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Determinants of Employment in the Ministerial Bureaucracy*

Thomas Braendle[†]

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Abstract

Senior officials in the ministerial bureaucracy are responsible for the coordination of public service activity and their number has grown enormously since World War II. We study the growth in employment of this politically sensitive high-profile occupational group from a political economics perspective. We analyze how political partisanship, political patronage after changes in government, and the selection of public servants into politics affect senior official employment. Based on a unique time-series, cross-sectional data set for the German Laender, we find mixed evidence for the effect that the political selection of public servants has on senior official employment. We find some evidence for political patronage.

Keywords: political selection, public servants, public-sector growth, bureaucracy, patronage

JEL classification: D72, D73, H11, H72

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1 Introduction

The ministerial bureaucracy is mandated to draft law and it is responsible for the implementation of law and thus coordinates the public service. This top echelon of the public bureaucracy absorbs considerable public funds and public personnel and has grown enormously since World War II.

We analyze whether political economics factors impact employment at the top level of bureaucracy. We focus on the growth in senior official employment in the ministerial bureaucracy. Senior government officials are of particular interest since they are entrusted with the operational governance of the public service. Furthermore, they directly interact with the government and the legislature; either through close personal linkages or even personal unions.¹

The functional approach to explaining the growth of the public sector focuses on demand-side explanations, such as changes in taste, income or the composition of the constituents. Complementary to this perspective, we investigate three political economics determinants and apply them to employment growth of ministerial bureaucrats. First, we ask whether the traditional partisan bias in policy choice matters for senior official employment. Second, we analyze how the changes in the composition of government that are indicative of party-political penetration in the top echelons of bureaucracy impact senior official employment. As a third determinant, we incorporate political selection. We focus on the role of public servants elected to parliament. Public servants in parliament compromise the separation of powers and thus face a conflict of interest. This is due to their double role as agents in public service and as principals who supervise the public service in parliament. Their professional interests might systematically bias legislative outcomes in favor of expansionary public budgets and inflated public-sector employment, including the ministerial bureaucracy.

We take advantage of a unique time-series, cross-sectional data set on the growth of senior public servant employment in the ministerial bureaucracies of the German Laender (as the German federal states are called) covering the time period 1957-2004. This data set is provided by Manow and Wettengel (2006). We additionally gather information on the ideological composition of the government, the change in the composition of the coalition government, and the selection of public servants into parliament.²

¹For example, personal unions exist where there is no incompatibility rule to restrict public servants from simultaneously holding a legislative mandate.

²For Germany, we include all employees that concurrently hold public law contracts and receive public pay. Public servants elected to parliament generally come from professions in education (i.e., teachers or university professors), the armed forces, the police, public hospitals, the judiciary, various fields of public administration including mayors and district administrators (*Landräte*). Also included are employees of public enterprises. Privatizations are also taken into account; e.g., the major privatizations in the 1990s of Deutsche Post and Deutsche Telekom.

We find no evidence for the traditional partisan hypothesis as there is no growth-rate increase in senior official employment in the ministerial bureaucracies when a center-left government is in place. We find some evidence for the impact of changes in the composition of governments on growth in senior official employment. This is consistent with political patronage considerations. Consistent with a special interest hypothesis, we find a positive correlation between increases in the representation of public servants in parliament and growth in senior official employment. In an explorative extension of the empirical analysis, this finding is, however, not confirmed if we try to additionally explore the long-run relationship between the representation of public servants in politics and the growth of senior official employment.

The rest of the paper is organized as follows. Section 2 presents the theoretical considerations and gives information on the German institutional framework. Section 3 contains the description of the data set and the empirical analysis. Section 4 offers concluding remarks.

2 Theoretical considerations

Public sector growth is induced by either an increase in employment or in pay, or a combination of both. We concentrate on the employment aspect and select the senior-level officials in the ministerial agencies who form a politically sensitive high-profile occupational group within the public service.³ Similar to the federal level, the senior-level officials in the ministerial bureaucracies of the Laender are entrusted with drafting legislation and implementing the law. Moreover, they are responsible for administering and for supervising most of the public service.

Before developing the theoretical arguments, we provide some information on the German political system. Germany (and its subnational jurisdictions) is a parliamentary democracy. Its governments are most frequently formed by coalitions, headed either by the Christian Democratic Party (the center-right party) or the Social Democratic Party (the center-left party) and sustained by a parliamentary majority. The smaller party (i.e., the junior coalition partner) is typically either the Free Democratic Party (*FDP*) or the Green Party (*Die Grünen*).

With a fraction of public servants in the working population of 13.3% (in 2005), the public service in Germany is relatively large compared to, for instance, the United States or Switzerland.

³We analyze the senior officials in the ministerial bureaucracy of the German Laender who are covered by salary class B(1-10). This includes positions such as the (deputy assistant) under-secretary/ head of ministerial division (B1-7) (*leitender Ministerialrat* or *Ministerialdirigent*), the district president (B8) (*Regierungsbezirkspräsident*), the assistant secretary of state/head of ministerial department (B9) (*Ministerialdirektor*), and the parliamentary state secretary (B10) (*beamteter* or *parlamentarischer Staatssekretär*). The prime minister (*Ministerpräsident*) and the minister/secretary of state of each department (*Ressortminister*) of the German Laender are not included.

The German Laender have legislative competencies in public education, cultural affairs, public security and public administration which include the organization of the ministerial bureaucracies in terms of budget and personnel. The Laender government budget proposals must be ratified by parliament on an annual basis.

With regard to the employment conditions in the ministerial bureaucracy, it is important to note that officials enjoy public service status which guarantees their right to life tenure, fixed remuneration and promotion schemes.

2.1 Political partisanship

The partisan approach emphasizes that party ideology affects policy choice. Left-wing governments are expected to pursue a policy reflecting the preferences of their partisan voters. It is argued that left-wing governments appeal more to the labor base and favor expansionary fiscal (and monetary) policy.⁴ Accordingly, they assign more competencies to the state. This might result in a larger state-production of goods and services which requires more public sector employment in general and more employment in the ministerial bureaucracy in particular. Compared to center-right governments, a center-left government will be less restrictive regarding decisions on public-sector employment (the ministerial bureaucracy included).

Based on this theoretical argument, we derive the *partisan hypothesis*: Center-left governments increase senior official employment in the ministerial bureaucracy.

Previous empirical research on the German Laender shows mixed evidence with regard to the effects of ideology on closely related issues, such as overall government expenditure, public debt and public revenue. Berger and Holler (2007) and Jochimsen and Nuscheler (2011) come to the conclusion that ideology does not systematically matter. In contrast, Schneider (2007) shows that center-left governments increase budget deficits. Focusing on single expenditure categories, Galli and Rossi (2002) find no evidence that government ideology affects the allocation of public expenditure. Oberndorfer and Steiner (2007) report evidence for a positive relationship between center-right governments and spending on higher education. Similar results are found by Potrafke (2010). Right-wing governments spend more on higher education and cultural affairs, whereas left-wing governments increase spending on the school system. One reason for the mixed evidence might be the ideological convergence of the Social Democratic Party (SPD) and the Christian Democratic Party (CDU) over time.

⁴See Blais and Nadeau (1982) and De Haan and Sturm (1994) for empirical evidence for a (center-left) partisan bias in fiscal policy, and Alesina et al. (1997) for monetary expansionary policy under center-left governments.

2.2 Political patronage

The allocation of senior-level positions in the ministerial bureaucracy to public servants who are partisan to the government's ideology is often argued to follow political cycles. On the one hand, this strategy serves the function of reducing asymmetric information and aligns the interests of the government and the ministerial bureaucracy. Public goods and services can thus be provided more efficiently as there are fewer obstacles in the multiple delegation chain (Strøm 2000). On the other hand, political allocation of senior-level positions to applicants with partisan interests conflicts with the principles of preserving a politically independent public bureaucracy that is recruited and promoted on the basis of merit. A politicized public service undermines the separation of powers and makes the abuse of sovereign power more likely (see for example von Arnim 1980).

We want to test if political cycles in the assignment of senior official positions take place after elections. We apply the argument to the following hypotheses:

Political patronage hypothesis I: If there is a complete change in the composition of (coalition) government, an increase in senior official employment in the ministerial bureaucracy takes place.

Political patronage hypothesis II: If there is a minor change in the composition of (coalition) government, an increase in the senior official employment in the ministerial bureaucracy takes place.

The *political patronage hypothesis I* applies to situations in which the government and its sustaining parties change completely. The *political patronage hypothesis II* refers to situations in which the larger party sustaining government remains the same and only the smaller party in a coalition government changes. The *patronage hypothesis I* is supposed to have a larger effect on the growth in employment in the ministerial bureaucracy.⁵

Manow and Wettengel (2006) investigate whether there are increases in senior official employment in the ministerial bureaucracy of the German Laender directly before or after elections that come with changes in the composition of (coalition) government. They find some evidence for political patronage when analyzing decade-specific developments of senior official employment.⁶

⁵There is also the reasoning that governments which anticipate losing upcoming elections strategically increase employment in the ministerial bureaucracy in order to either reward loyal partisan friends and followers with positions in the public service by means of patronage or generate partisan obstacles in the ministerial bureaucracy for the newly elected government. The latter argument is similar to the reasoning of strategic debt accumulation put forward by Tabellini and Alesina (1990). If such strategic increases in employment take place before elections, it is then more difficult to find evidence consistent with the political patronage hypotheses.

⁶For a discussion of the politicization of the German ministerial bureaucracy from a public administration science point of view see Mayntz and Derlien (1989).

Iyer and Mani (2007) analyze data on bureaucrat assignments from the Indian Administrative Service. They find significant increases in bureaucrat transfers directly after elections.⁷

2.3 Political selection of public servants

Recent research in political economics emphasizes that differences in the composition of the pool of politicians with regard to quality characteristics matter for political outcomes.⁸ We focus on one important quality dimension; i.e., professional background. This heterogeneity dimension fundamentally determines the personal socio-economic conditions that influence an individual's decision to run for office. More importantly, it shapes private economic interests and thus behavior once elected.

We concentrate on public servants in parliament.⁹ This single largest professional group in parliament poses a major challenge when considering the effects of political selection on public sector governance and public sector employment.

As proponents and representatives of the public service, public servants in parliament may favor policy choices that grant more competencies to the state and provide more services through public authorities. This results in a larger public sector including an expansion in public sector employment.

When analyzing public servants in parliament from a public choice perspective, an additional argument is put forward; namely the conflicts of interest. Conflicts of interest occur due to the personal unions and affiliations that are formed between the legislature and the public service. For example, persons holding both a legislative mandate and an executive position may face decisions as legislators that affect their role in the executive branch (for instance, voting on the budget of the proper department).¹⁰ Public servants in parliament facing this conflict of interest may subject public sector employment decisions to less scrutiny or promote selective public service interests in the political decision-making process. As a result an expansion in public sector employment in general and in employment in the ministerial bureaucracy in particular

⁷In a related paper, Iyer and Mani (2012) provide empirical evidence for the political cycle influence on bureaucrat careers in India.

⁸Analyses about the consequences of a different composition of the pool of politicians for political outcomes are investigated by Besley et al. (2011), Gagliarducci and Nannicini (2012), and Chattopadhyay and Duflo (2004).

⁹See Braendle and Stutzer (2011) for an analysis of the representation of public servants in parliament in a cross-country perspective and Braendle and Stutzer (2010) for the case of the German Laender. In an early contribution, Couch et al. (1992) focus on the relationship between the representation of educators in politics and the allocation of public funds for education.

¹⁰If public servants elected to parliament are covered by incompatibility provisions that come with guaranteed reemployment, the conflicts of interest is intertemporal.

might take place. For the ministerial bureaucracy, the conflicts of interest are immanent. In the case of personal unions, public servants elected to parliament are ministerial bureaucrats. Even without personal unions, conflicts of interest hold and are due to the frequent interaction between the legislature and the ministerial bureaucracy with regard to drafting and revising the law, and parliamentary control issues.

Based on the conflicts of interest, we propose the *special interest hypothesis*: The larger the fraction of public servants elected to parliament, the stronger the direct interest representation of the public service when legislating. An increase in senior official employment in the ministerial bureaucracy is thus expected.

3 Empirical analysis

3.1 Data

In order to test the hypotheses empirically, we use a newly composed data set. We employ the data provided by Manow and Wettengel (2006) as the basis for the dependent variable. Manow and Wettengel (2006) carefully collect data on the high-ranking official employment in the ministerial bureaucracies of ten German Laender covering the time period 1957-2004.¹¹ In their analysis the (absolute) changes in senior official employment on an annual basis are examined. We adjust the data to identify effects on the basis of legislative periods. As we are interested in relative changes, we compute the growth rate of senior official employment in the ministerial bureaucracy; i.e., the percentage change in senior official employment for 116 legislative periods. We additionally adjust the percentage change of senior official employment for the length of the legislative periods. To explain the variation in the percentage change in senior official employment, we compile data relating to the political partisanship, changes in the composition of governments, and the representation of public servants in parliament as of the beginning of each legislative period. All determinants are assumed to impact growth in senior official employment until the end of the respective legislative period.¹²

[Figure 1 about here]

¹¹Manow and Wettengel include Baden-Württemberg, Bavaria, Berlin, Bremen, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Schleswig-Holstein, and Saar. For the city state Hamburg no comparable data is available, and for the new German Laender no data has been collected.

¹²One intuition for this assumption about the time structure is that politicians cannot implement their preferred policy immediately after election and rather have to implement it step by step over the whole legislative period.

Figure 1 illustrates the growth rate in senior official employment in the ministerial bureaucracy of Schleswig-Holstein per legislative period. On average, the growth rate of senior official employment is 25.31% per legislative period - with a minimum of -7.23% in the 13th legislative period (1992 - 1996) and a maximum of 116.1% in the 6th legislative period (1967-1971).^{13,14} The time series reveals strong differences between the single legislative periods. In particular, in the late 1960s an extreme increase took place. This is due to a general upgrade induced by a federal reform of the public service remuneration scheme (*Beamtenbesoldungsordnung*). This reform was implemented in all Laender between 1966 and 1973.¹⁵ In contrast, from 1983 onwards, we observe only small increases or even decreases in the growth of senior official employment.

Explanatory variables

The first variable takes political partisanship into account. Variables two and three try to identify the political patronage hypotheses. The last variable is aimed at political selection.

Government led by the Social Democratic Party (SPD): This variable capturing the political partisanship is coded 1 (0 otherwise) if the SPD is the only party or the stronger party sustaining the government in parliament. On average, 43% of the governments in the German Laender are led by the SPD.¹⁶

Major change in the composition of government: This variable takes value 1 (0 otherwise) if a complete change in the composition of the (coalition) government takes place. This is the case 12 times in our dataset.

Minor change in the composition of government: This variable takes value 1(0 otherwise) if the smaller party in a coalition government changes, but the stronger party sustaining government remains the same. This occurs 31 times in our dataset.

¹³Given the employment guarantee, a decrease in senior official employment is mainly due to retirement or resign.

¹⁴With regards to the growth of aggregate senior official employment in the ministerial bureaucracy of Schleswig-Holstein, we observe 24 senior officials at the beginning of the 4th legislative period in 1958. The respective number at the end of the 15th legislative period in 2000 is 225. See Figure A.1 in the Appendix for a comparison. For all the ten German Laender included, in 2000, 4807 senior officials are counted in the ministerial bureaucracies. The respective number in 1960 is 524.

¹⁵Between the late 1960s and late 1970s public labor law reforms brought about reduced work loads requiring an increase in public employment. For the same period, it is often argued that the government increased public sector employment to counteract increasing private sector unemployment.

¹⁶Situations in which the SPD is the senior partner in coalition governments composed of the two major parties are excluded. The partisan bias is expected to be weaker with two almost equally strong coalition partners.

Percentage-point change in the fraction of public servants in parliament: This variable captures the change in the representation of parliamentarians with a previous or concurrent occupation in the public service. Data is based on Braendle and Stutzer (2010). On average, the percentage-point change in the fraction of public servants in parliament is 1.19. In Bremen, the largest percentage-point changes are observed. In the election of 1967, the fraction of public servants decreases from 46.9% to 31.7% (a percentage-point decrease of 15.2). In the election of 1955, the fraction of parliamentarians with a public sector background increases from 34% to 55%.¹⁷

The information on the political partisanship of government, the major and minor changes in the composition of (coalition) government is taken from Manow and Wettengel (2006) and complemented with information from the German electoral commission (*Bundeswahlleiter*). For more descriptive statistics see Table A.1 in the Appendix.

3.2 Estimation strategy and empirical results

We conduct our analysis in several steps. We present the partial correlation analysis from multiple regressions for the identified determinants of the percentage change in senior official employment. Basically, we encounter three challenges analyzing this data set: The small number of observations, the time-series, cross-sectional structure, and a reform period with extreme observations. The small number of observations sparks econometric concerns, however, as information on the development of senior official employment in the ministerial bureaucracy for ten German Laender covering 116 legislative periods constitutes a unique data set and thus invites an investigation. As the number of observations cannot be enhanced easily, we, first, address dynamics applying dynamic panel estimators in Table 1. Based on this, we concentrate on the extreme observations within the reform period, introducing dummy variables for the reform period and respective interaction terms in Table 2.¹⁸ In Table 3, we check the robustness of our results to the inclusion of demand side factors. In a short explorative analysis, we further look at the long-run relationship between political selection and growth in senior official employment in Table 4. For each step we briefly motivate the estimation strategy.

Dynamics

In panels I and II in Table 1, panel-corrected standard errors taking into account panel heteroscedasticity and correlation across panels are computed as proposed by Beck and Katz (1995).

¹⁷On average, 43.1% of the members of the Laender parliaments have a public sector background in our data set. The fraction is lowest in Lower Saxony (1963); i.e., 14.1% and highest in Baden-Württemberg (1988); i.e., 61.6%.

¹⁸One might argue that a data set with extreme observations is more adequately analyzed applying a quantile regression approach. However, given the panel structure of the data set and the small number of observations, OLS seems a plausible compromise.

Dynamics are captured by incorporating serially correlated errors. As there might be time invariant socio-economic or institutional conditions specific to some Laender that are not taken into account by our explanatory variables but which systematically affect the change in senior official employment in the ministerial bureaucracy, we include Laender-fixed effects in panel I. Furthermore, there might be unmeasured time-specific effects on the growth in senior official employment that are correlated with some of the determinants identified above. As examples serve time-specific political pressures, such as high private sector unemployment or strong public trade unions inducing public labor law reforms. Since there is no comparable data on these variables over the whole time range of our study, these determinants cannot be included directly in the first place. Therefore, we include Laender as well as decade-fixed effects, taking into account both unobserved Laender and time-specific variation in panel II.

As we can see, no statistically significant relationships emerge that are consistent with our hypotheses on political partisanship and political patronage. Only for minor changes in the composition of coalition governments, do we find a positive - though not statistically significant - partial correlation which points in the theoretically expected direction. Consistent with our special interest hypothesis, we find a positive and - in panel I statistically significant - partial correlation between the percentage-point change in the fraction of public servants in parliament and the percentage change in senior official employment. As seen in the descriptive analysis for Schleswig-Holstein, there are strong differences in the growth rate of senior official employment between different periods. When we include decade-fixed effects in panel II, the variation in the dependent variable that is explained increases from 11% to 61%. However, when including time-fixed effects, none of the theoretically identified factors turns out to be statistically significant at conventional levels.

[Table 1 about here]

In panels III and IV, we estimate a dynamic panel model which explicitly includes a lagged dependent variable. We apply the least squares dummy variables estimator for dynamic panel data as proposed by Bruno (2005). This estimator corrects for the small number of cross-sectional units.¹⁹ One possible driver behind negative correlation in the residuals for consecutive legislative periods is that an expansion in employment in one period results in a more disciplined

¹⁹In Nickell (1981), it is shown that the least squares dummy variable estimator (the common fixed effects estimator) is not consistent for finite T in dynamic panel data models. A number of consistent estimators, such as Arellano and Bond (1991) and Anderson and Hsiao (1982) have been proposed as an alternative to the least squares dummy variable estimator. However, the properties of the proposed estimators hold for large samples (large N). Bruno (2005) presents a bias-corrected least squares dummy variables estimator for dynamic (unbalanced) panel data models with a small number of cross-sectional units, as is the case in our empirical model.

behavior regarding decisions on public employment in the following period. This might be due to budget constraints and the political feasibility of public sector growth. We estimate one specification without decade-fixed effects (panel III) and one with decade-fixed effects (panel IV).

The following empirical findings emerge from these refined estimations (panels III and IV). In panel III, the results are similar to the results found in panel I. We see a positive and statistically significant partial correlation between the percentage-point change in the fraction of public servants in parliament and the growth rate of senior official employment. The coefficient for the lagged dependent variable is not statistically significant. Only when we include decade-fixed effects in panel IV, do we find a statistically significant negative relation between a past increase and a current increase in senior official employment. The elasticity is -0.45 in panel IV. We, again, find no evidence for the partisan hypothesis.²⁰ Besides, we find a positive and statistically significant relationship between a minor change in the composition of coalition governments and the growth rate of senior official employment. This is consistent with the political patronage hypothesis II. With regard to the size of the coefficient: If there is a minor change in the composition of government, the growth rate of senior official employment is, on average, 23.5% higher. We find again no evidence for the political patronage hypothesis I which is assumed to have a larger effect on senior official employment growth. It is, however, difficult to come up with a consistent explanation for why we find no evidence for political patronage when major coalition government changes take place. For the percentage-point change in the fraction of public servants, the size of the coefficient diminishes by approximately one third and loses statistical significance when including time-fixed effects.

Reform period

In Table 2, we come up with two propositions on how to cope with the reform period (1966-1973). Mainly due to a general upgrade the reform period is characterized by an enormous expansion in senior official employment. We take the specification III in Table 1 as our basis. This specification puts strong restrictions on the data and seems an adequate estimation strategy. One strategy is to include a dummy variable for the legislative periods affected. The other strategy is to additionally introduce interaction terms between the variable capturing the reform period and the explanatory variables. In doing this, we can distinguish between normal periods and special

Here, the Arellano-Bond estimator is chosen to initialize the bias correction. We undertake 100 repetitions of the procedure to bootstrap the estimated standard errors. The results change neither qualitatively with a different number of repetitions nor when we choose the Anderson-Hsiao estimator as the initial estimator.

²⁰We also extended our definition of the government being led by the SPD to situations in which the SPD is the leading partner in coalition governments composed of the two major parties. The results, however, did not change qualitatively.

dynamics in the exceptionally expansive period. Panel I in Table 2 repeats the specification III in Table 1 for a better comparability of the results. We find a sizeable and positive impact of the reform period on the growth rate of senior official employment in panel II.²¹ We find a negative and - in contrast to the specification I - a statistically significant partial correlation for the lagged dependent variable. While once again a positive coefficient for the percentage-point change in the fraction of public servants in parliament is estimated, the corresponding standard error is too large to derive strong conclusions. A more sophisticated strategy to take the particular dynamics within this period into account is chosen in panel III. Here, we additionally include interaction terms for the explanatory variables.²² We find a positive and statistically significant partial correlation between the percentage-point change in the fraction of public servants and the growth of senior official employment. The same holds for minor government changes. Within the reform period, we find partial correlations that have - except for major government changes - the opposite sign of the results found without introducing interaction terms. However, none of the estimated coefficients for the interaction terms reaches statistical significance at conventional levels.

[Table 2 about here]

Further robustness analyses

In Tables 3-4, we assess the robustness of our results with additional approaches. We again take the specification III in Table 1 as our basis. We extend our analysis in two directions. First, we control for growth in population, per capita income and unemployment. The inclusion of these factors aims at covering demand-side explanations for public sector growth. In particular, by including unemployment, we are able to test the argument that increased unemployment is counteracted by enhanced general public-sector employment which might be accompanied by an increase in senior official employment. Second, regarding the relationship between political selection and senior official employment growth, we execute an additional robustness check. In the preceding analysis, we concentrated on the impact that changes in the representation of public servants in parliament have on growth in senior official employment. This approach models a short-run relationship and indicates a positive association in our specifications. If we want to approach the long-run (equilibrium) relationship, one possibility is to add the fraction (the stock) of public servants in parliament to the estimation equation.

In Table 3, we include the percentage change in population (in panel II), in income per capita

²¹19 legislative periods in our data set coincide with this reform period.

²²Within this reform period, there is a center-left government in nine out of 19 legislative periods in place. Eight major government changes and one minor government change take place.

(in panel III), and the percentage-point change in the unemployment rate (in panel IV) as proxies for demand-side-based explanations. In all three cases, we lose observations due to the availability of information on the added control variable for early periods. We find a positive coefficient for the percentage change in population. As theoretically expected, with higher per capita income, citizens demand more public goods and services. A 1% increase in per capita income is associated, on average, with a 1.39% increase in the growth rate of senior official employment. We find no evidence for the impact of labor market developments as approximated by the percentage-point change in the unemployment rate.²³ For the determinants identified before, a qualitatively quite similar picture emerges compared to the preceding specifications. Throughout Table 3, we find a positive and statistically significant partial correlation for the percentage-point change in the fraction of public servants in parliament. Regarding the size of the coefficient, we find in specification III that a 1 percentage-point increase in the fraction of public servants in parliament is related to a 1.59% rise in the growth rate of senior official employment.

[Table 3 about here]

In Table 4, we further explore the relationship between the political selection of public servants and growth in senior official employment. Next to the percentage-point change in the fraction of public servants in parliament, we include the fraction of public servants in parliament as a first step in exploring the long-run (equilibrium) relationship. We run the same specifications as in Table 1 and add the fraction of public servants in parliament. We again find a positive and statistically significant partial correlation for the percentage-point change in the fraction of public servants. However, at the same time, we see a negative and statistically significant partial correlation between the fraction of public servants in parliament and the growth rate of senior official employment. In the last panel, we apply an instrumental variable approach to further assess the long-run relationship between political selection and senior official employment growth in the ministerial bureaucracy. The instrumental variable approach allows for the possibility that a third variable maybe driving the representation of public servants in parliament as well as the growth in the employment in the ministerial bureaucracy, resulting in a spurious correlation between the two variables. For example, voters might demand more public servants as legislators and simultaneously demand more public goods and services inducing the government to increase employment in the public sector in general and in the ministerial bureaucracy in particular. To allow a consistent estimation, we instrument the fraction of public servants in

²³We also checked whether changes in the demand side factors are possible drivers of the strong increases of senior official employment within the reform period. Similar to the strategy applied in Table 3, we added an interaction term between the reform period and the respective demand-side factors. However, we find no evidence for systematic relationships.

parliament with its institutional determinants that are not themselves explanatory variables for senior official employment in the ministerial bureaucracy. These instruments are taken from Braendle and Stutzer (2010).²⁴ Panel V reports the results of the second stage of the two-stage least squares estimation.²⁵ The result to notice is the following: If we only exploit the variation in the representation of public servants that is due to varying degrees of incompatibility regime strictness and compensating institutional privileges, we observe a negative correlation with the growth rate of senior official employment in the ministerial bureaucracy. The results of Table 4 seem puzzling. They might be interpreted in the following way. As more public servants are elected into parliament, more public service interests are asserted in the legislative process as approximated by increases in senior official employment growth. However, a strong representation of public servants in parliament (as measured by the fraction of public servants in parliament) is not associated with a permanently higher growth rate of senior official employment.

[Table 4 about here]

Before concluding, one word of caution should be raised as we draw statistical conclusions based on aggregate data. Thus, we face the risk of an ecological fallacy.

To sum up, we find, consistent with a special interest hypothesis, a positive and robust effect of the political selection of public servants on senior official employment growth in the ministerial bureaucracy. When we additionally try to approach the long-run relationship between the representation of public servants in parliament and the growth in senior official employment, this positive relationship is not confirmed. We find no evidence for political partisanship and for political patronage after major changes in coalition governments. We find some evidence for the political patronage hypothesis for minor coalition government changes. The results are sensitive to the inclusion of time-fixed effects and the variable capturing the reform period which indicates particular political dynamics.

²⁴Braendle and Stutzer (2010) analyze the selection effects of institutional restrictions and privileges that are applied only to public servants elected to parliament. Examples are the varying degrees in the strictness of incompatibility rules or privileges, such as special pension benefits, automatic promotion and the abeyance compensation for being put on leave.

²⁵The result for the instruments for the fraction of public servants in parliament in the first stage estimation (standard errors in parentheses) is: $-10.29 \times \text{strict incompatibility}$ (4.38) $-10.75 \times \text{soft incompatibility}$ (4.40) $+ 12.14 \times \text{strict incompatibility} \times \text{fulltime parliament}$ (3.01) $+ 9.44 \times \text{pension benefit}$ (1.80) $+ 8.45 \times \text{abeyance compensation}$ (2.80) $+ 15.14 \times \text{automatic promotion}$ (3.60) $-13.35 \times \text{other privileges}$ (2.03).

4 Concluding remarks

The importance of high-ranking ministerial bureaucrats in the political process is undisputed in political science, administrative science, and in political economics since the contribution of Niskanen (1971). However, scientific work which addresses the growth of this politically sensitive and high-profile occupational group within the public service is rare. We take advantage of a unique data set on the growth of high-ranking official employment in the ministerial bureaucracy of the German Laender and examine it from a political economics perspective.

First, we analyze whether political partisanship has an impact on the growth in senior official employment. We find no such effect. This corresponds with previous mixed evidence on broader measures of public sector growth. Second, we investigate whether political patronage after major and minor changes in the composition of (coalition) governments takes place. We find evidence for such effects for minor changes in coalition government only. Moreover, we argue that the selection of public servants into politics is of particular interest for understanding how political selection affects public sector growth. Examining the effect that changes in the representation of public servants in parliament have on the growth of senior official employment provides evidence consistent with our special interest hypothesis, which assumes a positive relationship. A further explorative analysis, however, indicates that this result does not hold for the long-run relationship between the representation of public servants in parliament and growth in senior official employment.

The empirical results, however, have to be interpreted with caution as we encounter severe data restrictions in terms of the number of observations, the (short) time-series and (small) cross-sectional structure as well as a period of extreme observations.

Based on our results, we think that it is worthwhile to study explicitly the growth in senior official employment in the ministerial bureaucracy. In a next step, the current theoretical considerations could be analyzed for alternative outcome variables relevant to the high-ranking ministerial bureaucrats such as senior official pay and senior official job regulation. Related to the ideas by Alesina and Tabellini (2007, 2008), another highly interesting follow-up question is whether the growth in the ministerial bureaucracy is accompanied by a shift in the division of bureaucratic and political decision-making power from politicians to high-ranking bureaucrats.

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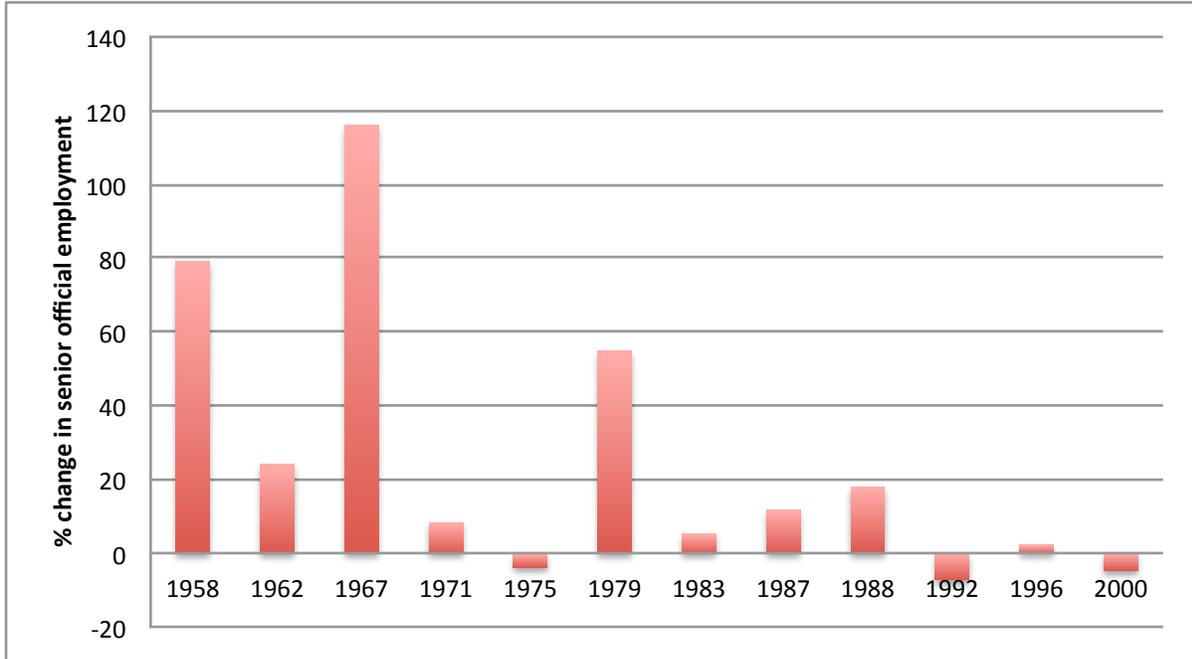
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Figures and Tables

Figure 1: Growth Rate of Senior Official Employment in the Ministerial Bureaucracy of Schleswig-Holstein per Legislative Period



Note: The percentage change in senior official employment is adjusted for the length of the legislative period.

Sources: See Table A.1.

Table 1: Determinants of Growth in Senior Official Employment in the Ministerial Bureaucracy of the German Laender
 Dependent variable: Percentage change in senior official employment

	I	II	III	IV
Lagged percentage change in senior official employment			-0.087 (0.09)	-0.452*** (0.08)
Government led by the SPD	-7.340 (8.37)	-1.719 (5.65)	-4.787 (11.28)	3.868 (8.38)
Major change in the composition of government	-13.760 (13.16)	1.173 (9.11)	-16.817 (16.65)	0.873 (12.59)
Minor change in the composition of government	18.886 (12.08)	11.579 (8.49)	20.646 (13.18)	23.539** (9.66)
Percentage-point change in fraction of public servants in parliament	1.651** (0.80)	0.554 (0.41)	1.888* (1.03)	1.318 (0.83)
Laender-fixed effects	Yes	Yes	Yes	Yes
Decade-fixed effects		Yes		Yes
Observations	114	114	106	106
Number of n	10	10	10	10

Notes: The dependent variable is adjusted for the length of the legislative period. Specifications I and II: Panel-corrected standard errors taking into account panel heteroscedasticity and correlation across panels. Dynamics are captured by incorporating serially correlated errors. Specifications III and IV: Dynamic bias-corrected panel estimator. Standard errors in parentheses. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

The full sample contains 116 legislative periods (in 10 Laender). Including a lagged dependent variable leads to estimations III-IV based on 106 observations. Instead of 116 observations, we can only use 114 observations for specifications I-II. This is due to two early periods, for which we have no information on the percentage-point change in the fraction of public servants in parliament.

Sources: see Table A.1.

Table 2: Determinants of Growth in Senior Official Employment in the Ministerial Bureaucracy
 Analysis for the reform period
 Dependent variable: Percentage change in senior official employment

	I	II	III
Lagged percentage change in senior official employment	-0.087 (0.09)	-0.265*** (0.08)	-0.251*** (0.08)
Government led by the SPD	-4.787 (11.28)	-5.951 (10.51)	-7.368 (11.40)
Major change in the composition of government	-16.817 (16.65)	-14.662 (15.40)	-11.800 (17.31)
Minor change in the composition of government	20.646 (13.18)	15.636 (12.33)	24.079** (12.20)
Percentage-point change in fraction of public servants in parliament	1.888* (1.03)	1.389 (1.02)	2.097* (1.18)
Reform period dummy 1966-73		56.595*** (13.03)	75.338*** (23.68)
Government led by the SPD x reform period			17.004 (32.75)
Major change in the composition of government x reform period			-26.948 (72.06)
Minor change in the composition government x reform period			-32.482 (23.79)
Percentage-point change in fraction of public servants in parliament x reform period			-3.277 (2.96)
Laender-fixed effects	Yes	Yes	Yes
Observations	106	106	106
Number of n	10	10	10

Notes: The dependent variable is adjusted for the length of the legislative period. All specifications: Dynamic bias-corrected panel estimator. Standard errors in parentheses. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

Table 3: Determinants of Growth in Senior Official Employment in the Ministerial Bureaucracy
Robustness analysis for demand-side factors
Dependent variable: Percentage change in senior official employment

	I	II	III	IV
Lagged percentage change in senior official employment	-0.087 (0.09)	-0.016 (0.09)	-0.120 (0.09)	-0.90 (0.08)
Government led by the SPD	-4.787 (11.28)	-9.178 (11.11)	7.728 (7.64)	0.912 (12.17)
Major change in the composition of government	-16.817 (16.65)	-19.252 (15.82)	-3.972 (12.88)	-9.332 (17.47)
Minor change in the composition of government	20.646 (13.18)	18.203 (12.09)	20.333*** (7.71)	26.104** (11.84)
Percentage-point change in fraction of public servants in parliament	1.888* (1.03)	1.936** (0.94)	1.589*** (0.61)	2.105** (0.83)
Percentage change in population		4.245* (2.47)		
Percentage change in per capita income			1.393* (0.73)	
Percentage-point change in the unemployment rate				-0.719 (2.08)
Laender-fixed effects	Yes	Yes	Yes	Yes
Observations	106	100	85	98
Number of n	10	10	10	10

Notes: The dependent variable is adjusted for the length of the legislative period. All specifications: Dynamic bias-corrected panel estimator. The smaller sample size is due to the availability of data. The variables for population, per capita income and unemployment are adjusted for legislative periods. Standard errors in parentheses. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

In specifications II-IV, we lose observations due to the availability of information on the added control variables in early legislative periods.

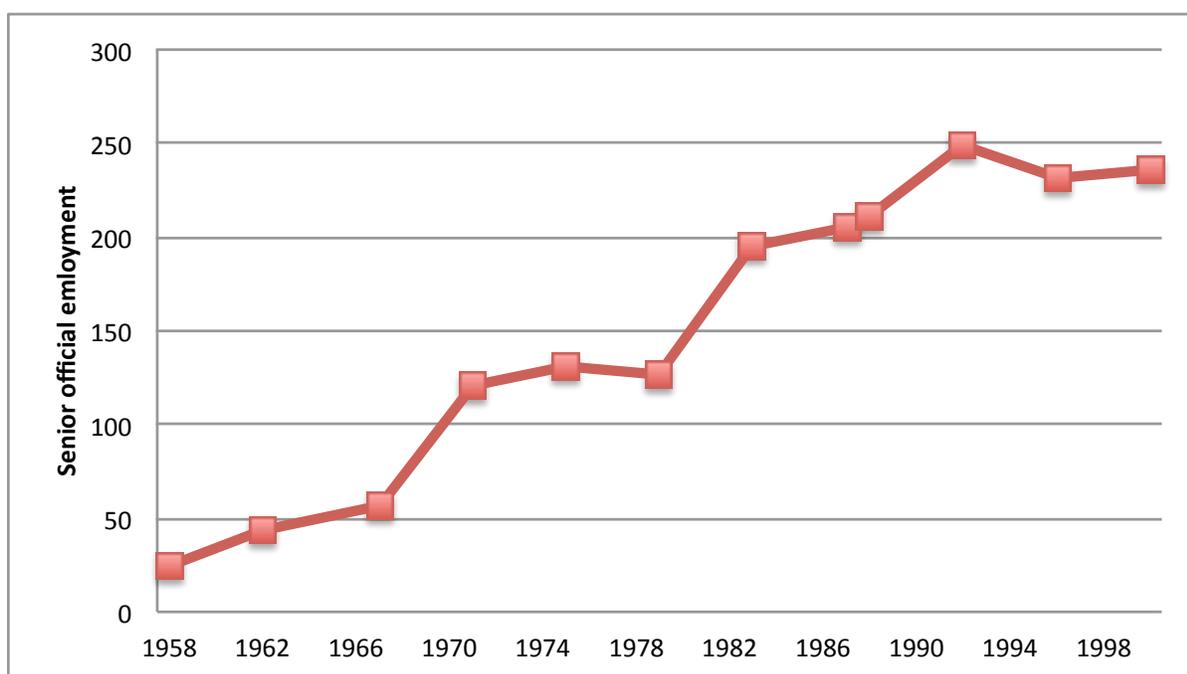
Table 4: Determinants of Growth in Senior Official Employment in the Ministerial Bureaucracy
Robustness analysis for political selection
Dependent variable: Percentage change in senior official employment

	I	II	III	IV	V
Lagged percentage change in senior official employment			-0.186** (0.08)	-0.436*** (0.08)	
Government led by the SPD	3.179 (7.76)	2.294 (5.90)	7.304 (10.11)	7.383 (8.39)	4.247 (11.65)
Major change in the composition of government	-7.557 (11.03)	1.495 (8.86)	-6.027 (14.54)	1.846 (12.33)	-5.842 (15.56)
Minor change in the composition of government	14.503 (10.84)	10.788 (8.49)	18.138 (11.64)	21.407** (9.38)	16.925 (10.61)
Percentage-point change in fraction of public servants in parliament	2.590*** (0.64)	1.071*** (0.41)	3.135*** (0.96)	1.766** (0.87)	1.985** (0.77)
Fraction of public servants in parliament	-2.186*** (0.37)	-1.030*** (0.25)	-3.222*** (0.65)	-1.200* (0.72)	-2.888*** (0.76)
Laender-fixed effects	Yes	Yes	Yes	Yes	Yes
Decade-fixed effects		Yes		Yes	Yes
Observations	114	114	106	106	114
Number of n	10	10	10	10	10

Notes: The dependent variable is adjusted for the length of the legislative period. Specifications I and II: Panel-corrected errors taking into account panel heteroscedasticity and correlation across panels. Dynamics are captured by incorporating serially correlated errors. Specifications III and IV: Dynamic bias-corrected panel estimator. Panel V: Instrumental variable estimation. Results are from the second stage of the two-stage least squares estimator. Instruments for the fraction of public servants in parliament are taken from Braendle and Stutzer (2010). Standard errors in parentheses. Significance levels: * $.05 < p < .1$, ** $.01 < p < .05$, *** $p < .01$.

The full sample contains 116 legislative periods (in 10 Laender). Including a lagged dependent variable leads to estimations III-IV based on 106 observations. Instead of 116 observations, we can only use 114 observations for specifications I-II. This is due to two early periods for which we have no information on the percentage-point change in the fraction of public servants in parliament.

Figure A.1: Development of Aggregate Senior Official Employment in the Ministerial Bureaucracy of Schleswig-Holstein.



Notes: The aggregate development of senior official employment is adjusted to entire legislative periods. In 2000, 4,807 senior officials are counted in the ministerial bureaucracies of the ten German Laender. The respective number in 1960 is 524.

Sources: See Table A.1.

Table A.1: Descriptive Statistics for the Dependent and Independent Variables

<i>Dependent variable</i>	Number of LPs	Mean	Std. dev.	Min.	Max.
Percentage change in the senior official employment	116	28.419	49.672	-16.227	251.111
<i>Independent variables</i>					
Government led by the SPD	116	0.431	0.497	0	1
Major change in the composition of government	116	0.103	0.306	0	1
Minor change in the composition of government	116	0.267	0.444	0	1
Percentage-point change in the fraction of public servants in parliament	114	1.19	6.07	-15.19	21
<i>Independent variables for additional robustness checks</i>					
Government led by SPD (including grand coalitions)	116	0.466	0.501	0	1
Reform period (1966-1973)	116	0.164	0.372	0	1
Percentage change in population	104	1.296	2.604	-3.026	10.862
Percentage change in per capita income	85	7.443	5.806	-5.79	18.45
Percentage-point change in the unemployment rate	101	0.901	2.293	-4.90	8.20
Fraction of public servants in parliament	116	43.094	9.977	14.09	61.60

Note: The dependent variable is adjusted for the length of the legislative period.

Sources: The dependent variable is taken from Manow and Wettengel (2006) and adjusted for legislative periods.

For the independent variables, see Braendle and Stutzer (2010) for the representation of public servants in parliament, Manow and Wettengel (2006) for the political partisanship of government, and the major and minor changes in the composition of (coalition) governments. These variables are complemented with information provided by the German electoral commission (*Bundeswahlleiter*). The percentage change in population, in per capita income as well as the change in the unemployment rate are taken from the German statistical office (*Statistisches Bundesamt*). These latter variables are adjusted for entire legislative periods.