugar hasta que todos los participantes hayan depositado sus sobres.

(page two)

FORMULARIO

Con la entrega de cada formulario jugaremos a los dados. Si aparece el número 6 revisaremos su formulario detalladamente.

Si se decide entregarnos menos de lo requerido, usted tendrá el riesgo que nos demos cuenta de este delito. Solamente en el caso que nos enteremos de este fraude, tendrá que pagar una multa de 500 Colones y 1.000 Colones.

Su ingreso personal es de 1.500 Colones o 3.000 Colones.

De mi ingreso recibido devuelvo el siguiente monto:

..... Colones

Instructions for group 2, 3 and 4: Equal, but with a supplementary part in the declaration sheet

Supplementary Part:

GROUP 2

También debe saber, que el monto total que usted nos ha devuelto, será duplicado y repartido igualmente entre todos los participantes.

GROUP 3

Como no es posible averiguar quién de ustedes se ha comportado deshonesto, les queremos recordar que apreciaríamos muchísimo si usted se comportara honestamente y nos devolviera el monto que le estamos solicitando

GROUP 4

Si al examinar su formulario nos damos cuenta, que usted ha entregado el monto requerido, le daremos una propina de 500 Colones o 1.000 Colones.

CUESTIONARIO

Participante:

Sexo: masculino femenino

Edad:

Estado civil: soltero(a)
 casado(a)
 divorciado(a)
 viudo(a)

Religión: católica
 protestante
 otra religión
 sin religión

¿Practica usted activamente su religión? si no

¿Cuántas veces por mes participa en actividades religiosas?

Nacionalidad:

Profesión:

Estudios: primaria
 secundaria
 universitaria

a) ¿Que cree usted, cuantos participantes se comportarán honradamente (en %)?

..... %

b) ¿Se lamentaría usted si otro participante se comportara deshonesto?

(1= de ninguna manera) 1 / 2 / 3 / 4 / 5 (5= muchísimo)

AII. TRANSLATION OF THE INSTRUCTION SHEET

Group 1

Thank you for participating in this experiment. On your table you will find a form and a questionnaire. The form contains the following informations:

- a) the income assigned to you (1500 Colones or 3000 Colones)
- b) the amount you will have to pay back (500 Colones or 1000 Colones)
- c) how exactly you are going to be controlled
- d) the amount of the penalty if we find out that you have not been honest (500 Colones or 1000 Colones)

You have to decide and indicate in the form how much you are prepared to pay back to us. You take your decision anonymously. In the big envelope you will find, besides the form, three tickets which will guarantee your anonymity when collecting your money. Further you will find two envelopes with the following labels: "Payment" and "Personal".

The experiment will go as follows:

1. First fill in the form and the questionnaire, please.
2. Make your decision and put the form, the questionnaire and the money you are going to pay back to us in the envelope labeled "Payment". Please put the money you want to keep for yourself in the envelope labeled "Personal".
3. Put one ticket in the envelope labeled "Payment" and one in the envelope "Personal".
4. Put the two small envelopes in the big one.
5. Keep the third ticket you need to collect your money, and do not show it to anybody.

Put the envelope in the box marked with your group's number (e.g., "Income 1" or "Income 2"), go back to your place and wait until everybody has handed in the envelopes.

FORM

Participation number:

For every form handed in we are going to cast a die. If we cast a 6, we are going to check the form.

If you decide to give less than requested, you risk being caught. In this case (only if you are caught) you have to pay a fine of 500 or 1000 Colones.

Your personal income is 1500 Colones or 3000 Colones.

I herewith pay back the following amount out of my income:

..... Colones

Supplementary Part:

GROUP 2

You should further know that the whole amount paid back to us will be doubled and distributed in equal shares among all participants.

GROUP 3

Although we will not be able to find out who among you might have been dishonest we want to point out that we greatly appreciate your behaving honestly and paying back the whole amount we have asked you for.

GROUP 4

If in a check we find out that you have regularly paid the amount requested, you will be rewarded with an extra payment of 500 Colones or 1000 Colones.

QUESTIONNAIRE

Participation number:

Sex: male female

Age:

Marital status: single
 married
 divorced
 widowed

Religion: catholic
 protestant
 other confession
 without a confession

Do you actively practice your religion? yes no

How often do you attend religious services these days?

Nationality:

Profession:

Education: Primary school
 Secondary school
 University

a) What do you think, how many of the other participants will evade taxes? (in %)?

..... %

c) How much do you regret that some of the other participants have decided to evade their taxes?

(1= not at all) 1 / 2 / 3 / 4 / 5 (5= a lot)

REFERENCES

- Allingham, M. G. and A. Sandmo (1972). Income Tax Evasion: A Theoretical Analysis, *Journal of Public Economics*. 1: 323-338.
- Alm, J. (1991). A Perspective on the Experimental Analysis of Taxpayer Reporting, *The Accounting Review*. 66: 577-593.
- Alm, J. (1998). Tax Compliance and Administration, working paper, University of Colorado at Boulder.
- Alm, J., B. R. Jackson, and M. McKee (1992a). Deterrence and Beyond: Toward a Kinder, Gentler IRS, in: J. Slemrod (ed.), *Why People Pay Taxes*. Ann Arbor: University of Michigan Press: 311-329.
- Alm, J., B. R. Jackson and M. McKee (1992b). Estimating the Determinants of Taxpayer Compliance with Experimental Data, *National Tax Journal*. 45: 107-115.
- Alm, J., B. R. Jackson, and M. McKee (1992c). Institutional Uncertainty and Taxpayer Compliance, *American Economic Review*. 82: 1018-1026.
- Alm, J., G. H. McClelland and W. D. Schulze (1992). Why Do People Pay Taxes?, *Journal of Public Economics*. 48: 21-48.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 48: 141-171.
- Baldry, J. C. (1987). Income Tax Evasion and the Tax Schedule: Some Experimental Results, *Public Finance*. 42: 357-383.
- Bardach, E. (1989). Moral Suasion and Taxpayer Compliance, *Law and Policy*. 11: 49-69.
- Bosco, L. and L. Mittone (1997). Tax Evasion and Moral Constraints: Some Experimental Evidence, *KYKLOS*. 50: 297-324.
- Blumenthal, M., C. Christian and J. Slemrod (2001). Do Normative Appeals Affect Tax Compliance? Evidence from a Controlled Experiment in Minnesota, *National Tax Journal*. 54: 125-138.
- Davis, D. D. and C. A. Holt (1993). *Experimental Economics*. Princeton: Princeton University Press.
- Falkinger, J. and H. Walther (1991). Rewards versus Penalties: On a New Policy Against Tax Evasion, *Public Finance Quarterly*. 19: 67-79.
- Feltoich, N. (2003). Critical Values for the Robust Rank-Order Test, mimeo, University of Houston.
- Fligner, M. A. and G. E. Policello, II (1981). Robust Tank Procedures for the Behrens-Fisher Problem, *Journal of the American Statistical Association*. 76: 162-168.
- Friedland, N., S. Maital and A. Rutenberg (1978). A Simulation Study of Income Tax Evasion, *Journal of Public Economics*. 10: 107-116.
- Gërkhani, K. and A. Schram (2001). Tax Evasion and the Source of Income: An Experimental Study in Albania and the Netherlands, University of Amsterdam, CREED Working Paper.
- INEC (2002). Anuario Estadístico de Costa Rica, años 1993 a 1998, capítulo 2, Población, www.inec.go.cr.

- McGraw, K. and J. T. Scholz (1991). Appeals to Civic Virtue Versus Attention to Self-Interest: Effects on Tax Compliance, *Law and Society Review*. 25: 471-498.
- Schwartz, R. and S. Orleans (1967). On Legal Sanctions, *University of Chicago Law Review*. 34: 282-300.
- Siegel, S. and N. J. Castellan, Jr. (1988). *Nonparametric Statistics for the Behavioral Sciences*. New York: McGraw-Hill Book Company.
- Torgler, B. (2002a). Vertical and Exchange Equity in a Tax Morale Experiment, WWZ-Discussion Paper 02/02, Basel: WWZ.
- Torgler, B. (2002b). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-684.
- Torgler, B. (2003a). Cross Culture Comparison of Tax Morale and Tax Compliance: Evidence from Costa Rica and Switzerland, WWZ Discussion Paper 03/05, Basel: WWZ.
- Torgler, B. (2003b). Moral Suasion: An Alternative Tax Policy Strategy? Evidence from a Controlled Field Experiment in Switzerland, WWZ Discussion Paper 03/05, Basel: WWZ
- Webley, P. (1987). Audit Probabilities and Tax Evasion in a Business Simulation, *Economics Letters*. 25: 267-270.
- Webley, P. and S. Halstead (1986). Tax Evasion on the Micro: Significant Simulations or Expedient Experiments?, *Journal of Interdisciplinary Economics*. 1: 87-100.
- Webley, P., I. Morris and F. Amstutz (1985). Tax Evasion During a Small Business Simulation, in: H. Brandstätter and E. Kirchler (eds.), *Economic Psychology*. Linz: Trauner: 233-242.
- Webley, P., H. Robben and I. Morris (1988). Social Comparison, Attitudes and Tax Evasion in a Shop Simulation, *Social Behaviour*. 3: 219-228.
- Webley, P., H. Robben, H. Elffers and D. Hessing (1991). *Tax Evasion: An Experimental Approach*. Cambridge: Cambridge University Press.
- World Economic Forum (1999). *The Global Competitiveness Report*. Oxford: Oxford University Press.
- Zimmerman, D. W. (1987). Comparative Power of Student T Test and Mann-Whitney U Test for Unequal Sample Sizes and Variances, *Journal of Experimental Education*. 55: 171-174
- Zimmerman, D. W. and B. D. Zumbo (1993a). Rank Transformations and the Power of the Student t Test and Welch t' Test for Non-normal populations with unequal variances, *Canadian Journal of Experimental Psychology*. 47: 523-539.
- Zimmerman, D. W. and B. D. Zumbo (1993b). The Relative Power of Parametric and Nonparametric Statistical Methods, in: G. Keren and C. Lewis (eds.), *A Handbook for Data Analysis in the Behavioral Sciences: Methodological Issues*. Hillsdale: Erlbaum: 481-517.

CHAPTER XXI

TAX AMNESTY AND POLITICAL PARTICIPATION:

EVIDENCE FROM SWITZERLAND*

ABSTRACT

In many countries thinking about a (new) tax amnesty is currently in vogue. However, cross-national experience shows that the financial success of such a tax amnesty is not granted. Furthermore, it is debated whether in the long run tax amnesties undermine tax compliance. We show in a laboratory experiment that if taxpayers have the opportunity to vote on a tax amnesty, they refuse such an offer even in the case of a public discussion prior to ballots. But interestingly, tax compliance raises significantly after the vote indicating that on the one hand the voting procedure induces a kind of civic duty, as taxpayers become aware of the importance to contribute to the provision of public goods. On the other hand, the amnesty proposal sends a signal to taxpayers that the government wants to fight tax evasion, inducing voters to comply afterwards in order to reduce the likelihood of stricter enforcement efforts. Furthermore, an amnesty appears to be more effective in generating tax compliance when combined with an increase in the enforcement parameters than an amnesty without changes in the enforcement factors. Finally, the positive effects of a tax amnesty are reduced if people count on future acts of grace.

JEL classification: H260, 9160

Keywords: tax amnesty, tax compliance, voting behaviour

* Benno Torgler and Christoph A. Schaltegger (2003). Tax Amnesty and Political Participation, WWZ-Discussion Paper 03/07, Basel: WWZ.

I. INTRODUCTION

Tax amnesties are in vogue! In November 2001 Italian Finance Minister Giulio Tremonti declared a new tax amnesty “scudo fiscale” which expired in May 2002. According to the Italian government some 56 billion Euros of exiled money have returned to the fold during the amnesty. The returning money came in for a 2.5% tax so that the Italian government produced 1.4 billion Euro additional tax revenues (about 0.4% of total tax revenues). Now, the Italian government discusses already a new tax amnesty “super-scudo” which will expand the remission to firms. Similarly, the Polish government enacted a tax amnesty from September 2002 till April 2003 where the declared money is taxed by 12%. In Summer 2002, the German chancellor, Gerhard Schröder, brought up a tax amnesty for discussion, with the intention to induce a major reflux of German flight capital laying in tax havens abroad. The Swiss minister of finance, Kaspar Villiger, presented a model for a general tax amnesty in 2000. Since his proposal was heavily disputed in the cabinet as well as in the public, the model was changed in 2001, so that the planned tax amnesty only applies to inherited money which had not been declared before.

Such a huge political interest in tax amnesty programs might suggest that tax amnesties are a major financial success for the government at least in the short run. However, the amount of additional money produced by tax amnesties is in general not very important. For example, in a comprehensive overview of 43 tax amnesties in 35 US states between 1982 and 1997, Hasseldine (1998) shows that the highest amount of money collected through a tax amnesty did not exceed 2.6% of total tax revenues whereas the lowest collection rate accounted for 0.008%, only. Furthermore, it is debated whether in the long run tax amnesties undermine tax morale. For example, honest taxpayers may feel upset by an amnesty. If most taxpayers voluntarily comply with tax laws, the option of an amnesty given to a small group of tax evaders can be understood by a majority of taxpayers as a violation of equity. The issue has a moral dimension since it touches sentiments of taxpayers. Thus, it is also possible that an amnesty ends up in a lower ex-post level of tax compliance.

Thus, when deciding whether or not to conduct an amnesty it is crucial to take taxpayers' attitude towards an amnesty into account. However, in hardly any country this was done by voters' approval¹. The aim of this paper is to evaluate the impact of voter participation on tax amnesties conducting a laboratory experiment. We show that voters in general do not like tax amnesties. Even when discussing the issue prior to voting, such a “soft

¹ An important exception is Switzerland where the latest tax amnesty in 1969 only passed a popular referendum after a major revision of the original law which had been refused in 1964.

option” given to tax evaders is refused. Voters might interpret the remission given by the government as a signal that tax evasion must be high and that other taxpayers’ tax morale is very low. Thus, voters don’t want to reward tax evaders with an amnesty. Nevertheless, the results of our experiment show that the mere possibility for taxpayers to decide on a tax amnesty increases future tax compliance. It seems that the voting procedure, namely public discussions prior to votes, is bringing about a sense of civic duty, as taxpayers become aware of the importance to contribute to public goods. Another reason why tax compliance raises after the votes lays in the possibility to reduce the likelihood of stricter enforcement efforts.

The remainder of the paper is as follows. In Section II we provide a survey on tax amnesties around the world with a special focus on Swiss tax amnesties². Even though tax amnesties are very popular for policymakers, data on the financial success are rare. In Section III the theoretical framework as well as a survey on previous empirical evidence is developed in order to motivate our empirical study. The experimental design of our analysis is shown in Section IV while the results are discussed in Section V. The paper finishes with some concluding remarks in Section VI.

II. A SURVEY ON TAX AMNESTIES

1. Tax Amnesties around the World

The main purpose of a tax amnesty is to increase governments’ revenues. It offers tax evaders the possibility to return into the tax system without the normal procedures of charging penalties and fines. Therewith, an amnesty is seen as a possibility to increase not only present but also future voluntary compliance, hoping that tax evaders are ready to take the chance to become honest in the future, and assuming that the delinquents will less likely fall back into non-compliance.

Tax amnesties as a fiscal program have already been conducted in many countries and are not new in history. The Rosetta Stone, the first “tax-oriented” documentation reports of a tax amnesty around 200 B.C. in Egypt, where tax rebels were released from prison. Tax amnesties were used as a remedy to check civil disorder. Tax amnesties are also known in the Roman Empire, where they were granted for the years A.D. 401, 411, 434, 445, 450 and 458

² The laboratory experiment took place in Switzerland so that subjects might be influenced by the Swiss experience on tax amnesties.

(see Adams 1994). During the last 30 years national amnesty programs haven't taken place virtually all over the world, in Belgium (1984), France (1982, 1986), Ireland (1988, 1993), Italy (1982, 1984, 2002), Spain (1977), Austria (1982, 1993), Argentina (1987, 1995), Columbia (1987), India (1981, 1997), Venezuela (1996), Panama (1974), Canada (1993), Puerto Rico (1988, 1991), Finland (1982, 1984), New Zealand (1988), Portugal (1981, 1982, 1986, 1988), Russia (1993, 1996, 1997) and other countries. *Table 1* gives an overview. As can be seen by the collection rate as a percentage of tax revenues, the financial success among the countries is very diverse. For example, tax amnesties in Argentina (1987) and France (1982) have not been successful in terms of additionally collected money. In the case of France, the general amnesty was accompanied by a special program to encourage repatriation of illegal capital held abroad. Only 19 million US \$ could be collected from 2'786 taxpayers under the French amnesty program. Similar, the French repatriation program had only 276 participants bringing back some 22 million US \$ (US Joint Committee on Taxation 1998, (JCT-2-98), p. 32).

On the other hand, India's amnesty in 1997 can be seen as a financial success³. During the 214 days of the amnesty, the Indian government collected 100 billion rupees additionally (\$2.5 billion dollars) from over 350'000 individuals, covering one half of the sum collected through income tax (Alm 1998a). This specific amnesty started with the slogan "30 percent taxes, 100 percent peace of mind" and was accompanied by intensive media activities. For example, the federal tax administration engaged a private marketing company in order to launch a "Voluntary Disclosure of Income Scheme" campaign. Even celebrities as sport and film stars promoted publicly the participation in the amnesty program. Another successful tax amnesty was implemented in Ireland in 1988. The collected revenues reached 15 times the amount expected. Presumably, increased post-amnesty enforcement and the fact that the Irish government previously never had enacted an amnesty might have been the reason for the relative success (see Alm 1998a). However, collections for the subsequent tax amnesty in 1993 were reported to be significantly lower (Hasseldine 1998, p. 306).

In Italy, tax amnesties are a frequent issue. In 1982, 5.15% of the 1981 tax return fillers participated. 8.5% of the participants had previously been full evaders whereas 13.7% reported additional income. The amnesty is seen as relatively successful since 15% of the 1982 income tax revenue could be repatriated (Cassone and Marchese 1995). The latest tax amnesty in Italy started in September 2001 and was planned to end in February 2002, but then

³ Contrarily, the Indian tax amnesty in 1981 did not succeed even though it could attract over 1 billion US \$ which is seen to be fairly substantial. One reason is that the Indian government did not raise as much money as it had anticipated. Furthermore, the amnesty did not succeed in widening the tax base, presumably because the enforcement mechanism remained the same (Uchitelle 1989, p. 51).

was extended until 15th May 2002. The program was targeted at getting back Italian flight capital from tax havens abroad. People holding illegal properties abroad had the opportunity to authorize a bank declaring their money to the Italian tax authorities. The bank then had to charge 2.5% of the declared property in order to send the amount to the Italian fiscal authorities. After this payment, the taxpayer was protected against controls by the tax authorities. Nevertheless, the so-called “Tremonti-decree” was heavily disputed since it contrasted latest efforts of the OECD, EU or IMF tax policy to foster tax enforcement (see for example: IMF Italy 2002 Article IV Consultation).

In the public, the latest Italian tax amnesty gained much attention. Some 56 billion Euro flight capital returned to the fold while the Italian government collected an additional amount of 1.4 billion Euro which is about 0.4% of all tax revenues. It was estimated that this amount accounts for about 12% of all Italian money laying abroad. Traditionally, a considerable amount of the Italian flight-capital is suspected to lie on Swiss bank accounts and other assets under management in Switzerland (according to the Italian central bank, Banca d’Italia, the value of assets laying in Switzerland amounts to 285 billion euros). Especially, near the Italian border in the financial centre of Ticino the Italian tax authorities suspect lots of emigrated capital. According to the Italian government, with the tax amnesty some 19.3 billion euros could be repatriated from Switzerland. 11.8 billion euros were regularized remaining assets under Swiss management.

On legal grounds of the Swiss banking secrecy, the Swiss Federal Tax Administration (FTA) has no detailed insider information about the amount of money that left Switzerland in connection with the “scudo fiscale”. However, according to the Swiss Bankers’ Association (SBA) the capital drain from Switzerland is not important even though differing from region to region. The most significant amount presumably was lost in the Ticino financial centre, where probably 400 billion Swiss Francs of managed assets have left. Notably, this amount exceeds what the Italian government reported for Switzerland as a whole. The UBS, one of the important financial intermediaries in Switzerland, with a share of nearly 40% of all managed assets in Ticino reports a net outflow of 3.8 billion Swiss Francs due to the Italian tax amnesty. Anyhow, they managed to retain almost half of the flow-back to Italy in their domestic bank operations. Smaller finance companies with a weak presence in the Italian market as well as fiduciaries more than 1’000 of which managed their commercial activities near Ticino suffer most from the Italian tax amnesty.

Table 1
Tax Amnesties Around the World

country	Amnesty Year	form/main taxes covered	Collection (\$ Mio.)	% of the tax rev.
Argentina	1987	previously unreported income for investment purpose	virtually no revenue	
Argentina	1995	General tax amnesty	3,900	
Australia	Twice during 80s	Participants in specific avoidance scheme, persons not lodging returns		
Austria	1982	All tax claims prior to 1979	poor results	
Austria	1993	special program to encourage repatriation of untaxed assets	increase of the tax base (around 58 percent)	
Belgium	1984/1985	Income exempted from tax if invested (e.g., government bonds)	poor results	
Colombia	1987	report previously unreported assets or over-reported liabilities	100	0.3 % of gross domestic product
Finland	1982/1984	Surplus Interest Affairs		
France	1982	general tax amnesty	19 (only 2786 participants)	0.007
		special program to encourage repatriation of untaxed assets	22 (only 276 participants)	0.008
France	1986	second special amnesty for assets held abroad		
India	1981	Government bonds designed for untaxed income		
India	1997	general tax amnesty	2,500	8.5
Ireland	1988	general tax amnesty	700-750	4.5
Ireland	1993	general tax amnesty	significantly lower than 1988	
Italy	1982	general tax amnesty	100	15
Italy	1984	Entrepreneurs and self employed	5,000	
Italy	2001/2002	special program to encourage repatriation of untaxed assets	1,400 (in Euro)	0.4
Netherlands	1934, 1940, 1945, 1955	1955, exemption from penalties and interest	very good	
New Zealand	1988	general tax amnesty	18 (good response)	
Portugal	1981, 1982, 1986, 1988	Limited to income taxation	40 % of the forecasted amount	
Russia	1993	enterprises, organisations, private entrepreneurs not liable for any sanctions on unpaid liabilities		
Russia	1996, 1997	enterprises and organisations were allowed to defer payments on the arrears	1996 (1997) negative (positive) but insignificant effect on revenues	
Spain	1977	Exemption from penalty for tax liabilities settled prior to 1976		

Sources: Alm (1998a, pp. 5-6), Alm, Martinez-Vazquez, Wallace (2001), Cassone and Marchese (1995, p. 62), Marchese and Privileggi (1997, p. 403). Feld (2002, p. 7), Hasseldine (1998, p. 307), OECD (1990, p. 90), US Joint Committee on Taxation 1998 (JCS-2-98, p. 31ff), and Uchitelle (1989, p. 50-52).

Case studies and comparisons of tax amnesties between countries give an interesting insight in possible determinants able to support the financial success of such a program. Anyhow, cross-national comparisons of amnesties are fraught with difficulties. For example, between

countries there are huge differences in the institutions⁴ as well as in the other (legal) constraints like enforcement activities. Therefore, it might be fruitful to analyse data on amnesties in a (culturally and legally) more uniform environment. One possibility is to look at the US states. Interestingly, most US states have made experiences with tax amnesties (see overview in *Table 2*). As can be seen in *Table 2*, most amnesties include all state taxes with the exception of Arizona, California, Idaho, and Oklahoma⁵. From November 29, 1982 till the present day, a considerable number of 62 amnesty programs have been conducted in US states (including the District of Columbia). However, as column 5 indicates, there is a strong variation of the repatriated revenues among the states. A minimal amount has been reported by Texas with a 0.006 percent collection rate. On the other hand, New Jersey collected 2.6 percent of total tax revenues which is the highest repatriation rate for US states. Hasseldine (1998) points out that an increase in the number of tax amnesties has a negative effect on the efficiency of the tax amnesty. A reason might be that taxpayers anticipate future amnesties if the government give them more than one opportunity to declare their evaded taxes. The incentive to wait for a next grace round increases.

Moreover, as can be seen in *Table 2*, the duration of the US state amnesties varies considerably. In Oklahoma, e.g., the amnesty period was of 6 months in 1984 compared to 3 days in North Carolina in 1989. On average, amnesty periods are of two or three months. In general, according to Fisher, Goddeeris and Young (1989) most collected revenues involve small payments (often less than 100\$). Another interesting variation concerns the percentage of non-filers that are captured by an amnesty. Experiences from California, Illinois, Iowa, Massachusetts, Michigan, and New York at the end of the 80s indicate a variation between 34% (Illinois) and 90% (New York) of non-filers.

⁴ Another reason for the success of a tax amnesty may be due to different sizes of the shadow economy among countries (see Schneider and Enste 2000).

⁵ Mikesell (1986) gives a detailed overview of US state amnesties regarding their liabilities, natures, limitations, payment conditions, resources, and amnesty results.

Table 2

US State Tax Amnesty Programs (1982-2002)

state	Amnesty Period	major taxes covered	Collection (\$ Mio.)	% of tax rev.
Alabama	20.01.84 - 01.04.84	All	3.2	0.1
Arizona	22.11.82 - 20.01.83	All	6.0	0.2
	01.01.02 - 28.02.02	Ind. Income		
Arkansas	01.09.87 - 30.11.87	All	1.7	0.09
California	10.12.84 - 15.03.85	Ind. Income	154.0	1.7
		Sales	43.0	0.5
Colorado	16.09.85 - 15.11.85	All	6.4	0.3
Connecticut	01.09.90 - 30.11.90	All	54.0	1.1
	01.09.95 - 30.11.95	All	46.2	0.6
	01.09.02 - 02.12.02	All		
Florida	01.01.87 - 30.06.87	All	13.0	0.09
	01.01.88 - 30.06.88	All	8.4	
Georgia	01.10.92 - 05.12.92	All	51.3	0.7
Idaho	20.05.83 - 30.08.84	Ind. Income	0.3	0.02
Illinois	01.10.84 - 30.11.84	All	160.5	2.2
Iowa	02.09.86 - 31.10.86	All	35.1	1.6
Kansas	01.07.84 - 30.09.84	All	0.6	0.04
Kentucky	15.09.88 - 30.09.88	All	61.1	1.9
	08.01.02 - 30.09.02	All	79.9	
Louisiana	01.10.85 - 31.12.85	All	1.2	0.04
	01.10.87 - 15.12.87	All	0.3	0.008
	01.10.98 - 31.12.98	All	1.3	
	01.09.01 - 30.10.01	All	173.1	
Maine	01.11.90 - 31.12.90	All	29.0	1.8
Maryland	01.09.87 - 02.11.87	All	34.6	0.7
	01.09.01 - 31.10.01	All	39.2	
Massachusetts	17.10.83 - 17.01.84	All	86.5	1.7
Michigan	12.05.86 - 30.06.86	All	109.8	1.3
	15.05.02 - 30.06.02	All		
Minnesota	01.08.84 - 31.10.84	All	21.1	0.3
Mississippi	01.09.86 - 30.11.86	All	1.0	0.06
Missouri	01.09.83 - 31.10.83	All	0.9	0.02
	01.08.02 - 31.10.02	All		
Nevada	01.02.02 - 30.06.02	All	7.3	
New Hampshire	01.12.97 - 17.02.98	All	13.5	
	01.12.01 - 15.02.02	All	13.5	
New Jersey	10.09.87 - 08.12.87	All	186.5	2.2
	15.03.96 - 01.06.96	All	359.0	2.6
	15.04.02 - 10.06.02	All	276.9	
New Mexico	15.08.85 - 13.11.85	All	13.6	2.1
	16.08.99 - 11.12.99	All	45.0	
New York	01.11.85 - 31.01.86	All	401.3	2.1
	01.11.96 - 31.01.97	All	277.5	0.9
	18.11.02 - 31.01.03	All		
North Carolina	09.01.89 - 12.01.89	All	37.6	0.5
North Dakota	01.09.83 - 30.11.83	All	0.2	0.02
Ohio	15.10.01 - 15.01.02	All	48.5	
Oklahoma	01.07.84 - 31.12.84	Income, Sales	13.9	0.9
	15.08.02 - 15.11.02	All		
Pennsylvania	13.10.95 - 10.01.96	All	93.0	0.6
Rhode Island	15.10.86 - 12.01.87	All	0.7	0.08
	15.04.96 - 28.06.96	All	7.9	0.6
South Carolina	01.09.85 - 30.11.02	All	7.1	0.3
	15.10.02 - 30.11.02	All		
South Dakota	04.01.99 - 05.15.99	All	0.5	
Texas	01.02.84 - 29.02.84	Sales	0.5	0.006
Vermont	15.05.90 - 25.06.90	All	1.0	0.2
Virginia	01.02.90 - 31.03.90	All	32.2	0.5
West Virginia	01.10.86 - 31.12.86	All	15.9	0.9
Wisconsin	15.09.85 - 22.11.85	All	27.3	0.5
	15.06.98 - 14.08.98	All	30.9	
Dist. Of Columbia	01.07.87 - 30.09.87	All	24.3	
	10.07.95 - 31.08.95	All	19.5	

Sources: The Federation of Tax Administrators <http://www.taxadmin.org/fta/rate/amnesty1.html>, column 5 from Hasseldine (1998, p. 307).

From the experience of US state amnesty programs, Hasseldine (1998, p. 308) concludes a list of crucial issues that should be taken into account when designing a tax amnesty. According to him, one important proposal, which should be regarded prior to a tax amnesty, is to assess taxpayers' attitudes to paying taxes and to tax amnesties. Furthermore, an assessment of taxpayers' voluntary compliance as well as their sentiments concerning a tax amnesty are critical aspects when conducting an amnesty. Nevertheless, there is little empirical evidence on these issues.

2. Tax Amnesties in Switzerland

Since World War II Switzerland has had three broad tax amnesties at the national level (see *Table 3*). During the preceding years, in several cantons tax amnesties took place on the state level. The first one was enacted in 1917 in the canton of Zurich, followed until 1938 by the cantons Grisons, Fribourg, Valais (three times), Lucerne, Geneva (twice), Basle-Country, Thurgau, Glarus, Neuchâtel, Berne, Vaud, and finally in Zurich a second time (Linder 1968). The success of the cantonal tax amnesties mainly depended on a succeeding amnesty on the national level. This is due to the special federalist design of the tax system in Switzerland. The federal level shares the tax sources with the state level. Therefore, a taxpayer had few incentives to participate in a cantonal tax amnesty without a succeeding federal tax amnesty, since she/he must fear that the cantonal tax administration would give its tax information to the federal tax administration.

Table 3

Federal Tax Amnesties in Switzerland

Law	Amnesty Period	major covered taxes	Collection (CHF Mio.)	% of tax rev.
Wehroferamnestie	19.7.1940	Property	150	15% of the so far declared property
Verrechnungssteuer amnestie	31.10.1944	All	650	n.a.
Allgemeine Steueramnestie	15.3.1968	All	11517	6

Sources: Gusberty (1982), Weidmann (1968).

When in 1940 the Swiss central government was looking for new taxes in order to finance the defence costs incurring during World War II, the government officials levied an extraordinary property tax as a one-time charge (*einmaliges Wehropfer*). In principle, new federal taxes need to pass a popular referendum in Switzerland. But the cabinet used his extended legal power during the war times and enacted this new tax not on the normal legal process but by decree. With Article 3 of the decree, the levy of the new tax was connected with a general tax amnesty on the federal level (*Wehropferamnestie*) in order to motivate taxpayers to comply. Furthermore, the amnesty did not only guarantee exemption from punishment but also from taxation of the evaded taxes. However, the first national tax amnesty in Switzerland was no financial success. All in all, only 1.5 Billion CHF declared property appeared thanks to the program, which was about 15% of the so far declared property (Swiss Federal Tax Administration 2000). One reason was that the amnesty did not evolve from the public will and taxpayers feared that a possible new administration might use the official documents to confiscate their wealth. Additionally, the program was not connected with serious post-amnesty enforcement efforts (Gusberti 1982).

In 1944, a new federal tax amnesty was declared in Switzerland. The so-called *Verrechnungssteueramnestie* was quite successful. An additional amount of 6.5 Billion CHF of declared property appeared. The *Verrechnungssteuer* enacted in 1943 is a source-based tax created as an incentive to fight tax evasion. This kind of tax is charged on the returns of securities. The borrower has to pay the tax so that the creditor of the securities only gets the returns ex tax. But the creditor can recall the tax, if s/he declares the securities. Originally, the tax rate of the *Verrechnungssteuer* was of 15%. But in order to fulfil the idea behind the tax, the government officials increased the tax to 25%. Together with the augmentation of the tax rate, a tax amnesty was granted in order to give those an incentive to declare their securities who had not done it so far. Additionally, the tax amnesty was connected with stricter tax controls and an exchange of information between the cantonal tax authorities.

From 1944 until 1966 in 14 states further 16 cantonal amnesties were implemented (see *Table 4*).

Table 4
Cantonal Tax Amnesties in Switzerland

Canton	enacted	Canton	enacted
St. Gallen	1.1.1945	Schaffhausen	1.1.1958
Schwyz	1.1.1947	Schwyz	1.1.1959
Zoug	1.1.1947	Vaud	1.1.1959
Appenzell A.R.	1.1.1947	Valais	1.6.1960
Fribourg	1.1.1951	Obwalden	1.1.1961
Ticino	1.1.1951	Nidwalden	1.1.1963
Valais	1.1.1953	Uri	1.1.1965
Uri	1.1.1955	Lucerne	1.1.1965

Source: Linder (1968, p. 22)

In the early 60s, the question of a new tax amnesty at the federal level emerged again. In 1962 the federal parliament worked out a bill for a tax amnesty despite the fact that the federal government did not support this idea. The government argued that without enhanced enforcement efforts there is no need for an amnesty in normal times. Actually, the proposal did not pass the popular referendum in 1964. A huge majority of voters refused the program as well as 23 cantons whereas only 3 ½ approved the idea of a new tax amnesty. In 1968 however the parliament took the initiative for a new try. Contrary to the first proposal, this bill did not change the procedures of tax auditing. Furthermore, tax foregone was to be waived (Pommerehne and Zweifel 1991). The modified proposal was then accepted in a popular referendum on 18th February 1968 with a majority of 62% ayes.

Table 5 presents information regarding the collected amount in each canton. We can observe a strong variation between the cantons, with the highest amount in Geneva (4'026 CHF per capita) and lowest in Lucerne (915 CHF per capita). Compared to other cantons, Geneva has made an intensive effort using educational advertising, press conferences, and arrangements for professional organisations and private bodies (see Bericht des Bundesrats 1972). On the other hand, the small collection rate in Lucerne can be explained by the cantonal tax amnesty in this canton, which took place only some years before (Linder 1968).

Table 5
Collected Amounts in the Swiss Federal Tax Amnesty 1969

Cantons	Collected Amount CHF Mio.	Amount per capita
Aargau	676.2	1561
Appenzell I. Rh.	39.7	3025
Appenzell A. Rh.	100.3	2046
Berne	2200.0	2237
Basel-Country	256.7	1253
Basel-City	405.7	1727
Fribourg	333.9	1852
Geneva	1335.0	4026
Glarus	75.0	1966
Graubünden	250.0	1542
Lucerne	265.0	915
Neuchâtel	347.6	2055
Nidwalden	32.0	1248
Obwalden	46.8	1910
Sankt Gallen	850.0	2211
Schaffhausen	85.0	1167
Solothurn	312.0	1392
Schwyz	155.7	1691
Thurgau	378.8	2072
Ticino	430.2	1753
Uri	34.3	1006
Vaud	470.6	919
Valais	335.1	1622
Zug	135.8	1997
Zurich	1965.1	1774
Total/Average	11516.5	1799

Source: Bericht des Bundesrates (1972, p. 13).

In general, there are only few insights concerning the distribution of participants and their contribution in the tax amnesty literature. In *Table 6* we present a distribution of individuals classified according to the capital and the employment status. It should be noticed that the data based on the capital level (employment status) is not fully representative for Switzerland as only 16 (9) out of 25 cantons have been included.

Column 4 indicates a stable picture for almost all capital groups (except for group 1, under 50'000 CHF). About every fifth taxpayer participated in the amnesty program. Similarly column 5 shows that the collected sum in reference to the total capital varies

marginally between 6.8 and 9.1%. We furthermore observe an almost equal distribution among the different employment groups.

Table 6

Capital and Employment Groups of Amnesty Participants, Swiss Federal Tax Amnesty 1969

	amnesty participants	collected amount	amnesty participants	collected amount in %
	(%)	(%)	in % of the taxpayers	of the total capital
capital (CHF)				
- 49'000	55.9	14.7	8.3	9.1
50'00-99'000	18.4	9.4	19.1	7.7
100'000-199'000	12.9	10.8	22.2	7.4
200'000-499'000	8.3	14.4	22.1	6.8
500'000-999'000	2.6	10.9	20.7	6.9
1'000'000 +	1.9	39.9	19.4	7.0
employment status				
self-employed	20.4			9.7
employed	18.5			11.1
retired	17.0			9.6

Source: Bericht des Bundesrates (1972, p. 10).

III. THEORETICAL CONSIDERATIONS AND PREVIOUS EMPIRICAL STUDIES

Tax amnesties are disputed in the tax compliance literature. On the one hand, a tax amnesty in the short run can generate an increase in the tax revenue and reduce administration costs (e.g., backlog of paperwork and arrears, see Alm 1998a). Furthermore, it might get evaders “back to the route of honesty”. This is particularly important when correct declaration is difficult due to a complex tax system. Leonard and Zeckhauser (1986) point out that some people become tax delinquents only by mistake. Such individuals might be willing to correct their behaviour to become honest citizens when they are not confronted with punishment mechanisms as prosecution and penalties. Thus, future non-compliance might be reduced integrating former tax delinquents into the taxation procedures.

On the other hand, there are also disadvantages of tax amnesties. Honest taxpayers get informed about the presence of tax evasion, i.e., that other taxpayers are less compliant (see

also Alm and Beck 1993). Thus, previously honest taxpayers often view an amnesty as unfair and feel less motivated to comply in the future. They interpret the amnesty as a signal that tax evasion is a forgivable and insignificant peccadillo (see, e.g., Leonard and Zeckhauser 1986). This might increase their belief to have paid too much in the past compared to other taxpayers. Therefore, the psychological costs of not complying are reduced when observing others' opportunistic behaviour, which results in a crowding out of the intrinsic motivation to comply. Furthermore, an amnesty may induce anticipatory behaviour of taxpayers. After an amnesty, previously honest taxpayers anticipate further amnesties by reducing their tax honesty (see Leonard and Zeckhauser 1986). All in all, the success of an amnesty does not only depend on its short-run revenue effects but also on the long-term effects on tax compliance.

Fisher, Goddeeris and Young (1989) point out that those individuals who were most involved in tax evasion getting the largest benefits are less likely to participate in an amnesty. Compared to other taxpayers the marginal costs of a tax amnesty participation is higher for them. Furthermore, participants could fear that the government use the new information for deterrence activities after the amnesty periods. The successful Italian tax amnesty in 1982 paid attention to this problem and integrated the "condono tombale" with the goal to prevent the tax authority from acquiring information about the evaded tax base (Cassone and Marchese 1995). On the other hand, for taxpayers who found themselves in such a position by accident, the marginal cost of participation is low and an amnesty means a new start into an honest life. Personal guilt feelings can be reduced.

Empirical evidence on these theoretical effects of a tax amnesty is rare. Naturally, it is difficult to measure the real effects of tax amnesties as, e.g., to get an idea of how many evaders have participated in a tax amnesty since data from official investigations are often not available. Most empirical results are reported from the United States since their data base is well developed and because their state amnesties are better comparable than amnesties between countries with very different backgrounds.

In their empirical work with field data, Alm and Beck (1993) analyse the long run effects of the Colorado tax amnesty for the period January 1980 through December 1989. Their time-series analysis indicates that the amnesty in Colorado had virtually no long run effect on the level and the trend of tax collection, despite the fact that the Colorado Department of Revenue increased the post-amnesty enforcement efforts. In a cross-section analysis including 28 US states, Alm and Beck (1991) empirically analyse the effects of tax amnesties on the total amnesty revenues or the total revenues divided by state population. The results indicate that the participation of known delinquents and a reduction of interest

payments on back taxes increase the amnesty revenues significantly⁶. Furthermore, stricter post-amnesty penalties and enforcement mechanism also increase amnesty revenues. Alm and Beck (1991) additionally stress the fact that all these strategies can be implemented by a government without costs except the enforcement mechanism.

Dubin, Graetz and Wilde (1992) with discrete-time duration models with data from 1980-1988 (360 observations, 40 states during nine years) empirically separate those factors that led states to run tax amnesties. The authors find that an active role of the IRS reduces the incentive for states to implement a tax amnesty. Furthermore, an increase in the audit rate leads states to wait longer before initiating an amnesty. The authors also tested whether states with a solid revenue base or states under fiscal stress are more likely to have an amnesty. Surprisingly, their findings indicate that states with increased tax revenues are more likely to initiate amnesties. According to Posner (2000) there is a correlation between tax amnesties and unstable governments, using data on the US state level for the years 1983 through 1997. He defined instability as a governor change in a given year and the percentage of turnover in the house and senate during an election year (dependent variable = tax amnesty). He finds that the likelihood of an amnesty in a particular state increases with instability. It is 4.7 times more likely that an amnesty will occur a year after the governor change compared to a year without changes in the government.

As field data on tax amnesties are rare, the possibilities for investigations are rather limited. Alm, McKee and Beck (1990) point out that there is a lack of field data on the post-amnesty impact regarding taxpayers' expectations about future amnesties. Field data pose the problem that it is difficult to separate different effects as, e.g., enforcement efforts and changes based on the tax amnesty (see Alm and Beck 1993). Experiments offer the possibility to get own data and to check specific circumstances, which are difficult to control in field studies (for a survey see Torgler 2002a). Tax amnesty experiments help control this problem since they allow to analyse the effects of different tax amnesty structures in the long run. To the authors' knowledge there are hardly any tax amnesty experiments. Alm, McKee and Beck (1990) found in an experiment that the average level of compliance falls after an amnesty. However, taxpayers who were highly compliant before an amnesty, continued to be compliant afterwards. On the other hand, subjects with a moderate tax compliance rate reduced their compliance in the post-amnesty phase. The authors found that a successful strategy to increase tax compliance after an amnesty is to intensify enforcement efforts. Enhancing the enforcement mechanism increases the cost of evasion and thus reduces the cost of

⁶ Alm and Beck point out that the variable delinquent measures a reduction in the amnesty tax rate as criminal penalties are forgiven for delinquents who participate in an amnesty.

participating in an amnesty. Short-term revenues support the transition to a new tax system (Graetz 1999). It might be seen as a fair warning, especially for those taxpayers who were honest before the tax amnesty. It aims at convincing tax delinquents that the probability of getting caught increases signalling that tax evasion is morally wrong (Fisher, Goddeeris and Young 1989). Alm, McKee and Beck (1990) also found that the anticipation of a further amnesty increases if individuals get the opportunity to participate in an amnesty although the government had stressed that no amnesty was going to take place. The government loses credibility and makes evasion seem forgivable. Taxpayers get the incentive to wait for further grace periods to be reconsidered freely. In our experiment we are going to check for these effects. According to Alm (1998b) experiments should be administered in a uniform and consistent manner to allow replicability. This allows to test the robustness of the design and prevents from erroneous conclusions.

However, our main focus in this paper is a different one. Our experimental setting as well as the results obtained in this framework are novel. In contrast to other experiments, we conduct an experiment in which the relationship between tax compliance and subjects' possibility to vote for or against an amnesty is analysed. Previous approaches evaluated the pros and cons of tax amnesties and little attention has been given to the question of the relationship between taxpayers and tax authorities. One exemption concerns the empirical study by Feld and Frey (2002). They conclude that there are significant differences in the treatment of taxpayers by the tax authority. From an institutional perspective, the relationship can be understood as a "psychological contract". The more taxpayers can participate in political decision making by popular rights, the more this contract is based on trust and the higher is tax morale. This is similar in the case of a tax amnesty. We predict that voting possibilities have a positive effect on tax compliance. The voting procedure, especially public discussions prior to votes, creates a sense of civic duty, as taxpayers become aware of the importance to contribute to public goods. Voting possibilities provide utility in themselves. People value the right to participate positively, because participation produces itself a kind of procedural utility as their opportunity set increases. It leads to an outcome (acceptance of the amnesty or not) more favourable to the subject than when no such voting possibility exists. Thus, our main hypothesis states:

The possibility to decide on a tax amnesty increases tax morale even when the amnesty is refused.

Recently, the effects of voting on tax compliance have been analysed by Feld and Tyran (2002). They found in an experiment that tax compliance is higher in an endogenous fine treatment in which subjects have the possibility to approve or reject a fine proposal, compared to a situation in which the fine is exogenously fixed. Furthermore, the results show that subjects in the endogenous fine treatment, who approve the fine, have a higher tax compliance than subjects in the exogenous fine treatment. The compliance rates are also higher when the fine is accepted than when the fine is rejected.

IV. DESIGN OF THE EXPERIMENT

1. General Structure of the Experiment

The 68 subjects who participated in our experiment are undergraduate, graduate, and postgraduate volunteers from the University of Basel. Most of the subjects participated for the first time in an experiment. The experiment lasted about an hour (25 rounds) and they earned between 10 SFr. and 25 SFr. (approx. 7 to 20\$), depending on the amount of money they accumulated at the end of the experiment. It was not allowed to communicate with each others, except in one situation where discussion was explicitly promoted by the experimenters (session six). We did not use tokens as currency but fictive lab Dollars. The income distribution was exogenous as all subjects received the same income in all the periods (200 lab dollars). The experiment implemented a public good structure. The taxes on the declared income were doubled and then redistributed in equal shares to the members of the group. After a round subjects' net income could thus be calculated as income after taxes plus share of the multiplied group tax fund. The tax rate was held constant (20 percent). Each session consisted of 25 rounds. *Figure A1* in the Appendix presents the declaration monitor screen.

2. Experimental Sessions

Seven sessions with different sets of individuals are conducted (see *Table 7*). The design of the session is in line with government policy strategies. In session 1, the control case, no amnesty is granted. In session 2 an amnesty is introduced after round 13. Subjects do not have any information about the possibility of a tax amnesty. In session 3, the probability of audit

and penalty has been doubled. Such an experimental structure goes in line with many real amnesties. A tax amnesty indicates that the system fails to enforce the law. An increase in the enforcement regime indicates that the state is willing to find solutions to the tax evasion problem.

In session 4 to 6 subjects had the possibility to decide whether they wanted an amnesty or not. Session 4 and 5 have the same structure, but with a variation of the number of participants (S4=9 subjects; S5=5 subjects). In session 6, people have the possibility to discuss five minutes with each others before giving their vote. Session 7 analyses the effects of taxpayers' expectations of future amnesties. The first amnesty has been declared without previous warning after round 10. Subjects have been informed that no further amnesties were going to take place. However, contrary to this announcement, subjects were again confronted with an amnesty after round 18.

Table 7

Parameters of the Experimental Design

Sessions	Amnesty	Voting	Discussion	Audit Probability	Fine Rate	Tax Rate
S1	no	no	no	5%	2	0.2
S2	yes	no	no	5%	2	0.2
S3	yes	no	no	10%	4	0.2
S4	no	yes	no	5%	2	0.2
S5	no	yes	no	5%	2	0.2
S6	no	yes	yes	5%	2	0.2
S7	yes	no	no	5%	2	0.2

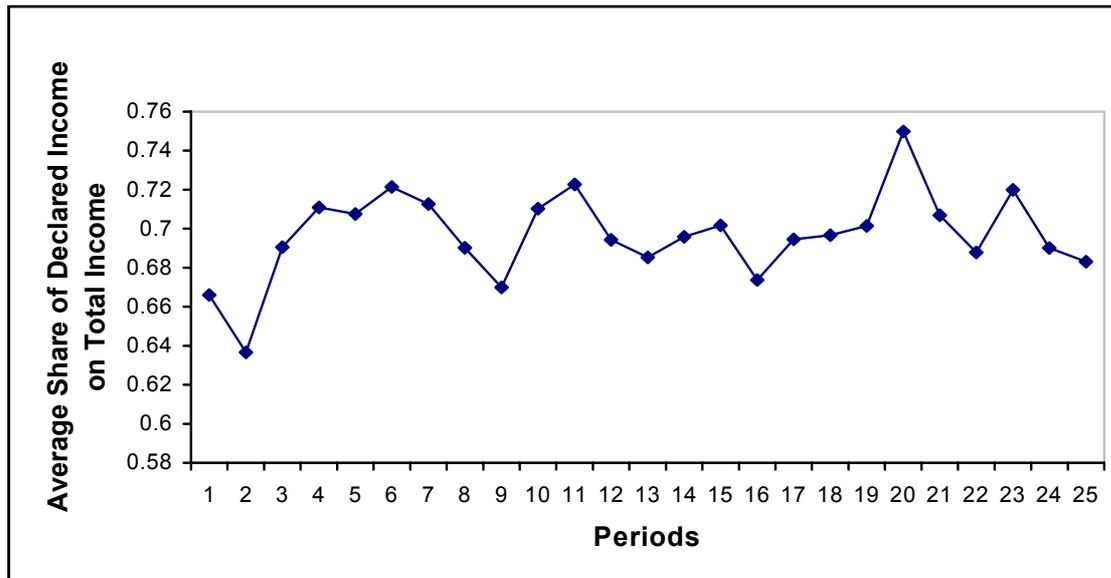
V. EXPERIMENTAL RESULTS

1. Model

In our experiment, the dependent variable concerns the individuals' compliance rate (CR) in a given round, specified as the ratio of the reported income (RI) to the true income (TI) in a specific round, i.e., $CR = RI/TI$. First, we present in *Figure 1* the average compliance rate across all subjects and groups in any particular round. The average compliance rate is 70

percent varying between 63.7 and 75 percent without the tendency to decline over time (standard deviation 0.029).

Figure 1
Average Compliance Rate Over Time



It is often argued that the shortcoming of experiments lies in the artificiality of the laboratory setting which makes it difficult to generalise results into real world. However, it is interesting to notice that our experimental results are in line with field data from Switzerland. With a sample of Swiss cantons in the years 1970-1995, Frey and Feld (2002) have estimated an average tax evasion rate of 23.48 percent⁷.

In a next step Tobit maximum likelihood estimations⁸ as the compliance rate CR varies between 0 and 1 and there are many observations with the values 0 and 1. To include the panel-structure of the data, we additionally include the random-effects function in order to control time-specific effects. The random-effects model is appropriate if we assume the

⁷ It should be mentioned that we tried to operationalise the important variables with real-world values to reduce artificiality. During the experiment we could observe that participants took time to make their decisions, for example doing calculations, which might indicate that they were involved in it and took it seriously, evoking processes as in reality.

⁸ The Tobit model assumes that the disturbance term has a normal distribution. However, the criteria of unbiasedness and efficiency do not depend on this assumption. Furthermore, if the sample is moderately large like in our estimations (1700 observations), normality of the disturbance term is not required in order to guarantee that the confidence intervals and p values are accurate. The “Central Limit Theorem” indicates that the

individual specific constant terms as randomly distributed across cross-sectional units. In our view this makes sense as the sample of cross-sectional units is drawn from a large population. Furthermore, in order to control for group differences we integrated group dummy variables. This procedure is supported by a significant Wald-test for the overall impact of group-differences. According to a Wald-test done in each equation, the hypothesis that the session variables have no impact on tax compliance can be rejected at the 1 percent significance level. Results are presented in *Table 8* and the variables are explained in detailed in the *Table A1* (see Appendix, for the descriptive statistics see *Table A2*). The basic estimation equation reads as follows:

$$CR_{it} = \beta_0 + \beta_1 \cdot CTRL_{it} + \beta_2 \cdot AM1_{it} + \beta_3 \cdot AM2_{it} + \beta_4 \cdot VOTE_{it} + \varepsilon_{it} \quad (1)$$

where CR_{it} denotes the compliance rate. $CTRL_{it}$ is a panel of control variables including the number of audits per person, the nominal fine for tax evasion, the accumulated income over all periods (fortune)⁹, the transfer payment obtained in each period and group dummy variables for all seven sessions. $AM1_{it}$ is a dummy variable that compares the pre-amnesty period and the post-amnesty period (value=1) whereas $AM2_{it}$ considers the case for a second amnesty. $VOTE_{it}$ is the dummy variable of interest that differentiates between pre-voting period and post-voting period.

To check the robustness of the main variables and the relevance of alternative variables as well as to increase the predictability of the model additional variables have been inserted. *Table 8* indicates that the adjusted R^2 for our basic model is quite low. Including further variables, the adjusted R^2 increases from 0.06 to 0.151 in Equation 2. Thus, it is important to integrate additional variables to get better predictions. First, we have integrated socio-demographic and socio-economic variables as $GENDER_i$, AGE_i , religiosity (REL_i), political ideology ($IDEO_i$), and financial satisfaction (FS_i).

$$CR_{it} = \beta_0 + \beta_1 \cdot CTRL_{it} + \beta_2 \cdot AM1_{it} + \beta_3 \cdot AM2_{it} + \beta_4 \cdot VOTE_{it} + \beta_5 \cdot GENDER_i + \beta_6 \cdot AGE_i + \beta_7 \cdot REL_i + \beta_8 \cdot IDEO_i + \beta_9 \cdot FS_i + \varepsilon_{it} \quad (2)$$

confidence intervals and the p values are good approximations even when the disturbance term is not normally distributed if an estimation has anything more than 200 cases (see Allison 1999).

⁹ The variable fortune poses the question of endogeneity. It could be argued that the compliance rate is not only influenced by taxpayers fortune but also vice versa. However, the fact that subjects had to decide about their compliance rate after the income declaration gave information about their actual fortune makes us confident, that the causality is correct, at least in the short run.

Finally we consider a culture variable comparing between Swiss and foreign participants (*FOREIGNER_i*), and control if someone is an economist or not (*ECO_i*).

$$CR_{it} = \beta_0 + \beta_1 \cdot CTRL_{it} + \beta_2 \cdot AM1_{it} + \beta_3 \cdot AM2_{it} + \beta_4 \cdot VOTE_{it} + \beta_5 \cdot GENDER_i + \beta_6 \cdot AGE_i + \beta_7 \cdot REL_i + \beta_8 \cdot IDEO_i + \beta_9 \cdot CUL_i + \beta_{10} \cdot ECO_i + \beta_{11} \cdot FS_i + \varepsilon_{it} \quad (3)$$

2. Results

Table 8 presents the results of the first three equations. We find encouraging evidence that taxpayers are significantly more compliant in the post-voting period. Thus, our basic hypothesis cannot be rejected: political participation fosters tax compliance. The possibility for voters to determine whether they want a tax amnesty shapes tax morale and tax compliance positively, even though they refuse such an offer¹⁰. Thus, voting helps crowd in intrinsic motivation to contribute to public goods. Looking at the variables “amnesty” and “second amnesty”, some interesting results appear, too. Whereas a first amnesty had a significant positive long-run effect on tax compliance, a second amnesty did not increase significantly post-amnesty tax compliance. These results are in line with the findings of Alm et al. (1990) indicating that amnesty expectations and a reduction of state’s credibility lower the positive effect of a tax amnesty. At first glance, the positive effect of a (single) amnesty on tax compliance seems to contradict the result that voters refuse an amnesty at the ballots. Why should voters use an amnesty to comply when it is declared by the government but would have refused such an offer if they were asked at the polls? We interpret the results as follows: the voting procedure works as a reminder for taxpayers that the government wants to fight tax evasion. But voters don’t like the amnesty because of possible deterrence activities that might be involved with the amnesty. Therefore, it makes sense to comply after the votes without the amnesty in order to reduce the political pressure for stricter enforcement activities and for an amnesty in the future. However, if the amnesty is declared by the government, the connection of the amnesty with better enforcement efforts gives incentives to comply (see results in *Table 9*).

It is interesting to notice that the isolated effect of the deterrence variables “audit” and “penalty” had a significant negative impact on tax compliance (see results in *Table 8*). These

¹⁰ In session 4, 7 out of 9 individuals rejected an amnesty, in session 5, 3 out of 5 and in session 6, 8 out of 13.

results indicate that traditional variables are not performing in a satisfactory way (for similar findings see Frey and Feld 2002, Torgler 2002b, Torgler 2003).

Not surprisingly, a higher group transfer leads to a significantly higher tax compliance¹¹. Higher transfers give subjects a signal that the group on average behave honestly. The moral costs of being opportunistic increase.

The estimation results for Equation 2 and 3 indicate that the coefficient of our main variable “voting” remains significant. Equation 2 shows that an increase in age has a significantly positive effect on tax compliance. Furthermore, females have a significantly higher tax compliance than males. However, it could be argued that the obtained difference between females and males is influenced by different risk attitude functions for females and males. To control for risk attitudes our subjects had to participate in an initial experiment, where they had the possibility to choose between a certain payoff or a gamble with a higher payoff but with different probabilities. The structure of the choices reproduced in *Table A3* (see Appendix) is similar to the one used by Cummings, Martinez-Vazquez, McKee (2001). Subjects had to choose between Option 1 and 2 for all 6 choices. The degree of risk aversion is determined where a subject crosses over from Option 1 to 2. Individuals which had chosen option 1 at an expected value of 3.5 and above were defined as risk-averse (dummy variable). We have estimated Equations 2 and 3 controlling for risk attitude. However, the results indicated that there is still a significant difference between females and males after controlling for risk attitudes. The coefficient of the variable female remains highly significant in both estimations¹². Furthermore, our findings show that subjects with a higher religiosity have a significantly higher tax compliance. We furthermore find that subjects with a stronger political right-wing orientation have a significantly lower tax compliance and that on the other hand individuals’ financial satisfaction increases tax compliance. No significant differences between economists and non-economists and between foreigners and Swiss subjects have been observed.

Additionally, in order to consider the problems that arise from heteroscedasticity, white corrected standard errors are computed using pooled tobit estimations (see *Table A4*). The results are in line with previous findings, showing, e.g., for our main variable VOTING even higher z-statistics values.

¹¹ In each round, the group transfer sum of the previous round was shown on the screen. Subjects could see in the monitor in each round their group transfer sum from the previous round.

¹² Coefficient values for the variable FEMALE: *Eq. 2* = 0.371 (11.423), *Eq. 3* = 0.360 (10.541); z-values in parentheses.

Table 8
Random-Effects Tobit Regression

Tobit Estimates Variables	Equation 1		Equation 2		Equation 3	
	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.
audit	-0.104***	(-4.779)	-0.095***	(-4.543)	-0.099***	(-4.715)
penalty	-0.002***	(-5.498)	-0.002***	(-5.190)	-0.002***	(-5.131)
fortune	-3.02E-05*	(-1.934)	-2.32E-05	(-1.582)	-2.23E-05	(-1.527)
transfers	0.002***	(3.207)	0.002***	(3.124)	0.002***	(3.104)
voting	0.163**	(2.455)	0.136**	(2.184)	0.137**	(2.203)
amnesty	0.206***	(3.060)	0.184***	(2.921)	0.184***	(2.930)
second amnesty	0.137	(1.384)	0.119	(1.270)	0.118	(1.262)
age			0.006***	(3.001)	0.006***	(3.179)
female			0.334***	(10.067)	0.330***	(9.561)
religiosity			0.044***	(3.920)	0.046***	(4.093)
ideology			-0.079***	(-8.389)	-0.082***	(-8.333)
financial satisfaction			0.024***	(3.915)	0.028***	(4.371)
economist					0.054	(1.598)
foreigners					0.06	(1.551)
F-Test: Sessions	5.890***		13.728***		14.227***	
Adjusted R-squared	0.06		0.151		0.155	
Log-likelihood	-1505.593		-1412.818		-1410.495	
Observations	1700		1700		1700	

Notes: Dependent variable: tax compliance rate as the ratio of reported income on true income. In the reference group are MALE, NON ECONOMISTS, SWISS. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

Furthermore, to analyse the effects of voting on tax compliance, we decompose the dummy variable VOTING into the dummy variables VOTING WITH DISCUSSION and VOTING WITHOUT DISCUSSION, controlling for the other factors. If discussion is taking place before voting, people have the opportunity to exchange arguments, which raises the level of information of the participants. Individuals become involved and feel responsible for the result. Their interaction in a face-to-face situation gives them the opportunity to identify others' preferences and enhances people's willingness to accept the voting decision (see Bohnet and Frey 1994). Alm, McClelland and Schulze (1999) argue that there is a social norm of tax compliance affecting individual reporting decisions. Their findings indicate that communication combined with the vote influences tax compliance, so that paying taxes becomes the accepted mode of behaviour. Discussion gives the opportunity to clarify benefits and costs of a topic and thus increases co-operation among group members.

Table 9 presents the results. Whereas the coefficient of the variable VOTING WITH DISCUSSION is significant, the coefficient for the variable VOTING WITHOUT DISCUSSION is not significant, but shows a positive correlation. Thus, the key determinant to increase tax compliance is to allow communication among members of a group before they cast their votes. Including an interaction term of the voting possibilities with audit reveals that the negative effect of audit is stronger in situations where individuals have obtained the right to signalise their preferences. Thus, a distrust factor as auditing might undermine tax morale after fair procedures as voting have been introduced.

To investigate whether the positive correlation between tax amnesty and tax compliance is largely driven by the way a tax amnesty is structured, we split tax amnesty into the amnesty which increases the enforcement parameters and the amnesty without enforcement changes. The results in *Table 9* show that a tax amnesty with an increase in the enforcement parameters is more successful (higher coefficient value at a higher significance level) in enhancing tax compliance than a “normal” tax amnesty. One reason might be that an increase in enforcement signalises a serious fight against tax evasion. Thus, in the post-amnesty period tax morale of honest subjects might be less crowded out.

Table 9
The Effects of Voting and Amnesties on Tax Compliance

Tobit Estimates	Eq. 1		Eq. 2		Eq. 3	
Variables	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.
<i>a) Voting</i>						
voting with discussion	0.182**	2.275				
voting without discussion	0.100	1.337				
voting*audit			-0.090**	-2.041		
voting			0.215***	2.949		
audit	included		-0.073***	-2.966		
all other factors	included		included			
<i>b) Tax Amnesties</i>						
amnesty + higher enforcement					0.267***	3.006
amnesty without higher enforc.					0.137*	1.894
all other factors					included	

Notes: Dependent variable: tax compliance rate. In the reference group are MALE, NON ECONOMISTS, SWISS. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

VI. CONCLUSIONS

Amnesty programs have lately obtained growing attention in the political process. In situations where the government has revenue shortfalls, alternative instruments as, e.g. tax amnesties, gain importance. Although many tax amnesties have been conducted all around the world, evidence about their (long-term) effects is largely lacking.

In this paper we have analysed the impact of voter participation on tax amnesties using experiments. There is a lack of field data on the post-amnesty impact. Experiments help to analyse longitudinal effects and check which factors enforce tax compliance. The novel framework in our analysis for the tax compliance literature is to combine a tax amnesty experiment with voting possibilities. Our results provide strong evidence that individuals are more compliant when they are given the opportunity to vote and thus to make their choice. The strongest effect can be achieved if the voting procedure is coupled with communication among group members prior to the vote. Although both groups in which voting procedures have been introduced rejected tax amnesty, the compliance behavior has significantly improved with this strategy. Thus, our results indicate that the way subjects are treated has an impact on the intrinsic motivation to pay taxes. Offering citizens participation rights might be an important alternative instrument for enhancing societies' social capital, creating an environment where citizens are trusted. Furthermore, the voting procedure might have a significant positive impact on tax compliance since the amnesty proposal is seen as a signal that the government wants to tackle the problem of tax evasion. In order to circumvent the likelihood of stricter enforcement activities taxpayers augment their compliance.

In line with the findings of Alm, McKee and Beck (1990) we find that amnesties appear to be more effective in generating tax compliance in combination with an increase in the enforcement parameters than an amnesty without changes in the enforcement factors. An increase in the enforcement regime might control the crowding out of intrinsic motivation for those subjects who were honest in the pre-amnesty period, indicating that the state is willing to find solutions to the tax evasion problem. The results also indicate that the effect of a second amnesty does not significantly improve tax compliance. Amnesty expectations reduce the positive effects of an amnesty. When the state does not keep its promise, tax compliance decreases. Such a result has a strong policy implication. If a state has the intention to increase the long-term effects of a tax amnesty, its commitment should be reliable, and only one amnesty should be conducted per generation.

APPENDIX

Figure A1

Income Declaration

Year	1
------	---

INCOME TAX DECLARATION

Tax Policy Information:

Tax rate: **20 %**
 Probability of audit: **5 %**
*(increases with an increasing difference between this year's declared income and last year's declared income, max. 10 %)
 If you were selected for an audit, the actual and the declared income for the previous 4 rounds are compared. If you did not fully comply, any back taxes are collected, and a fine equal to the unpaid taxes is also imposed.*
 Fine rate: **2.0** (200 % of the unpaid taxes)

Personal Information:

taxable income: **200 lab\$**
 Accumulated Income (fortune): **0 lab\$**
 therefrom: **0 lab\$** state's transfer from last year
 Taxes: **0 lab\$** from last year.

Declaration:

Herewith I declare an assigned income of:

lab\$:

Furthermore, you should know that the whole tax revenue from your group is multiplied with the factor 2 and redistributed in equal shares among the participants. Revenue from penalty tax and after taxes is not redistributed. If the whole amount of taxes (i.e., the sum of all single payments of all members of a group of 10 persons) is 100 \$, every participant receives transfer payments of 20 \$.

Table A1
Description of Variables

Variables	Description
compliance rate	ratio of the reported income to the true income
fortune	individual's accumulated earnings
audit	number of times a subject has been controlled (adjusted after every audit)
penalty	total penalty amount after detection
transfers	amount an individual obtains from the group fund at the end of the previous round
voting	dummy variable (0=pre-voting period, 1=post-voting period)
amnesty	dummy variable (0=pre-amnesty period, 1=post-amnesty period)
second amnesty	dummy variable (0=pre-second amnesty period, 1=post second amnesty period)
religiosity	How often do you attend religious services these days? More than once a week, once a week, once a month, only on special holidays, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never)
ideology	In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking? (1=left, 10=right)
financial satisfaction	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)

Table A2
Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum
compliance rate	0.70	0.90	1.00	0.00
fortune	3030.34	2992.00	6529.28	191.94
audit	0.50	0.00	5.00	0.00
penalty	6.35	0.00	800.00	0.00
transfers	68.90	60.55	194.67	30.24
religiosity	2.13	1.00	6.00	1.00
ideology	5.06	5.00	10.00	2.00
financial satisfaction	5.71	6.00	10.00	1.00

Table A3
Subjects Risk Attitude

	Payoff to Option 1	Payoff to Option 2	Expected Value Opt. 2
1	3'000 \$	6'000 \$ if a 1 is rolled and 1'000 \$ otherwise	1.5
2	3'000 \$	6'000 \$ if 1 or 2 is rolled, 1'000 \$ otherwise	2
3	3'000 \$	6'000 \$ if 1 through 3 is rolled, 1'000 \$ otherwise	2.5
4	3'000 \$	6'000 \$ if 1 through 4 is rolled, 1'000 \$ otherwise	3
5	3'000 \$	6'000 \$ if 1 through 5 is rolled, 1'000 \$ otherwise	3.5
6	3'000 \$	6'000 \$ if 1 through 6 is rolled, 1'000 \$ otherwise	4

Notes: Screen text: "For every case (1-6) you must decide between option 1 and option 2. The lottery consists of ten tokens, numbered from 1 to 10".

Table A4
Pooled Tobit Regression (White Corrected Standard Errors)

Tobit Estimates Variables	Equation 1		Equation 2		Equation 3	
	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.
audit	-0.104***	(-4.312)	-0.095***	(-4.062)	-0.099***	(-4.263)
penalty	-0.002***	(-6.950)	-0.002***	(-5.864)	-0.002***	(-5.820)
fortune	-3.02E-05*	(-1.897)	-2.32E-05	(-1.522)	-2.23E-05	(-1.460)
transfers	0.002***	(2.948)	0.002***	(2.800)	0.002***	(2.780)
voting	0.163***	(2.581)	0.136**	(2.226)	0.137**	(2.282)
amnesty	0.206***	(2.936)	0.184***	(2.862)	0.184***	(2.862)
second amnesty	0.137	(1.359)	0.119	(1.310)	0.118	(1.317)
age			0.006***	(3.421)	0.006***	(3.651)
female			0.334***	(11.183)	0.330***	(10.665)
religiosity			0.044***	(4.078)	0.046***	(4.275)
ideology			-0.079***	(-8.3811)	-0.082***	(-7.658)
financial satisfaction			0.024***	(3.737)	0.028***	(4.228)
economist					0.054	(1.454)
foreigners					0.060*	(1.721)
F-Test: Sessions	6.390***		19.013***		19.792***	
Adjusted R-squared	0.060		0.151		0.155	
Log-likelihood	-1505.593		-1412.818		-1410.495	
Observations	1700		1700		1700	

Notes: Dependent variable: tax compliance rate as the ratio of reported income on true income. In the reference group are MALE, NON ECONOMISTS, SWISS. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

REFERENCES

- Adams, C. (1993). *For Good and Evil*. The Impact of Taxes on the Course of Civilization. London: Madison Books.
- Allison, P. D. (1999). *Multiple Regression: A Primer*. California: Pine Forge Press.
- Alm, J. (1998a). Tax Policy Analysis: The Introduction of a Russian Tax Amnesty, Working Paper 98-6, International Studies Program, Georgia State University.
- Alm, J. (1998b). Tax Compliance and Administration, Working Paper, University of Colorado at Boulder.
- Alm, J., M. McKee and W. Beck (1990). Amazing Grace, Tax Amnesties and Compliance, *National Tax Journal*. 43: 23-37.
- Alm, J. and W. Beck (1990). Tax Amnesties and Tax Revenues, *Public Finance Quarterly*. 18: 433-453.
- Alm, J. and W. Beck (1991). Wiping the Slate Clean: Individual Response to State Amnesties, *Southern Economic Journal*. 57: 1043-1053.
- Alm, J. and W. Beck (1993). Tax Amnesties and Compliance in the Long Run: A Time Series Analysis, *National Tax Journal*. 46: 53-60.
- Alm, J., J. Martinez-Vazquez and S. Wallace (2001). Tax Amnesties and Tax Collections in the Russian Federation, 01-4 Working Paper, International Studies Program, Georgia State University.
- Alm, J., G. H. McClelland and W. D. Schulze (1999). Changing the Social Norm of Tax Compliance by Voting, *KYKLOS*. 52: 141-171.
- Bericht des Bundesrates (1972). Bericht des Bundesrates an die Mitglieder der eidgenössischen Räte über das Ergebnis der Steueramnestie 1969, 1. Juni 1972.
- Bohnet, I. and B. S. Frey (1994). Direct-Democratic Rules: The Role of Discussion, *KYKLOS*. 47: 341-354.
- Cassone, A. and C. Marchese (1995). Tax Amnesties as Special Sales Offers: The Italian Experience, *Public Finance*. 50: 51-66.
- Cummings, R. G., J. Martinez-Vazquez and M. McKee (2001). Cross Cultural Comparisons of Tax Compliance Behavior, Working Paper No. 01-03, George State University, School of Policy Studies.
- Dubin, J. A., M. J. Graetz and L. L. Wilde (1992). State Income Tax Amnesties: Causes, *Quarterly Journal of Economics*. 7: 1057-1070.
- Feld, L. P. (2002). Rückführung von Fluchtkapital als Voraussetzung für den fiskalischen Erfolg einer Abgeltungssteuer?, unpublished manuscript, Philipps-University of Marburg.
- Feld, L. P. and B. S. Frey (2002). Trust Breeds Trust: How Taxpayers are treated, *Economics of Governance*. 3: 87-99.

- Feld, L. P. and J.-R. Tyran (2002). Tax Evasion and Voting: An Experimental Analysis, *KYKLOS*. 55: 197-222.
- Fisher, R. C., J. H. Goddeeris and J. C. Young (1989). Participation in Amnesties: The Individual Income Tax, *National Tax Journal*. 42: 15-27.
- Frey, B. S. and L. P. Feld (2002). Deterrence and Morale in Taxation: An Empirical Analysis, CESifo Working Paper No. 760.
- Graetz, M. J. (1999). *The U.S. Income Tax. What It Is, How It Got That Way, and Where We Go from Here*. New York: W.W. Norton.
- Gusberti, B. (1982). Die Schweizer Steueramnestie 1969, Schriftliche Fassung des Vortrag beim Bundesministerium für Finanzen (Wien).
- Hasseldine, J. (1998). Tax Amnesties: An International Review, *Bulletin for International Fiscal Documentation*. 52: 303-310.
- IMF (2002). Italy 2002 Article IV Consultation, <http://www.imf.org/external/np/ms/2002/061102.htm>.
- Leonard, H. B. and R. J. Zeckhauser (1986). Amnesty, Enforcement and Tax Policy, NBER Working Paper Series, No. 2096, National Bureau of Economic Research, Cambridge.
- Linder, W. (1968). Allgemeine Steueramnestie 1969, Referentenführer, im Auftrag des Arbeitsausschusses für Amnestieaufklärung und der Interkantonalen Kommission für Steueraufklärung
- Marchese, C. and F. Privileggi (1997). Taxpayer's Attitudes Toward Risk and Amnesty Participation: Economic Analysis and Evidence for the Italian Case, *Public Finance*. 52: 394-410.
- Mikesell, J. L. (1986). Amnesties for State Tax Evaders: The Nature of and Response to Recent Programs, *National Tax Journal*. 39: 507-525.
- OECD (1990). *Taxpayer's Rights and Obligations. A Survey of the Legal Situation in OECD Countries*. Paris: OECD.
- Pommerehne, W. W. and P. Zweifel (1991). Success of Tax Amnesty: At the Polls, for the Fisc?, *Public Choice*. 72: 131-165.
- Posner, E. A. (2000). Law and Social Norms: The Case of Tax Compliance, *Virginia Law Review*. 8: 1781-1819.
- Roth, J. A., J. T. Scholz and A. D. Witte (eds.) (1989). *Taxpayer Compliance*, Vol. 1 and Vol. 2. Philadelphia: University of Pennsylvania Press.
- Schneider, F and D. Enste (2000). Shadow Economies: Size, Causes and Consequences, *Journal of Economic Literature*. 38: 77-114.
- Swiss Federal Tax Administration FTA (2000). *Daten aus der Geschichte der Bundessteuern*. Bern: Interkantonale Kommission für Steueraufklärung.
- Torgler, B. (2002a). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-683.
- Torgler, B. (2002b). Tax Morale and Institutions (revised), WWZ-Discussion Paper 02/07, Basel: WWZ.

- Torgler, B. (2003). Cross Culture Comparison of Tax Morale and Tax Compliance: Evidence from Costa Rica and Switzerland, WWZ-Discussion Paper 03/06, Basel: WWZ.
- Uchitelle, E. (1989). The Effectiveness of Tax Amnesty Programs in Selected Countries, *Federal Reserve Bank of New York Quarterly Review*. 14: 48-53.
- US Joint Committee on Taxation (1998). Tax Amnesty, (JCS-2-98).
- Weidmann, H. (1969). *Die allgemeine Steueramnestie 1969: Erläuterungen, Hinweise und Ratschläge*. Bern: Cosmos.

CHAPTER XXII

IS FORGIVENESS DIVINE?

A CROSS-CULTURE COMPARISON OF TAX AMNESTIES*

ABSTRACT

Tax compliance literature lacks empirical evidence regarding the effects of a tax amnesty on tax compliance. To measure the long run effects of an amnesty on compliance, experiments in Switzerland and Costa Rica were conducted. The results suggest that tax compliance rises significantly when people get the opportunity to vote for or against a tax amnesty, independently from whether a tax amnesty is rejected or not. The strongest effect can be achieved when voting is coupled with pre-voting discussion. Furthermore, the anticipation of further tax amnesties reduces positive effects on tax compliance. All these findings are robust across the different cultures. Interestingly, our results indicate that tax compliance is significantly higher in Costa Rica than to Switzerland.

JEL classification: H260, 9160

Keywords: tax amnesty, tax compliance, voting behaviour, experiments, culture

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I. INTRODUCTION

Why are tax amnesties a major issue of the political agenda these days? In a time when many governments are confronted with budget deficits tax reforms gain importance. One strategy is to turn to a tax amnesty as part of a fiscal reform. The aim is to raise tax revenues, permitting people who have failed to file tax returns or who have underpaid taxes to pay taxes during some specific period of time and thus to clear up the tax delinquent status mostly without penalties. However, in general, the amount of additional money produced by tax amnesties is in general not very important (Hasseldine 1998). Furthermore, the efficiency of a tax amnesty depends on the long-run revenue effects. Here, it is debated whether in the long run tax amnesties undermine tax morale especially when tax amnesties are frequently replicated. *Table 1* presents pros and cons of tax amnesties.

The evidence available concerning the success of an amnesty gives an unclear picture. Unfortunately, there is a general lack of empirical evidence. Progress has been made primarily with aggregated data from the United States (see, e.g., Alm and Beck 1991). *Table 2* presents an overview of some major empirical results. However, the effects of a tax amnesty in developing countries have hardly been analysed empirically in the tax compliance literature. Experimental methods have been used to test the long-run impact of an amnesty on voluntary compliance (see, e.g., Alm and Beck 1993).

When deciding whether or not to conduct an amnesty it is crucial to take taxpayers' attitude towards an amnesty into account. However, in hardly any country this was done by voters' approval. The aim of this paper is to evaluate the impact of voter participation on tax amnesties conducting a laboratory experiment. The results of our experiment show that the mere possibility for taxpayers to decide on a tax amnesty increases future tax compliance. It seems that the voting procedure, especially public discussions prior to votes, is bringing about a sense of civic duty, as taxpayers become aware of the importance to contribute to public goods.

Table 1
Pros and Cons of a Tax Amnesty

<i>Pros</i>	<i>Cons</i>
<ul style="list-style-type: none"> - Generates additional government revenues in the short run. - Enlarges the tax base. - Gets some tax evaders back to the route of honesty. - Offers a “soft option“ for those who became tax delinquents by mistake. - Provides short-term revenues to aid the transition to a new tax structure - Signalises that the problem of tax evasion will be tackled by the government. - Reduces administrative costs. - Improves compliance keeping and monitoring individuals who previously were not on the tax roles. 	<ul style="list-style-type: none"> - Undermines tax morale, as honest taxpayers may feel upset. - Signalises a weak government, which is unable to enforce taxation. - Taxpayers could anticipate further tax amnesties, which may have a negative effect on tax compliance in the long run. - Signalises that tax evasion is a “peccadillo”. - Experiences indicate that amnesties produce small and overstated revenues. - Individuals get aware of the presence of non-compliance. - Moral costs to behave dishonestly decrease. Personal guilt is removed. - An amnesty generates revenues that would have been collected in the absence of an amnesty. The increased revenues will be followed by a decline in additional collections from penalties, compounding or settlement fees.

Source: Alm (1998), Das-Gupta and Mookherjee (1995), Stella (1991), Fisher, Goddeeris and Young (1989).

Table 2
Previous Empirical Evidence

Authors	Amnesty	Data	Main Results
Alm and Beck (1993)	Colorado	1980-1989	- No long-run effects on the level of tax revenues despite increased enforcement efforts.
Alm and Beck (1991)	28 US-States	1982-1988	- Combination of tax amnesty with increased enforcement efforts increases amnesty revenues.
Dubin, Graetz and Wilde (1992)	US-States	1980-1988	- An increase of audit rates leads states to wait longer before initiating a tax amnesty.
Christian and Gupta (2003)	Michigan	1983	- Two-thirds of new filers and nine-tenths of previous filers who filed amended returns under amnesty filed a state income tax return subsequently. - Amnesty impact (5'500 new taxpayers) on revenues, inducing 0.1 percent of Michigan's personal income Tax, is negligible.
Das-Gupta and Mookherjee (1995)	India	1965-1992	- Out of 12 amnesties between these periods only the 1975 amnesty induced a significantly positive effect on tax revenues
Alm, McKee and Beck (1990)	Experiment United States	1990	- Average level of tax compliance falls after a tax amnesty - Expectations of an amnesty reduces compliance - Revenues from an amnesty are greater if post-amnesty enforcement increases

In this paper we present evidence from a tax amnesty experiment done in Switzerland at the University of Basel and at the International University of INCAE in Costa Rica, including participants from 8 Latin American countries, and the University of Fidélitas in San José. This allows us to check to which extent tax amnesties are accepted among individuals with a different cultural background and how individuals react to different tax amnesty strategies, which can be designed with the help of different treatment groups. As the experiment done in both countries has exactly the same structure, we have the possibility to pool the data in order to analyse cultural differences regarding the degree of tax compliance. Moreover, experimental methods allow controlling for many extraneous influences as, e.g., holding tax

reporting factors constant (penalty, fine rate, tax rate, income level etc.). Alm and Martinez-Vazquez (2001) point out that the

“experimental approach is therefore ideally suited to investigate the question of whether different social norms, as they arise from different societal institutions across countries, have a significant impact on tax compliance behavior” (p. 22).

The aim of this paper is to conduct a cross-culture tax amnesty experiment with data from a European and a Latin American country. The focus of the analysis lies on evaluating the impact of popular votes on tax compliance in the long run. Until now, cross-culture tax compliance experiments have been analysed by Alm, Sanchez, and De Juan (1995) comparing Spain and the United States, Cummings, Martinez-Vazquez and McKee (2001) using the same experiments in the United States, South Africa, and Botswana, and Torgler (2003a) with data from Switzerland and Costa Rica. In general, the results indicate that compliance varies among different countries solely focussing on general tax compliance but not on the aspect of a tax amnesty.

The paper is organised as follows. In Section II we present a short survey on tax amnesties in Latin America. Section III introduces the design of the experiment and develops the hypotheses, which are tested in Section IV. The paper finishes in Section V with some concluding remarks.

II. TAX AMNESTIES IN LATIN AMERICA

In the 1980s Latin America has been confronted with many tax system reforms (for a survey see Torgler 2003b). Tax amnesties often go in line with tax reforms. It is thus not surprising that quite a lot of tax amnesties have been carried through in this period. In Argentina, e.g., a tax amnesty has been conducted in 1987. In terms of additionally collected revenues, the amnesty was not successful. The amnesty program exempted taxes from income that was used for investment purposes as a part of their “1987 debt-to-equity program” (Uchitelle 1989, p. 51). But even though the Argentinean government promised not to prosecute the delinquents, the amnesty program failed to reach the intended goal. Alm (1998) sees possible reasons for this failure in numerous tax amnesties offered previously that were very similar, and in the enforcement strategies that have not been changed after the program. Additionally, Uchitelle

(1989) points out that there has never been a serious effort to eliminate the source of the problem of tax evasion in Argentina, namely the huge size of the shadow economy, the highly regulated economy, and the uncertainty of government's economic policy. In 2001/2002 the Argentine tax authority implemented a tax amnesty program where taxpayers could use government bonds to pay for tax liabilities that were overdue. Penalties were reduced and national taxes, customs duties, and payroll taxes were included in the amnesty program (see PWC 2002a).

Colombia conducted a tax reform in 1987 reducing, for example, income tax rates, and offering a tax amnesty, which allowed individuals to correct their reports without penalty and prosecution. The government increased the post-amnesty efforts and penalties. Compared to other tax amnesties in other countries this program was relatively successful collecting around 100 million \$ or 0.3 percent of gross domestic product (Alm 1998).

The 2001 tax reform in Mexico, which included only small changes regarding the income tax and other tax laws, introduced a tax amnesty (PWC 2002b). Similarly, Costa Rica is now conducting a tax reform incorporating a tax amnesty. The reform consists, among others, of an increase in the income and corporate tax rates. Furthermore, the property tax on luxury vehicles for the year 2003 is increased by 50% of the ordinary rate. The tax amnesty program grants taxpayers a tax amnesty during two months, cancelling the fine rate for taxes managed by the tax authorities (income tax, sales tax, selective consumption tax, property tax on vehicles, transfer tax of real property and vehicles, education and culture stamp tax, tax on offshore companies, taxes on gambling houses, specific tax on alcoholic beverage etc.) (Arroyo 2002). This tax contingency law was approved by the congress of Costa Rica in December 2000 (Amén, Arroyo and García 2002), and the bill has been sanctioned by the president on December 18 and became effective on January 1st, 2003. Taxes created by this law had a term of twelve months (Arroyo 2002b). Previously, a tax amnesty has been done in 1995 (Justice Law, Ley de Justicia Tributaria No. 7535).

III. DESIGN OF THE EXPERIMENT AND HYPOTHESES

We have already pointed out that experiments help to analyse the long-term effect of tax amnesties, which is debated in the tax compliance literature. In general, experiments offer the possibility to get own data and to check specific circumstances, which are difficult to control

in field studies (for a survey see Torgler 2002). It is a possibility to study alternative policy strategies regarding the implementation of a tax amnesty.

1. General Structure of the Experiment

We have conducted experiments in Switzerland and Costa Rica. 120 subjects have participated in the experiment, 68 in Switzerland and 52 in Costa Rica. The experiment in Switzerland has been done at the University of Basel, in Costa Rica at the University INCAE in Alajuela and the University Fidélitas in San José. As the city of Basel shares frontiers with Germany and France, its University has many foreign students. This allows evaluating the differences between foreign and Swiss native participants. Around 20% came from Germany and 5% from France. On total, around 34% of the individuals were foreigners with a European background (e.g., Italian, Austrian, Danish). Similarly, in Costa Rica we had the unique possibility to differentiate between native “ticos” (48.1% of the participants) and foreigners (51.7%). 13.4% of the foreigners came from Guatemala and Peru, followed by El Salvador (5.8%), Honduras (5.8%), Ecuador (5.7%), and Venezuela and Bolivia (1.9%).

The experiment lasted about an hour (25 rounds) and participants earned between 7 and 20\$ in Switzerland and between 5 and 15\$ in Costa Rica depending on the individually accumulated amount of money at the end of the experiment. Communication among the participants was not allowed. We did not use tokens as currency but fictive lab Dollars. The income distribution is treated as exogenous in our experiment since all subjects received the same income in all the periods (200 lab dollars). The experiment implemented a public good structure. The taxes on the declared income were multiplied by 2 and then redistributed in equal shares to the members of the group. The design of the different experimental sessions are explained in Torgler and Schaltegger (2003).

2. Investigated Hypotheses

LET THE PEOPLE VOTE

Hypothesis 1: The opportunity to decide on a tax amnesty increases tax compliance, independently from whether a tax amnesty is rejected or not.

We predict that the voting possibilities have a positive effect on tax compliance. The voting procedure produces itself a utility as taxpayers' possibility set increases and they get involved in the decision process. They might become aware of the importance to contribute to public goods inside a group. For the experiment done in Switzerland, Torgler and Schaltegger (2003) found that this hypothesis could not be rejected, despite all groups rejected a tax amnesty. We predict that this effect should be robust throughout different cultures and work independently from whether a group agrees to or rejects a tax amnesty.

LET THE PEOPLE DISCUSS BEFORE VOTING

Hypothesis 2: Discussion prior to the vote has a stronger positive impact on tax compliance compared to a voting procedure without discussion.

Discussion allows to exchange arguments between group members and enhances group identification. Others' preferences get visible and moral costs of not behaving in line with the group increase which has a positive effect on tax compliance. Torgler and Schaltegger (2003) observed that decomposing the voting parameter into voting without discussion and voting with discussion leads to the result that the coefficient for the variable voting with discussion remained significant, contrary to the one without discussion. We also predict such an effect including Costa Rica into the analysis.

SHORT-TERM POLITICS TRUMPS LONG-TERM GOALS

Hypothesis 3: The anticipation of future tax amnesties reduces tax compliance.

It is reasonable to assume that governments invest for short-term political advantages in order to be re-elected. Thus, political motivation lays in the short-term advantages of a tax amnesty (see, e.g., the recent tendencies in Italy). It is not surprising that many countries have more than one amnesty per generation. Posner (2000), for example, finds a positive correlation between tax amnesties and unstable governments with data from the United States. But short-term politics tends to trump long-term goals of enhancing tax compliance. Previously honest

taxpayers feel treated unjustly when others have the opportunity of a tax amnesty more than once. In other words, intrinsic motivation to voluntarily comply with tax laws crowds out. Delinquents have little incentive to get back into the tax system, they just hope for future acts of grace by the government.

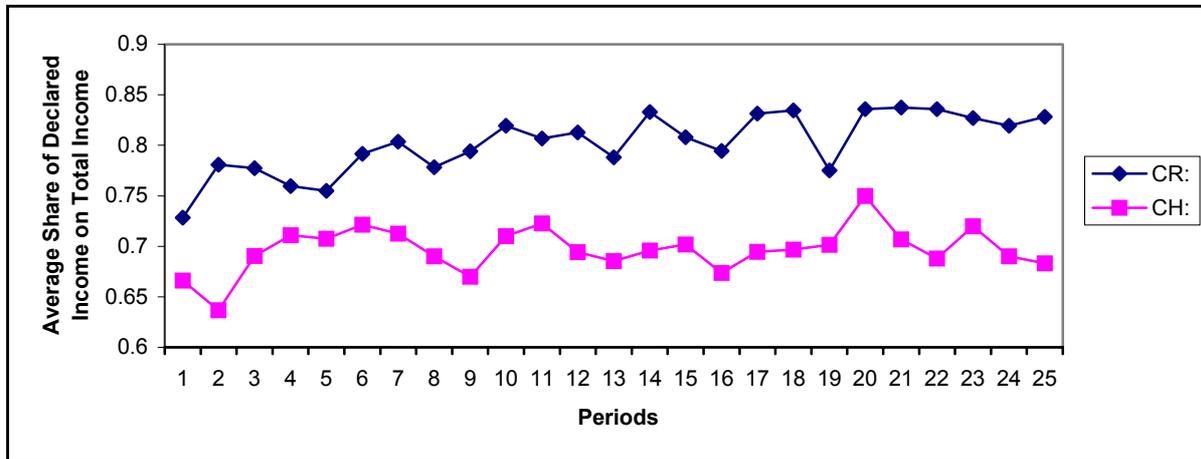
In order to analyse the effect of multiple tax amnesties on tax compliance, our experimental design includes a second amnesty although subjects had been informed that no further amnesties will take place. The second amnesty signals that the government cannot be trusted which increases expectations of additional tax amnesties. In their experiment conducted in the United States Alm, McKee and Beck (1990) find that expectations of an amnesty reduce compliance. The design of our experiment is close to theirs to evaluate the robustness in other cultural settings.

IV. EXPERIMENTAL RESULTS

The dependent variable of our experiment is the individuals' compliance rate in a given round, specified as the ratio of the reported income on the true income in a specific round. Hence, the compliance rate varies between 0 and 1. *Figure 1* shows tax compliance over time for both countries. It can be observed that for all years the tax compliance rate is higher in Costa Rica than in Switzerland. The minimum value for Costa Rica (Switzerland) is 0.73 (0.64), the maximum 0.84 (0.75), the mean 0.80 (0.70) and the standard deviation 0.022 (0.029). Thus, the results indicate a great difference between Costa Rica and Switzerland, with higher values for Costa Rica.

In order to evaluate whether this cultural effect is stable or just a statistical artifact, we perform a multivariate analysis. In a first step, random Tobit maximum likelihood estimations have been done as our dependent variable varies only between 0 and 1 and many observations take the values 0 and 1. Results are presented in *Table 3* and the variables are explained in detail in *Table A1* (see Appendix).

Figure 1
Tax Compliance Rate Over Time



Note: The abbreviations *CR* and *CH* stand for Costa Rica and Switzerland, respectively.

The basic estimation equation reads as follows:

$$TCR_{it} = \beta_0 + \beta_1 \cdot CTRL_{it} + \beta_2 \cdot AM1_{it} + \beta_3 \cdot AM2_{it} + \beta_4 \cdot VOTE_{it} + \beta_5 \cdot NATIVE_i + \beta_6 \cdot CR_i + \varepsilon_{it}$$

where TCR_{it} denotes the tax compliance rate. $CTRL_{it}$ is a panel of control variables including the number of audits per person, the nominal fine for tax evasion, the transfer payment obtained in each period. $AM1_{it}$ is a dummy variable that compares the pre-amnesty period with the post-amnesty period (value=1) whereas $AM2_{it}$ considers the case for a second amnesty. $VOTE_{it}$ is the dummy variable of interest that differentiates between the pre-voting and the post-voting period. Furthermore, with the dummy variable $NATIVE_i$ we differentiate between native individuals and foreigners. Furthermore, we integrate the dummy variable CR_i for Costa Rica (reference group: Switzerland) to control whether the differences between Switzerland and Costa Rica remain robust.

Table 3 presents the results. Additionally, and in order to consider the problems that arise from heteroscedasticity, *Table 3* displays also White corrected standard error values. Furthermore, to take into account individual differences we use least square estimations,

clustering over individuals. In all estimation versions, two equations are performed. The first equation contains one voting variable whereas the second equation differentiates between voting with discussion and voting without discussion using an interaction term.

The results indicate that hypothesis 1 cannot be rejected. The coefficient of the variable VOTING is significant with a positive sign. Giving individuals the possibility to vote increases post-voting tax compliance behaviour. Interestingly, all groups who had the chance to vote always opted for an amnesty in Costa Rica whereas in Switzerland the option was refused each time. Thus, the positive effect of the voting possibility is independent of whether the amnesty has been accepted or not. Furthermore, our results indicate that political participation has a positive impact on tax compliance irrespective of the cultural setting. This is interesting as direct-democratic participation rights are much less developed in Costa Rica (Latin America) than in Switzerland. Thus, the results indicate that increasing individuals' participation rights might have a positive effect on tax compliance independently of the cultural background and the historical experience.

In a next step we will analyse whether there is a difference in tax compliance when the voting procedure is accompanied by public discussions prior to the ballots in contrast to when discussion is not allowed. In order to test hypothesis 2, we decompose the dummy variable VOTING into the dummy variables VOTING WITH DISCUSSION and VOTING WITHOUT DISCUSSION. The results in *Table 3* indicate that hypothesis 2 cannot be rejected. The coefficient of the variable VOTING WITH DISCUSSION is significant, whereas this does not hold for the variable VOTING WITHOUT DISCUSSION even though showing a positive correlation, too. Thus, the key message favouring tax compliance is to foster public communication before casting votes for a tax amnesty. Voters' interaction in a face-to-face situation gives them the opportunity to identify others' preferences.

Hypothesis 3, postulating the negative effect of multiple amnesties on tax compliance, cannot be rejected either. In the pooled version, the first amnesty had a significant positive effect on tax compliance. On the other hand, the second amnesty did not significantly increase compliance in the post-amnesty period. These findings support the view that amnesties should not be conducted in short intervals, since individuals anticipate future tax amnesties eventually crowding out tax compliance.

In line with the findings by Torgler (2003a) in another experiment and in accordance with the descriptive survey results on tax morale, individuals participating in the experiment in Costa Rica show a significantly higher tax compliance than the Swiss experiment

participants. Thus, it seems that societal differences between countries have an impact on tax compliance.

Table 3
Determinants of tax compliance in Switzerland and Costa Rica

Variables	Random-Effects Tobit Regressions				Pooled Tobit, White Corrected Standard Errors				Pooled Least Squares, Clustering Over Individuals			
	Eq. 1		Eq. 2		Eq. 1		Eq. 2		Eq. 1		Eq. 2	
	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	z-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
a) Deterrence												
audit	-0.200***	(-11.84)	-0.200***	(-11.59)	-0.199***	(-12.16)	-0.195***	(-11.90)	-0.070**	(-2.68)	-0.068**	(-2.48)
penalty	-0.003***	(-6.27)	-0.003***	(-6.22)	-0.003***	(-8.18)	-0.003***	(-7.92)	-0.001***	(-6.44)	-0.001***	(-6.44)
b) Group Transfer												
transfers	0.003***	(4.77)	0.003***	(4.26)	0.003***	(4.70)	0.003***	(4.22)	0.001***	(4.97)	0.001***	(5.30)
c) Tax Amnesty												
amnesty	0.281***	(8.05)	0.287***	(8.24)	0.281***	(8.15)	0.287***	(8.35)	0.108***	(3.70)	0.108***	(3.74)
second amnesty	0.106	(1.42)	0.1	(1.34)	0.106	(1.43)	0.1	(1.35)	0.08	(1.28)	0.048	(0.82)
d) Political Participation												
voting	0.299***	(7.82)			0.299***	(7.85)			0.111**	(2.46)		
voting with discussion			0.483***	(8.94)			0.483***	(9.09)			0.160**	(2.54)
voting without discussion			0.148***	(3.09)			0.148***	(3.10)			0.060	(0.99)
e) Culture												
native	-0.046	-1.52	-0.064**	-2.08	-0.046	(-1.57)	-0.064**	(-2.14)	0.023	(0.44)	0.019	(0.37)
Costa Rica	0.557***	17.44	0.577***	17.60	0.572***	(16.69)	0.577***	(16.85)	0.207***	(4.04)	0.207***	(4.04)
Log-likelihood	-2633.85		-2621.18		-2633.85		-2621.18					
Prob > F									0.000		0.000	
Number of Observations	3000				3000				3000		3000	
R-squared									0.17		0.17	

Notes: Dependent variable: tax compliance rate as the ratio of reported income to true income. In the reference group are foreigners, Switzerland. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

There is a slight tendency for foreigners to report their revenues more honestly than their native counterparts. However, the coefficients are not significant in the clustered version. Not surprisingly, higher group transfers lead to a higher compliance, as it indicates that other taxpayers also contribute to the public good. Contrary to neo-classical assumptions for

example in the field of economics of crime and in line with Torgler (2003a) there is a significant negative correlation of both deterrence factors (audit probability and penalty) with tax compliance.

V. CONCLUSIONS

These days, tax amnesty programs gain huge political attention not only in OECD countries like Italy or Germany, but also in Latin America. In Costa Rica a new tax amnesty is a key issue in the tax reforms approved by the congress and the president in December 2002 for the year 2003.

However, there is a surprising lack of empirical evidence on the effects of tax amnesties on compliance. According to the authors' knowledge hardly any empirical evidence is available for Latin America. Thus, this paper has a novel framework conducting the same tax amnesty experiment in Switzerland and Costa Rica, two different countries with different cultural and historical backgrounds. The purpose of this paper is to analyse whether the effects of voter participation on the decision of arranging a tax amnesty affects tax compliance in the long run. Our results suggest that tax compliance increases significantly when people have the opportunity to vote on a tax amnesty. The strongest effect can be achieved when the voting procedure is coupled with pre-voting discussion. Interestingly, these results are robust across the two different cultures. Thus, giving subjects a higher opportunity set has a positive impact on the intrinsic motivation to pay taxes.

Furthermore, in line with Alm, McKee and Beck (1990) we found that multiple tax amnesties in a short interval reduce the efficiency of such a program. Government's credibility is reduced and individuals' tax compliance is crowded out since honesty is not honoured. Thus the results indicate that tax amnesty programs should be used as a "once-per-generation" opportunity to increase tax compliance and to avoid negative compliance effects.

Interestingly, our findings indicate that tax compliance is significantly higher in Costa Rica than in Switzerland. As these experiments generate data from different countries under the same settings, controlling extraneous influences as the tax agency (enforcement effort, tax rate, income level), differences arise from different social norms or social institutions. The payments given to the subjects having been adapted to the economic situation in the country (individuals in Costa Rica have received lower payments), the differences in the degree of compliance should not be caused by differences related to the experimental payments. Hence,

the effects of a tax amnesty tend to depend on the degree of internal and external social norms in a country. It is therefore no surprise that in general strong variances regarding the success of an amnesty are observed in different countries in the world.

Generally, our results indicate that there are limitations to the economics-of-crime approach. This can be concluded from the parameters audit probability and penalty but also from the high average degree of compliance over time. The standard analytical work, which implies a rational choice framework, would predict a lower tax compliance rate than observed in these experiments. Thus, it might be important to incorporate the role of societal institutions and social norms into tax compliance models to better understand why so many individuals comply.

APPENDIX

Table A1
Description of Variables

Variables	Description
compliance rate	ratio of the reported income to the true income.
audit	number of times a subject has been controlled adjusted after every audit (results: mean= 0.65, min= 0, max=5).
penalty	total penalty amount after detection (results: mean=5.65, min= 0, max= 800).
transfers	amount an individual obtains from the group fund at the end of the previous round (results: mean= 72, min=30.24, max=194.67).
voting	dummy variable (0=pre-voting period, 1=post-voting period).
amnesty	dummy variable (0=pre-amnesty period, 1=post-amnesty period).
second amnesty	dummy variable (0=pre-second amnesty period, 1=post second amnesty period).

REFERENCES

- Alm, J. (1998), Tax Policy Analysis: The Introduction of a Russian Tax Amnesty, Working Paper 98-6, International Studies Program, Georgia State University.
- Alm, J. and W. Beck (1991), Wiping the Slate Clean: Individual Response to State Amnesties, *Southern Economic Journal*. 57: 1043-1053.
- Alm, J. and W. Beck (1993). Tax Amnesties and Compliance in the Long Run: A Time Series Analysis, *National Tax Journal*. 46: 53-60.
- Alm, J. and J. Martinez-Vazquez (2001). Societal Institutions and Tax Evasion in Developing and Transitional Countries, Public Finance in Developing and Transition Countries: Conference in Honor of Richard Bird, Atlanta, Georgia, April 4 – April 6, 2001.
- Alm, J., M. McKee and W. Beck (1990). Amazing Grace, Tax Amnesties and Compliance, *National Tax Journal*. 43: 23-37.
- Alm J., I. Sanchez and A. De Juan (1995). Economic and Noneconomic Factors in Tax Compliance, *KYKLOS*. 48: 3-18.
- Arroyo, A. (2002). Proyecto ley de contingencia fiscal, Tax&Legal news, October 24.
- Amén, A., A. Arroyo and S. García (2002). Tax Contingency Law, Tax&Legal news, December 20.
- Christian, C. W. and S. Gupta (2003). Evidence On Subsequent Filing from the State of Michigan's Income Tax Amnesty, *National Tax Journal*. 55: 703-721.
- Cummings, R. G., J. Martinez-Vazquez and M. McKee (2001). Cross Cultural Comparisons of Tax Compliance Behavior, Working Paper No. 01-03. George State University. School of Policy Studies.
- Das-Gupta, A. and D. Mookherjee (1995). Tax Amnesties in India: An Empirical Evaluation, IED Discussion Paper Series, No. 53, Boston University.
- Dubin, J. A., M. J. Graetz and L. L. Wilde (1992). State Income Tax Amnesties: Causes, *Quarterly Journal of Economics*. 7: 1057-1070.
- Fisher, R. C., J. H. Goddeeris and J. C. Young (1989). Participation in Amnesties: The Individual Income Tax, *National Tax Journal*. 42: 15-27.
- Hasseldine, J. (1998). Tax Amnesties: An International Review, *Bulletin for International Fiscal Documentation*. 52: 303-310.
- Posner, E. A. (2000). Law and Social Norms: The Case of Tax Compliance, *Virginia Law Review*. 8: 1781-1819.
- PWC (2002a). Argentine Tax Authorities Extend Deadline to Use Argentine Treasury Bonds to Pay Past Due Tax, <http://pwcglobal.com>.
- PWC (2002b). Mexico: Tax Reform for the Year 2001, <http://pwcglobal.com>.
- Torgler, B. (2002a). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys*. 16: 657-683.

- Torgler, B. (2003a). Cross Culture Comparison of Tax Morale and Tax Compliance: Evidence from Costa Rica and Switzerland, WWZ Discussion Paper, University of Basel.
- Torgler, B. (2003b). Tax Morale in Latin America. WWZ Discussion Paper, University of Basel.
- Torgler, B. and C. A. Schaltegger (2003). Tax Amnesty and Political Participation, WWZ-Discussion Paper 03/07, Basel: WWZ.

Lebenslauf

Benno Torgler von Au SG, geboren in Zürich am 30. November 1972 als Sohn von Hans Jakob Torgler und Elisabeth Torgler geb. Schiegg. Studium der Wirtschaftswissenschaften von 1994 bis 1999 an der Universität Zürich. Lizentiat an der Universität Zürich 1999 (lic. oec. publ.). 2000-2003 Assistent von Prof. Dr. René L. Frey an der Wirtschaftswissenschaftlichen Fakultät der Universität Basel. 2000 Beginn einer Dissertation unter Leitung von Prof. Dr. René L. Frey (Referent) und Prof. Dr. Dr. h.c. mult. Bruno S. Frey (Korreferent). Abschluss der Dissertation im Juli 2003. Ab September 2003 für ein Jahr Research Scholar an der Georgia State University in Atlanta (USA).

