Parental unemployment, social insurance and child well-being across countries☆

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ABSTRACT

Based on a unique repeated cross-sectional data set of school-aged children in Europe, the Middle East and North America, we analyze how children's subjective well-being is related to parents' employment status, depending on the institutional context. We find that parental unemployment is strongly negatively related to children's life satisfaction across countries and years. The effect is thereby moderated by the generosity of unemployment benefits. Exploiting across- and within-country variation, our results suggest that a higher benefit replacement rate, on average, alleviates the negative effects of fathers', but not mothers', unemployment. We further test the robustness of our results considering unemployment benefits jointly with social work norms. While the buffering effect of unemployment insurance remains, the spillover effects of paternal unemployment seem to be more pronounced in environments with stricter social work norms.

1. Introduction

How can children and adolescents, some of the most vulnerable members of our society, be protected from economic shocks that hit them via their parents' unemployment? While any contemporaneous effect of paternal or maternal unemployment on children's well-being is highly relevant per se, recent evidence indicates that there might be long-term consequences. Layard et al. (2014), for example, emphasize children's emotional health as "the most powerful childhood predictor of adult life-satisfaction" (p. 720). Related work emphasizes the importance of early years experiences in building up capabilities which foster well-being across the life-cycle (e.g., Knudsen et al., 2006; Heckman et al., 2006). Given the evidence of child well-being as a predictor of economic outcomes and well-being in adult life, it is important to understand potential spillover effects of macroeconomic conditions on children and how these potentially can be alleviated.

We study external effects of parental unemployment on their children's subjective well-being as direct proxies of their individual welfare in a cross-country setting to identify potential moderating effects of policies and contextual factors.[2] With this approach, we complement the line of research that studies interventions and policies which are immediately directed at child well-being (e.g., Heckman et al., 2010, Heckman et al., 2013). Specifically, we aim to analyze to what extent the generosity of unemployment benefits moderates potential negative effects of parent's unemployment. We are not aware of any existing systematic evidence on this potential capacity of a central institution of social security. The potential interaction is relevant for a better understanding of the institutional determinants of child well-being as well as for a more comprehensive evaluation of the costs and benefits of an unemployment insurance. Concretely, the generosity of unemployment benefits might alleviate the burden of parental unemployment directly through a smaller reduction in consumption opportunities for the household (and consequently also for the children); but also indirectly through less financially distressed parents.

However, other mechanisms might also be at work. Personal unemployment also causes psycho-social stress. Being unemployed is often linked to a loss of meaningful activities, valuable social contacts, and opportunities to experience self-determination. Sometimes unemployment is even perceived as a personal failure. This holds in particular in an environment with strong social work norms (see, e.g., Stutzer and Lalive, 2004). It is an open issue how unemployment benefits moderate the possible spillovers of these stress factors on child well-being. In sum, it is not only formal institutions but also informal ones that determine the effect of parental unemployment on child well-being. Thereby, social work norms are closely linked to gender norms and consequences on child well-being might be different depending on whether the mother or the father is unemployed. In particular, paternal unemployment might affect a child more than maternal unemployment in an environment with a traditional male breadwinner norm.

The consideration of social work norms is important not only in substantive terms but also from an econometric perspective. By taking into account both formal and informal institutional factors jointly in the empirical model, we complement existing literature by acknowledging a potential correlation between the generosity of unemployment benefits and social work norms that might drive any observed correlations.

For our analysis, we rely on a unique repeated cross-sectional data set of school-aged children in Europe, the Middle East, the US and Canada, 33 countries in total, for the years 2001/02, 2004/05, 2009/10 and 2013/14 and combine it with data on labor market institutions and social norms. For the estimation of the interaction effect between parental unemployment and the generosity of unemployment benefits, we draw on variation in the benefit level between and within a country over time while controlling for country- and year-specific levels of well-being.

In order to identify a possible "buffering effect" of unemployment benefits on child well-being based on such an estimation approach, a series of assumptions is necessary:

  i) The differential well-being of children with unemployed parents is due to parents' employment status and not some other correlated characteristic of either the child or the parents. As we cannot rely on panel data for the same child with parents changing their employment status, the difference is identified *between* children, conditional on a set of observable characteristics. Most important but also challenging is the control for parents' socio-economic status. Low family wealth or current income might simultaneously be a source for lower child well-being and a factor correlated with parents' risk of unemployment, thus suggesting their inclusion as control variables. However, current income is also reduced when people are unemployed, thus capturing an important mechanism through which children might experience the negative consequences of parental unemployment. In this latter case, its inclusion would bias the estimated effect of parental unemployment towards zero reflecting a specification with so-called bad controls. We chose to pursue and discuss the results for both approaches, i.e., without and with the consideration of the proxy for a families' current income situation.

  ii) Children correctly answer the question about their parents' employment status. If this assumption is violated and children, for example, mistakenly report their unemployed father or mother as having a job, then the reference group is contaminated and any negative difference for children with unemployed parents is underestimated. We take children who report their parents being employed as a reference group and consider separate categories for children who report other statuses. With this approach, we aim to limit the degree of potential underestimation of the well-being difference.

  iii) Country-specific determinants of child well-being that are not explicitly considered in the empirical analyses are fix in the medium-term and do not systematically differ between children with employed and unemployed parents. Empirically, they can then be controlled for with country fixed effects. We prefer this approach to one that considers specific aggregate control variables due to its flexibility.

  iv) Variation in unemployment benefits is not capturing or correlated with formal and informal institutions that are not explicitly considered as covariates, but ultimately determine the effects of parental unemployment on child well-being. In our approach, we choose to consider proxy measures for social work norms to prevent an omitted variable bias.

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[2] There is an enormous body of literature that is concerned with understanding people's well-being in terms of their reported life satisfaction as well as positive and negative affects. In economics, there are a series of monographs including, for example, Frey and Stutzer (2002a); Frey (2008); Layard (2011) and Graham (2017), as well as review articles including, for example, Frey and Stutzer (2002b), Stutzer and Frey (2010), Clark (2018), and Stutzer (2022) with a focus on public policy. For contributions from a psychological perspective, see, for example, the collections in David et al. (2013), Sheldon and Lucas (2014), or the handbook by Diener et al. (2018). Different measures to capture child well-being are reviewed in Ben-Arieh et al. (2014).

If we also want to identify the negative externality of parental unemployment on child well-being, we furthermore have to assume that child well-being does not affect parents' employment status. However, this latter assumption is likely to be violated. For example, a negative health shock to a child might well prevent his or her parents to perform well on their jobs, increasing the risk of a job loss. Thus, if parents with children that experience low well-being sort into unemployment, the negative externality is overestimated. The quantitative consequences of such a sorting for the overall correlation are difficult to assess though (and work against the potential underestimation of the correlation discussed above under ii). We are thus cautious when interpreting the measured differences in children's subjective well-being.

In our empirical analysis, we first document that parental unemployment is negatively related to child well-being and that there are sizeable between-country differences in this association. Second, we provide evidence that generous unemployment benefits, on average, alleviate the burden of father's unemployment. However, we find no such effect for mother's unemployment. Third, we consider social work norms as informal institutional factors that might drive any observed correlation with unemployment benefits due to a potential endogeneity between the two factors. We indeed observe that social norms and paternal unemployment seem to interact. The evidence suggests that the negative effects for children are more pronounced in environments with stricter injunctive work norms. Importantly, the moderating effect of unemployment benefits for paternal unemployment is robust to including any proxy for descriptive and injunctive work norms.

Our analysis extends a rich literature on the consequences of unemployment on people's well-being. As this existing work serves as an important foundation for our theoretical arguments and empirical approach, we refer to it in more detail in Section 2. Section 3 describes the dataset "Health Behavior in School-aged Children" and the appended macro-level data that we use in our analysis. In Section 4, we lay out our estimation strategy. In Section 5, we present the correlation between parental unemployment and child well-being. Section 6 shows the results of our analysis concerning a moderating effect of unemployment insurance and social norms. Section 7 concludes.

2. Unemployment and individuals' subjective well-being

In the following, we document that unemployment has various effects that relate to people's well-being in the short and in the long run. While the accumulation of some findings have turned them to stylized facts, there is other evidence which looks rather inconclusive. We conjecture that some of the effect heterogeneity might be understood if contextual factors are more systematically taken into account. Our partial review starts with the effects of personally experiencing unemployment, before proceeding to the spillover effects on relatives and children in particular. We then refer to the moderating factors of the well-being costs of unemployment in terms of particular policies as well as informal institutions, i.e. social work norms.

2.1. Effects on unemployed persons

The personal experience of unemployment is one of the most detrimental events for an individual's subjective well-being. Research in economics and other social sciences has provided substantial evidence that there is a causal negative relationship between unemployment and life satisfaction. The loss in income thereby cannot fully account for the disutility of unemployment, meaning that the negative effects of unemployment are still found in statistical estimates when income is considered as a control variable. The non-pecuniary costs rather seem to outweigh the pecuniary costs (e.g., Kassenboehmer and Haisken-DeNew, 2009). The empirical evidence indicates that employment - apart from income - provides individuals with several latent benefits, such as time structure, social contacts, activity, purpose, and, importantly, status and identity (aspects that were first prominently emphasized in Jahoda, 1981). The social costs of unemployment thus substantially exceed the costs of an economy operating below its potential, both through the non-pecuniary costs of unemployment for the individual, and, as we emphasize here, also through negative externalities for spouses and children.[3]

2.2. Effects on spouses and children

Similar as the affected individual, relatives have to cope with reduced household income but presumably also with a partner or parent who is suffering psychologically. Several studies provide corresponding evidence for a decrease in subjective well-being following the partner's job loss, which, in line with traditional gender roles, was found to be particularly pronounced for women (e.g., Winkelmann and Winkelmann, 1995; Esche, 2020). Previous studies on intergenerational spillover effects have primarily focused on the effects of parental labor force status on children's educational and labor market outcomes, finding rather mixed evidence. Müller et al. (2017), for example, find, using data from Germany, that paternal unemployment has no effect on children's youth employment status, though daughters, on average, tend to invest more in their education upon father's unemployment. Fradkin et al. (2019) find that children of unemployed parents in Belgium increase their labor supply and work by around 9% more in the first three years following labor market entry compared to children whose parents lose their job after the child's labor market entry. Liu and Zhao (2014) and Pieters and Rawlings (2020) studied the effects of parental job loss driven by economic reforms in China in the mid 1990s and find

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[3] Moreover, higher unemployment also affects the employed as it increases the negative anticipatory feelings related to economic insecurity (Luechinger et al., 2010.)

substantial negative effects of paternal unemployment on children's health. Maternal unemployment, on the other hand, has no or even beneficial effects on children's health, probably due to increased time and care by the unemployed mothers. Schaller and Zerpa (2019) find similar negative effects of paternal job loss on children's physical and mental health for the U.S. This holds particularly in families with lower socio-economic status, while no such effect is found for maternal job loss. In a first study in the Swedish context, Mörk et al. (2014) reversely find that maternal unemployment has relatively larger negative effects on child health than fathers' unemployment. In later work and for more recent years, the same authors (Mörk et al., 2020), however, find that over a ten-year period childhood health, GPA or early adult employment are not negatively affected by the experience of parental job loss in childhood.

Specific evidence on the effects of a parent's job loss for children's reported subjective well-being is scarce. As for spouses, the well-being of children may be affected by the pecuniary consequences of parental unemployment, i.e., through a reduction in consumption opportunities due to a lower disposable household income; but also through non-pecuniary mechanisms. First, children might be negatively affected by their unemployed parent's reduced psychological well-being. Powdthavee and Vignoles (2008), for example, provide evidence that there is a significant correlation between parents' mental distress (particularly the one of fathers) and the subjective well-being of children. Second, children themselves might be exposed to stigmatization in their environment either directly due to parents' labor market status or due to reduced consumption opportunities that lead to feelings of envy and possibly to fewer social interactions (e.g., Schneider et al., 2000). Unemployed parents, on the other hand, spend significantly more time with their offspring (Knabe et al., 2010). As childcare positively relates to the formation of human capital for children (Becker and Tomes, 1986), increasing parenting time due to unemployment might as well be beneficial for the children, particularly for younger ones. Powdthavee and Vernoit (2013) find, at least partly in line with that, that parental unemployment in the UK is, on average, not statistically significantly related to child well-being unless age differences are considered, as the effect is positive at young age and gets more negative the older the children are when they experience a parent's job loss. Furthermore, they find that the overall effect is particularly negative for girls, whereas the effect of maternal unemployment is worse for boys. Using data from the German Socio-Economic Panel (SOEP), Haisken-DeNew and Kind (2012) find no effect of parental unemployment on daughter's subjective well-being. A negative effect on son's well-being was only found if the father, but not the mother, became involuntary unemployed. Investigating mental health outcomes, Bubonya et al. (2017) look at spillover effects of unemployment for spouses and children in the Australian household survey (HILDA). They, reversely, find no direct support for the hypothesis that a father's job loss affects mental health of the children negatively, though they find such an effect for maternal unemployment. Moreover, they do find that the effects are stronger for girls than boys. Nikolova and Nikolaev (2021) additionally provide evidence that negative well-being effects of parental unemployment are long lasting: Considering only exogenous unemployment shocks and controlling for an array of individual, parental and family characteristics, they report a strong negative effect of maternal unemployment between the age of 0 and 5 and of paternal unemployment between the age of 10 and 15 on the life satisfaction of the offspring when they are between 18 and 31 years old.

Taken together, existing evidence generally suggests a rather negative effect of parental unemployment on child well-being though the results are not congruent across countries - an aspect we take up in our cross-country study.

2.3. Policies moderating the well-being costs of unemployment

The negative well-being effects of personal unemployment have also been found to differ widely across countries (see, e.g., Gallie and Russell, 1998; Ahn et al., 2004; Caroll, 2007). Several studies have consequently investigated potentially moderating factors of the well-being costs of unemployment. As economic strain is an important determinant of psychological distress, most studies have focused on passive labor market programs in terms of unemployment benefits which compensate at least part of the loss in income that is associated with unemployment. Though the evidence is not completely unambiguous, the majority of recent studies suggests a substantial moderating effect of the generosity of unemployment benefits on the life satisfaction of the unemployed (e.g., Ochsen and Welsch, 2012; Wulfgramm, 2014; O'Campo et al., 2015; Voßemer et al., 2018) mainly through increased financial satisfaction (e.g., Ahn et al., 2004).[4] Active labor market programs, such as training or job creation measures, which may re-provide unemployed individuals at least with a part of the latent benefits that are associated with the non-pecuniary costs of unemployment, were, however, not shown to be alleviating the negative effects of job loss but, if anything, rather to aggravate them (e.g., Voßemer et al., 2018).[5]

Little is known on whether moderating effects translate to how children are affected from their parents' unemployment. Of the few studies, Regmi (2019) exploits variation in unemployment insurance benefits over US states and time and finds that an increase of 1% reduces the likelihood that a child has to repeat a grade by around 1.1%. Lindemann and Gangl (2019) similarly find that contexts which provide more generous unemployment insurance alleviate the adverse effects of parental unemployment on entry to post-secondary education. Schaller and Zerpa (2019) further emphasize

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[4] Di Tella et al. (2003) find that the generosity of publicly provided unemployment insurance positively correlates with subjective well-being, but find no significant interaction with personal employment status. Eichhorn (2014) finds no robust relationship between log expenditures of unemployment benefits payments per capita and life satisfaction for the whole population and also no significant moderating effect for the unemployed.

[5] We refrain from testing the moderating effect of active labor market policies for spillover effects on children's well-being not only because previous evidence suggests no such moderating effects on the personal level, but mainly because of the difficulty that children whose parents are taking part in active labor market programs might no longer report their parents as unemployed.

the importance of public health insurance programs in the US as a safety net for children following parental job loss. Mörk et al. (2020), studying health, educational and job-related spillover effects of parental job loss in Sweden, also emphasize the importance of their study setting in a Nordic country, with generous welfare institutions and strong dual-earner norms which are potentially "able to cushion and insure against negative shocks to the family environment" (p.6). Hence, next to potentially buffering policies, the authors hint at informal institutions which might similarly work as moderating factors, which we will discuss in the following subsection.

2.4. The moderating role of social work norms

On the side of informal institutions, social work norms have been proposed as another moderator of the well-being costs of unemployment (and relatedly also people's job search behavior).

Several studies find that the well-being costs of unemployment are less severe in areas with higher unemployment (e.g., Clark, 2003 for the UK, Powdthavee, 2007 for South Africa and Shields et al., 2009 for Australia), arguing that a higher unemployment rate might reduce the normative pressure to work, as more people deviate from the norm to make one's own living. Schwarz (2012) and Chadi (2014), however, find no such relationship using data from Germany and some cross-country studies were not able to replicate the earlier findings either (e.g., Stavrova et al., 2011). While a higher unemployment rate might reduce the normative pressure to work, as more people deviate from the norm to make one's own living and thus leading to the norm to deteriorate, it cannot be distinguished from the potentially countervailing effect of worse labor market prospects, which might explain why the evidence on the moderating potential of descriptive norms is not unambiguous.[6] Further research accordingly deployed measures of injunctive norms, which, compared to descriptive norms, do not describe group behavior, but rather shared beliefs of how one ought behave (Cialdini et al., 1990).[7]

Stavrova et al. (2011), for example, take country-averages on statements from the World Value Survey (WVS) as a proxy measure of the societal injunctive norm to work and report greater life satisfaction gaps between the employed and the unemployed where such norms are stronger. Stutzer and Lalive (2004) use outcomes from a popular vote on the support of generous unemployment benefits as a proxy measure for the regional strength of work norms and provide evidence that individuals in municipalities with stronger work norms (and less support of generous benefits) do not only experience larger drops in life satisfaction upon unemployment, but that the social pressure also prompts them to find a job again more quickly. With their empirical approach to measuring social work norms, Stutzer and Lalive (2004) stress the endogeneity of social norms and unemployment benefits as an electorate will rather support political parties favoring more generous unemployment benefits in areas with less strict social norms to work.[8]

Work norms might, moreover, act gender-specific. According to the gender identity hypothesis by Akerlof and Kranton (2000), people derive identity utility from conforming to social norms which are related to one's gender. Previous research finds significantly stronger negative well-being effects of unemployment for men than for women (see, e.g., Frey and Stutzer, 2002b) and attributes this to the fact that men suffer more from an identity loss than women, as the social norm prescribes men to be the breadwinner. Roex and Rözer (2018), accordingly, find that the moderating effect of social work norms is stronger for men than for women.

3. Data

Our empirical analysis is based on four waves spanning the period 2002 to 2014 of the Health Behavior in School-aged Children (HBSC) survey. To consider contextual differences which might reinforce or buffer the effects of parental unemployment on child well-being, we combine the HBSC data with data on labor market institutions, economic conditions and social norms. Details on the main data set and these measures are provided in Sections 3.1–3.3. Section 3.4 shows the correlations between the country-level explanatory variables. Table A2 in the Appendix further provides an overview of the data availability by country and HBSC wave.

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[6] In our setting, this difficulty might be aggravated as it does not only signal labor market prospects for the parents, but also future labor market prospects for the adolescents themselves.

[7] Researchers studying field data on behavioral outcomes then often merge it with aggregate survey data on social work norms. Given the fact that measuring social norms is an inherently difficult task, we also like to refer to the considerable amount of work on how social norms can be measured using experimental approaches. For a review on these methods, see, for example, Görges and Nosenzo (2020).

[8] Considering the co-evolution of policies and norms even further, higher unemployment benefits might weaken work norms in the long-term (e.g., Lindbeck, 1995). In a welfare state setting, social work norms constrain the influence of economic disincentives of unemployment insurance by preventing individuals to apply for benefits to avoid disutility from norm violation by stigmatization and a loss of reputation. With sufficiently generous unemployment benefits relative to after-tax wages, the conflict between social norms and economic incentives may gradually lead more individuals to stop obeying with the norms, thus increasing the number of beneficiaries. Assuming that the disutility from norm deviation is decreasing with the number of people not complying with the norms, work norms might be endogenous to the generosity of unemployment benefits themselves (e.g., Lindbeck, 1995; Ljunge, 2012). This co-evolution might be particularly relevant in intergenerational contexts as generous social insurance might weaken parents' incentives to instill stronger work ethics in their children (e.g., Bisin and Verdier, 2011; Lindbeck and Nyberg, 2006). Though the generosity of unemployment benefits should mostly affect the pecuniary costs of unemployment, Wulfgramm (2014), for example, finds a statistically significant moderating effect of unemployment benefits on the well-being of the unemployed, also after income is controlled for. In line with a potential endogeneity between unemployment benefits and social norms, she concludes that the effect of the generosity of unemployment benefits is thus not strictly pecuniary, but may reflect less stigmatization and loss of self-confidence for the unemployed in countries where benefits are more generous.

3.1. Parental unemployment and child well-being in the HBSC

The HBSC study is a collaborative cross-national study organized by the World Health Organization (WHO). The survey, which is conducted every fourth year since 1986[9], aims to assess health and health behaviors in adolescence by administering harmonized self-completion questionnaires in schools to adolescents between the age of 11 and 17 years from 43 countries in Europe, the Middle East and North America. At school, adolescents are asked to self-complete an internationally harmonized, paper-based, anonymous questionnaire on their health, health behavior, private situation and well-being. The HBSC adopts an elaborate scheme for the sampling of schools and their weighting in the dataset. However, there is no comparable information publicly available on response rates across countries and survey waves.[10]

The HBSC data offers the opportunity to study child well-being in a repeated cross-sectional setting. Since the 2001/2 wave, respondents from all participating countries are asked to rate their life satisfaction on the 11-point scale of the Cantril Self-Anchoring Striving Scale (Cantril, 1965), often referred to as the "Cantril ladder". Children are asked: *"Here is a picture of a ladder. Suppose the top of the ladder represents the best possible life for you and the bottom of the ladder the worst possible life. Where on the ladder do you feel you stand at the present time?"*. As an evaluative measure of subjective well-being, the Cantril ladder has been used for both adults and children and was shown to have good convergent validity and reliability for samples of adolescents (Bradshaw et al., 2013, Levin and Currie, 2014).[11]

Next to life satisfaction, the HBSC data provides information on child characteristics (e.g., age, gender), health behavior, social environment and family situation. Among that, children are asked about both their mother's and father's occupations, which allows us to construct a measure of parental unemployment.[12] The information on fathers', respectively mothers', occupations are classified into six socio-economic status (SES) groups, and six further categories, i.e., "home working", "looking for a job", "sick, retired, student", "don't know", "don't have or see parent" or "not classifiable". For our measure of unemployment, we consider all job categories (SES 1-6) as "occupied". The category "Looking for a job" is considered involuntarily unemployed and is our category of interest.

The collection of parental employment status data via their children is unlikely to be without error. Yet, the unemployment rate indicated by children per country and year strongly correlates ($r = 0.81$, $p = 0.000$) with the official unemployment rate of the OECD. In the level, the unemployment rate is mostly smaller in our sample than in the official statistics (see Figure A2 in the Appendix). This observation could, on the one hand, be due to factually higher employment rates of adults with dependent children in comparison to national averages. On the other hand, error can result from the data collection from the children. First, children might not know their parents' labor market status. Second, children might under-report parental unemployment because of social stigma. If those children, who are ashamed to report their parents' unemployment, were to suffer strongly in terms of well-being from their parents' lot, this would mean that our results for any negative correlation of unemployment with child well-being are downward biased. If they even were to report that their parents are employed (rather than to say "don't know", "homeworking" or "sick, retired, student"), they would be considered in the "non-treated" (or reference) group, depressing this group's estimates towards the "treated" group, and bias the estimate even more. The only scenario that we could think of which would potentially upward bias our estimates is that the indication of home working parents removes those with relatively privileged financial situations from the group of unemployed.

To address the concern that stronger work norms and related social stigma increase the probability of misreporting, we examined the correlation between work norms and the gap (just mentioned) between the official unemployment rate and the one calculated based on children's reports of their parents' employment statuses. In this pooled estimation, we find no evidence for the thesis that children more often underreport their parents' unemployment in environments with stronger work norms ($n = 92$, $b = -0.03$, n.s.).

Compared to previous studies using national household surveys (e.g., Haisken-DeNew and Kind, 2012; Powdthavee and Vernoit, 2013; Bubonya et al., 2017), the HBSC allows measuring the effect of parental unemployment, irrespective of whether the child lives in the same household or not, as the questionnaire asks for both parents' employment statuses as well as the household type. Figure A1 in the Appendix graphically depicts the coding scheme of the parental employment status variable. Next to their parents' occupation, children are asked whether they live with both parents, their father or their mother. For those children whose parents live in separate households, we deploy the information on whether they are in contact with the parents. Thus, we consider any biological/legal parent that the child indicates to be in contact with and not only parents living together with the child. All observations, for which the parental occupation status is missing for a parent that the child is in contact with, are dropped. For those children, who live with either mother or father and indicate

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[9] Our study covers the years 2002 to 2014, i.e., waves 3 to 6, as these are the only waves which are currently accessible.

[10] Further information on the HBSC data can be found in Appendix A.1.1.

[11] Levin and Currie (2014) show that the test-retest reliability is slightly weaker for teenagers than for younger children. Yet, they ascribe the lower test-retest reliability to a reduced stability of life satisfaction of teenagers, i.e., mood swings in puberty, rather than to a reduced reliability of the scale with increasing age.

[12] The exact questions can be found in Appendix A.1.2. The question on parental employment status is not asked in Armenia, Ukraine, Russia and Malta. Therefore, these countries are excluded from our analyses. Furthermore, Canada, Germany, Italy, Latvia, Lithuania, Switzerland and Slovakia do not gather information on parental employment in certain waves and hence these waves are excluded. Last, we only consider countries where we have at least two waves of data, i.e., Albania and Moldova are also excluded. Further details on data availability can be found in Table A2 in the Appendix.

Table 1
Parental employment status.

	Maternal employment status		Paternal employment status	
	Observations	Share	Observations	Share
Working	416,926	76.91%	469,519	86.61%
Unemployed	23,116	4.26%	14,851	2.74%
Home working	69,122	12.75%	4246	0.78%
Sick, retired, student	13,581	2.51%	14,622	2.70%
Don't know	15,988	2.95%	11,886	2.19%
Not in contact with	3351	0.62%	26,960	4.97%
Total	542,084		542,084	

The table shows the distribution of maternal and paternal employment statuses for our main sample. The parental unemployment status is based on the question shown in Appendix A.1.2. "Working" contains all job categories (SES 1–6).

that they are not in contact with the other, we code this parent's employment status as "not in contact with". This allows us to estimate the relationship between maternal, respectively paternal, unemployment, conditional on the other parent's employment status, without dropping children who are raised by a single parent.

Table 1 displays the distribution of maternal and paternal employment statuses for our sample. From the two separate indicators for mother's and father's status, we then generate a variable of parental unemployment, coding 1 if at least one parent is looking for a job ($N = 30, 665$ (5.66%), of which $N = 4, 629$ (0.85%) have both parents unemployed) and 0 otherwise ($N = 506, 790$).

3.2. Unemployment benefits

The generosity of unemployment benefits in any given country and year is based on data on average replacement rates from the OECD. The OECD releases data on the country net replacement rates for the unemployed as a proportion of the previous in-work income which is maintained after $1, 2, \ldots, T$ months of unemployment. As our data is cross-sectional and does neither indicate the employment status before, nor the duration of parental unemployment, we cannot match specific replacement rates, which consider unemployment duration and eligibility, to the individual-level data set. We therefore calculate a more general measure of the generosity of unemployment benefits, taking the arithmetic mean of six different replacement rates, i.e., for two different unemployment durations (six and twelve months) and three family types (couple with two children and average earnings for the partner, couple with two children and partner out of work, and single parent with two dependent children). Due to the nature of our research question, we do not consider replacement rates for individuals without dependent children. Figure A3 in the Appendix displays the average replacement rate by country and survey year for the countries in our sample.

3.3. Social work norms

We employ measures of descriptive as well as injunctive norms regarding the importance of pursuing paid work. As a descriptive measure of the social norm to work, we use annual national unemployment rates from the OECD (see Figure A4 in the Appendix for details). As a gender-specific variant, we consider the share of women actively participating in the labor market. Specifically, we use data on the ratio of female-to-male labor force participation rates from the World Bank (see Figure A5 in the Appendix for details).

As a measure of the societal injunctive norm to work, we combine and average answers to five statements from the World, respectively European, Value Survey (WVS) separately for each country[13]: (1) *"To fully develop your talents, you need to have a job."*, (2) *"It is humiliating to receive money without working for it."*, (3) *"People who don't work become lazy."*, (4) *"Work is a duty towards society."* and (5) *"Work should always come first, even if it means less free time."*. The scale (Cronbach $\alpha = 0.71$) thus describes the extent to which work is a moral duty, respectively the strength of the norm to provide for oneself as opposed to live off others. For the resulting measure, higher values denote a stronger social norm to work. As a measure for gender-specific injunctive work norms, we use answers to a question in the WVS where respondents indicate their agreement with the statement *"When jobs are scarce, men should have more right to work than women"* on a 3-Point scale with answer options *"Disagree", "Neither nor"* and *"Agree"*. We recode answers such that country averages can be interpreted as the share of respondents in a country agreeing with the statement. As social norms tend to be rather stable and as the WVS is conducted in different years than the HBSC survey, we make no attempt to exploit within-country variation in the strength of norms over time. Instead, we calculate mean scores by country over all available waves of the WVS and thus consider the strength of norms as constant over time.[14]

[13] We thus follow the strategy pursued in van Oorschot (2006), Stavrova et al. (2011), or Stam et al. (2016).

[14] While we cannot test this explicitly, we argue that the assumption of stable norms within the short time-frame of our data (i.e., 2001 to 2014) is not far-fetched. Previous evidence suggests that norms and values evolve rather slowly over generations (e.g., Mannheim, 1964).
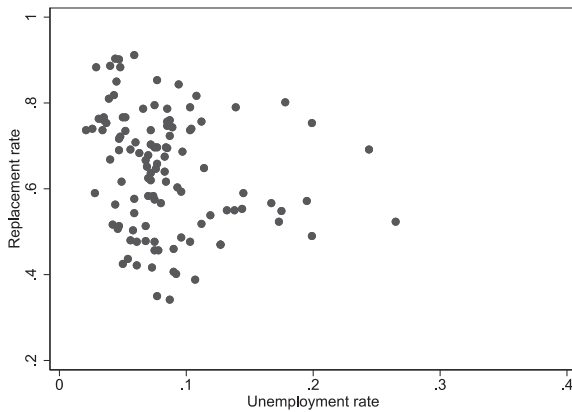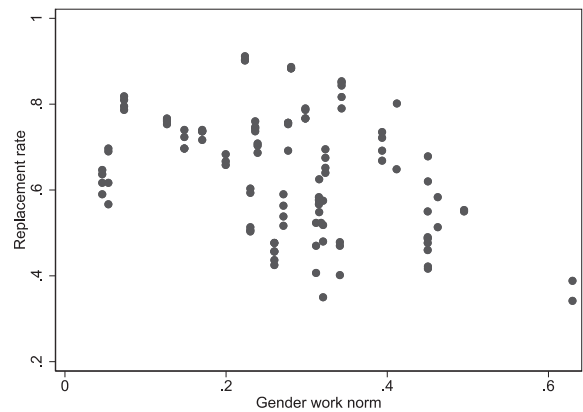
(a) Descriptive general work norm
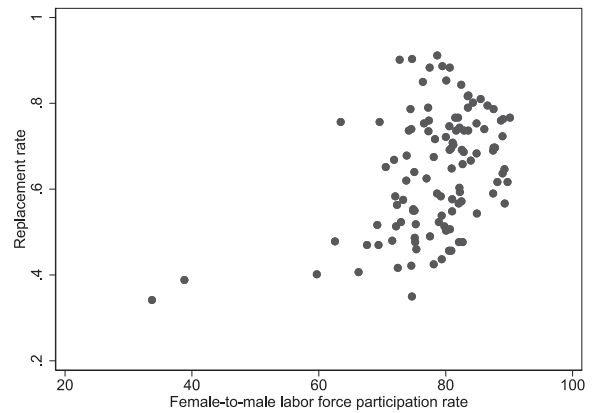
(b) Descriptive gender-specific work norm
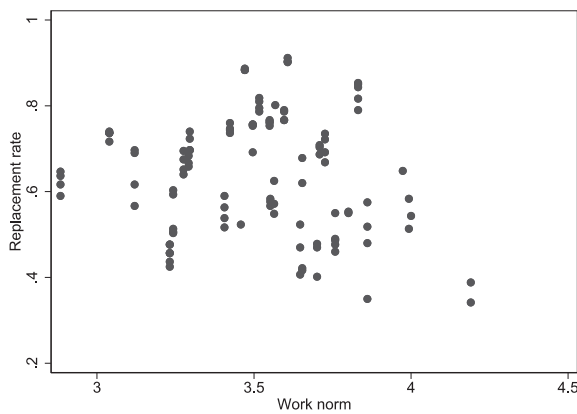
(c) Injunctive general work norm

(d) Injunctive gender-specific work norm

Fig. 1. Correlations between unemployment benefits and work norm measures. *Note:* The figures present the correlations between unemployment benefits and our measures of social work norms. Panel 1(a) shows the correlation between the unemployment rate and the generosity of unemployment benefits ($r = 0.22$, n.s.). Panel 1(b) displays the correlation between the ratio of female-to-male labor force participation rates ($r = 0.42$, $p < 0.01$ and $r = 0.34$, $p < 0.01$ when excluding the two observations with a very low female labor force participation) and unemployment benefits. Panel 1(c) and (d) show the correlations between general injunctive work norms ($r = -0.13$, n.s.) and injunctive gender-specific work norms ($r = -0.39$, $p < 0.01$) and average replacement rates.

In a robustness analysis, we consider that the strength of norms within the own generation might be particularly relevant for the spillover effects on children. Accordingly, we might introduce a bias by applying population-wide averages, instead of focusing on the relevant reference group. We therefore additionally calculate a measure of average norms in the younger generation (i.e., the respondents below the age of 25 at the time they are surveyed). Figure A6 in the Appendix displays averages for both the general population and the population under 25 by country.

3.4. Correlations between the country-level explanatory variables

Fig. 1 shows the correlations between the variables capturing the contextual factors that potentially moderate the effect of parental unemployment on child well-being. As expected, social security policies are to some extent correlated with labor market conditions and norms. We take this up in our empirical analysis when isolating the interaction effect of unemployment benefits. In panel 1(a), we observe that the correlation between the average replacement rate and the unemployment rate, as a descriptive measure of the general norm to work, is rather low ($r = -0.22$, n.s.). Panel 1(c) further indicates a slight negative correlation between the generosity of unemployment benefits and general work norms ($r = -0.13$, n.s.). Panels 1(b) and (d) demonstrate distinct correlations between unemployment benefits and gender-specific work norms. Panel 1(b) shows a positive correlation with higher female labor force participation ($r = 0.42$, $p < 0.01$) that is

partly driven by the two observations on the left and Panel 1(d) a negative correlation with injunctive gender-specific work norms ($r = -0.39$, $p < 0.01$), which is measured such that higher values denote more traditional gender norms.[15] Countries with stronger social norms to work as opposed to living off benefits and stronger male breadwinner norms thus tend to feature lower replacement rates. This observation reinforces the need to test the robustness of our results in a joint model later in the empirical analysis.

4. Estimation strategy

The identification of the effect of parental unemployment on child well-being is challenging. This holds in particular for analyses based on cross-sectional data. They potentially suffer from reversed causality as it cannot be ruled out that stressed individuals (for instance, because their child suffers in school) are more likely to be laid off, or from omitted variable bias as there might be unobserved common determinants of both (low) life satisfaction and unemployment. We have singleton observations of each child and hence do not observe them before and after experiencing the mother or father losing their job. We think that reverse causality is less threatening in our case as the relation between a child's life satisfaction and their parents' employment status is to a lesser extent obvious than the relation between personal life satisfaction and employment status. However, unobserved common drivers of a child's life satisfaction and parental unemployment, such as, for instance, living in a poor neighborhood, cannot be ruled out easily.

In the introduction, we spelled out the necessary assumptions to identify potential negative externalities of parental un-employment on child well-being and a possible "buffering effect" of unemployment benefits given the data at hand. In the following, we explain the implications for the estimation strategies. Regarding the association between parental unemploy-ment and child well-being, we adopt a specific control strategy taking into account proxy measures for parents' income and wealth in order to minimize the risk of an omitted variable bias. Section 4.1 explains the construction of the main control variables and the specification of the baseline estimation model.

For the identification of the moderating effect of the main contextual factor, i.e., the generosity of unemployment ben-efits, our estimation strategy relies on variation between and within countries over time. We can thus apply a rigorous control strategy to capture the interaction effect between parents' unemployment and benefits. Section 4.2 introduces the corresponding extended estimation model with the interaction term.

4.1. Baseline estimation model

In our baseline estimation model for the correlation between parents' unemployment and a child's subjective well-being, we stepwise control for the family's financial resources using two different measures. First, we use proxy measures of family wealth included in the family affluence scale (FAS), a brief assets-based measure of family wealth developed by Currie et al. (1997) for the HBSC. The FAS includes four items, which are simple to answer and reflect family ownership or access to goods and services that are relevant to family circumstances. The scale was validated, both concerning its external criterion validity on the national (Boyce et al., 2006) and regional level (Hobza et al., 2017), and indicates high concur-rent validity in terms of relationships with cohesive outcomes (Currie et al., 2008) and also moderate internal validity (e.g., Torsheim et al., 2016).[16]

More precisely, children are asked whether they have their own bedroom, about the number of cars the family owns, the number of computers in the household and the number of holidays the family spends per year. Furthermore, the survey includes a question on the child's perception of its family's socio-economic circumstances, asking them to answer "*How well do you think your family is off?*" on a scale from (1) "*Not at all well off*" to (5) "*Very well off*". Though a rigorous statistical control of the family's ex-ante income situation is not possible, we use the indicators on whether the child has its own bedroom, the number of family cars and the number of computers as a rough measure of the family's wealth. With this control variable, we aim at reducing potential selection effects. The two other items, i.e., the well-off indicator and the number of holidays per year, we expect to be more responsive to changes in household income due to parental unemployment and therefore to vary in the short-run. Their inclusion might thus create a bad controls' problem when trying to capture the total effect of parental unemployment on child well-being. While aware of this risk, we still introduce these measures in a subsequent step to learn about the sensitivity of the estimated correlations. Moreover, the extended specification allows us to get closer to the isolation of the non-pecuniary costs of parental unemployment for their children.

Specifically, we estimate the following linear regression for child i, living in country c, interviewed in survey year t:

$$LifeSatisfaction_{ict} = \beta_1\, ParentalUE_{ict} + \beta_2 X'_{ict} + \tau_c * \delta_t + \varepsilon_{ict} \tag{1}$$

where $LifeSatisfaction_{ict}$ is the child's well-being measured using the Cantril Self-Anchoring Striving Scale. $ParentalUE_{ict}$ is a dummy variable indicating whether at least one parent is unemployed, such that β_1 is our main coefficient of interest. Alter-natively, we use dummy variables for both father's and mother's unemployment. When splitting the parental unemployment

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[15] Though not shown here, additional analyses further showed a strong correlation between the survey measures for the general social work norm and the gender-specific one ($r = 0.77$, $p < 0.01$).

[16] For more details on the measures of family wealth and income see Appendix A.1.3.

variable into maternal and paternal unemployment, we additionally control for whether both parents are unemployed.[17] X'_{ict} is a matrix of individual covariates, that includes dummies for gender, age, as well as their interaction, as prior research shows that life satisfaction profiles of girls develop differently over puberty than those of boys (e.g., Bradshaw et al., 2013). Furthermore, we control for whether the respondent is an only child, and whether the child lives with the mother, the father, or with both parents (the latter serves as reference category).[18] Importantly, we add measures for family wealth and current income proxies in subsequent steps. $\tau_c * \delta_t$ represents country-specific year effects to control for common shocks that might affect all children in a given country in a given survey year. ε_{ict} is an idiosyncratic error term, with standard errors clustered at the country-survey year level to account for possible correlation of the individual-level residuals within the same country and survey year.

For the statistical analysis, the ordinal variable life satisfaction is treated as a cardinal measure in an ordinary least square regression. Previous research has shown that this simplification seems to matter little for the qualitative as well as the quantitative results (e.g., Ferrer-i Carbonell and Frijters, 2004). Further, our following analyses using interaction terms would not allow for an intuitive interpretation of ordered logit or probit models (e.g., Ai and Norton, 2003).

4.2. Extended estimation model with interaction terms

Taking a cross-national comparative perspective, we identify potential moderating effects of contextual factors. Specifically, we exploit variation within countries over time[19] using country τ_c and time fixed effects δ_t to control for time-invariant heterogeneity at the national level, as well as time-specific shocks across the sample:

$$LifeSatisfaction_{ict} = \beta_1\, ParentalUE_{ict} + \beta_2\, Macro_{ct} + \beta_3\, ParentalUE_{ict} * Macro_{ct} + \beta_4 X'_{ict} + \tau_c + \delta_t + \varepsilon_{ict} \qquad (2)$$

where $Macro_{ct}$ is one or more of the variables average replacement rate ($Benefits_{ct}$), unemployment rate (UER_{ct}) as a general measure of the descriptive work norm, ratio of the female to male labor participation rate ($FemaleLabor_{ct}$) as an approximation of gender-specific work norm, or the country-level averages on injunctive work norms from the WVS. To control for current labor market conditions, we hold the unemployment rate constant throughout all our estimations which include interaction terms with contextual factors. We standardize all moderating macro-level variables using the mean and the standard deviation of the respective variables in our sample of interest.[20]

5. Parental unemployment and child well-being

Table 2 presents the results of our baseline model (1). When simply comparing levels of subjective well-being in column 1, we find that children in households with at least one parent unemployed are, on average, less satisfied with their life. However, this difference might be due to factors other than parents' unemployment. To reduce potential omitted variable bias, we take proxy measures for household wealth into account, i.e., the number of family cars, computers at home and whether the child has its own bedroom. The results in column 2 show that the partial correlations for these control variables are as expected: Children in families with more cars, computers and their own bedroom are, on average, more satisfied with their lives. Controlling for family wealth, we still find a sizable and statistically significant correlation between parental unemployment and child well-being. On average, children with at least one unemployed parent report a 0.204 point lower level of satisfaction with life (measured on the 11-point scale). This is a substantial difference, similar to the one of living in a relatively more wealthy household with one or more computers.

In column 3, a decomposition of the effect with regard to pecuniary and non-pecuniary costs of parental unemployment is pursued. For this, we additionally control for proxies of the household's current income situation. We find these measures, based on self-reports, to have substantial predictive power for child well-being: Compared to children who indicate their family's financial situation to be "average", children who state their family to be "not at all well off" have, on average, a one point lower life satisfaction. Regarding the correlation with parental unemployment, a negative relationship with children's life satisfaction remains, suggesting consequences of parental unemployment on child well-being that go beyond the pure pecuniary costs of joblessness.

Turning to columns 4 to 6, we find through all models that having an unemployed father seems to affect child well-being significantly more negatively than having an unemployed mother.[21] The specifications of these models also include separate

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[17] Either individual coefficient for maternal and paternal unemployment can then be interpreted as the partial correlation as if the other parent is employed.

[18] Previous studies have shown that unemployment increases the probability of divorce (e.g., Jensen and Smith, 1990), which in turn negatively affects a child's well-being (Amato and Cheadle, 2005).

[19] As explained in Section 3.3, we refrain from exploiting variation in the WVS norm measures over time and thus only estimate the interaction effect with parental unemployment for those indicators. The coefficients for the main effects of the norm variables are dropped due to perfect collinearity with the country fixed effects.

[20] We further ran all analyses with the weights provided by the HBSC Data Management Center (available upon request). The results are almost identical to the unweighted results reported here.

[21] The coefficients of maternal and paternal unemployment in columns 4 to 6 reflect the difference in child well-being when the respective other parent is employed. This is because we additionally include a dummy variable to control for the possibility that both parents are unemployed. The results for this and all other control variables which are not shown in Table 2 can be found in Table B2 in the Appendix. We have included the respective variable in our
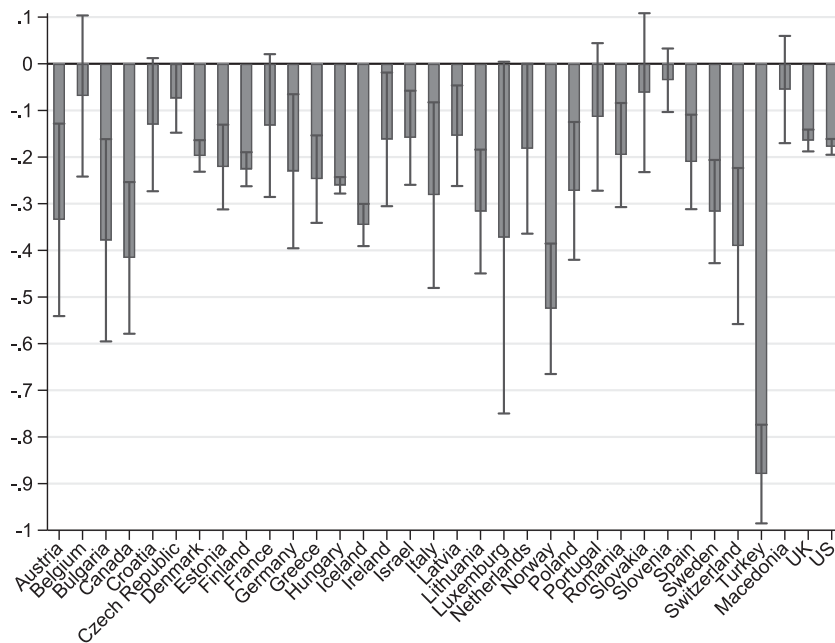
Fig. 2. Parental unemployment and child well-being across countries. *Note:* The figure indicates the average difference in life satisfaction for children with at least one parent looking for a job (including 95% confidence intervals) relative to children with employed parents by country. The coefficient estimates are based on an OLS regression as in column 2 of Table 2 that interacts parental unemployment with the country dummies.

covariates for mother's and father's further possible working statuses (with "working" being the reference category). The corresponding results can be found in Appendix B2. We observe that children report at least as much a lower level of life satisfaction as with mother's unemployment if their mother is either "sick, retired or student", the mother's job is not known or if they have no contact with her. In contrast, a higher level of life satisfaction is reported by children who have a homeworking mother rather than a mother going for paid work outside (when controlling for family wealth or wealth and income). This positive differential is not observed for children with a homeworking father. Instead, a lower level of life satisfaction is estimated with the negative difference not as large as for the father being unemployed though. For the other possibilities of father's status, i.e., the father being "sick, retired or student", and the child not knowing the father's job or not having contact with him, large negative differentials are measured.

In a supplementary analysis, we also test whether the well-being effects of parental unemployment differ by the age and the gender of the child. In previous work, Haisken-DeNew and Kind (2012) find that boys suffer significantly more from paternal unemployment than girls. Bubonya et al. (2017), reversely, find that the negative effect seems greater for girls. Our results are provided in Tables B3 and B4 in the Appendix. We find no significant differences in the effects of parental, respectively maternal and paternal, unemployment for boys' and girls' well-being across countries. Regarding differences by age, we find, similar to Powdthavee and Vernoit (2013), that older children are significantly more affected by parental unemployment than younger children. We do, however, still find a statistically significant negative effect also for younger children when controlling for family wealth, but not when also considering the reported current income situation.

In a further analysis, we study the well-being difference between children with employed and children with unemployed parents by country. For this, the specification underlying the OLS regression in column 2 of Table 2 is extended with inter-action terms between the indicator for parental unemployment and the country dummies. Fig. 2 presents the corresponding results for the country-specific differences (including 95% confidence intervals). We observe statistically significant differences in child well-being due to parental unemployment in almost every country. Moreover, there is substantial variation in the size of these differences. Figure B1 in the Appendix presents additional descriptive evidence showing that also the separate differences for maternal and paternal unemployment vary strongly between countries. In a next step, we investigate whether this variation is to some extent due to moderating factors at the country level.

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linear regression model to account for the possibility that having two parents unemployed is not as bad as indicated by the individual partial correlations for the father and the mother being unemployed. In other words, the two coefficients cannot simply be summed up. The results indicate that indeed the difference in child well-being is not statistically significantly larger if not only the father but also the mother is unemployed. The difference remains larger if not only the mother but also the father is unemployed.

Table 2

Parental unemployment and child well-being.

| Dependent variable:	Life satisfaction					
	(1)	(2)	(3)	(4)	(5)	(6)
At least one parent unemployed	−0.272*** (0.017)	−0.204*** (0.015)	−0.059*** (0.014)			
Mother unemployed				−0.214*** (0.017)	−0.160*** (0.016)	−0.049*** (0.015)
Father unemployed				−0.381*** (0.028)	−0.303*** (0.024)	−0.099*** (0.021)
Proxies for family wealth						
Reference category: No family car						
One car		0.218*** (0.016)	0.108*** (0.014)		0.189*** (0.016)	0.093*** (0.014)
Two or more cars		0.329*** (0.016)	0.110*** (0.015)		0.288*** (0.016)	0.090*** (0.014)
Reference category: No computer at home						
One computer		0.206*** (0.022)	0.089*** (0.018)		0.188*** (0.022)	0.082*** (0.018)
Two computers		0.241*** (0.025)	0.057** (0.022)		0.220*** (0.024)	0.049** (0.022)
More than 2 computers		0.215*** (0.027)	−0.037 (0.023)		0.192*** (0.026)	−0.046** (0.022)
Reference category: No own bedroom						
Own bedroom		0.214*** (0.014)	0.109*** (0.010)		0.208*** (0.014)	0.107*** (0.010)
Proxies for current income situation						
Not at all well off			−1.119*** (0.080)			−1.103*** (0.080)
Not very well off			−0.808*** (0.024)			−0.801*** (0.024)
Reference category: Average						
Quite well off			0.471*** (0.015)			0.469*** (0.015)
Very well off			0.928*** (0.027)			0.926*** (0.027)
Reference category: No holiday/year						
One holiday/year			0.245*** (0.015)			0.241*** (0.014)
Two holidays/year			0.341*** (0.019)			0.336*** (0.019)
More than two holidays/year			0.460*** (0.023)			0.455*** (0.023)
Individual controls	✓	✓	✓	✓	✓	✓
Country-year FE	✓	✓	✓	✓	✓	✓
Observations	542,084	542,084	542,084	542,084	542,084	542,084
R-squared	0.071	0.077	0.137	0.074	0.079	0.138

The table shows the relationship between parental unemployment (columns 1-3), respectively maternal and paternal unemployment (columns 4-6), and child life satisfaction using OLS, subsequently adding measures for family wealth (columns 2 and 5) and current income proxies (columns 3 and 6). Standard errors are clustered by country and survey year and displayed in parentheses. Further individual controls include gender, age, only child and family status (for details see Table B2 in the Appendix). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

## 6. Child well-being, unemployment insurance and social norms

6.1. The moderating role of unemployment benefits

We analyze the potentially moderating effect of more or less generous unemployment benefits in the extended estimation model 2. The focus is now on the interaction between parental unemployment and the average replacement rate. This captures whether the negative correlation between parental unemployment and child well-being is smaller in countries with more generous benefits. The estimation results are presented in Table 3. We additionally depict the marginal effects of parental, paternal and maternal unemployment as a function of the average replacement rate in Fig. 3.

Considering parental unemployment overall (columns 1 and 2, respectively panel 3(a)), we find no statistically significant main effect and no moderating effect of more generous unemployment benefits on child well-being. Interestingly, once the perceived income situation is taken into account, children's subjective well-being seems positively correlated with the rate of unemployment. Splitting the analysis for maternal and paternal unemployment yet reveals that the insignificant
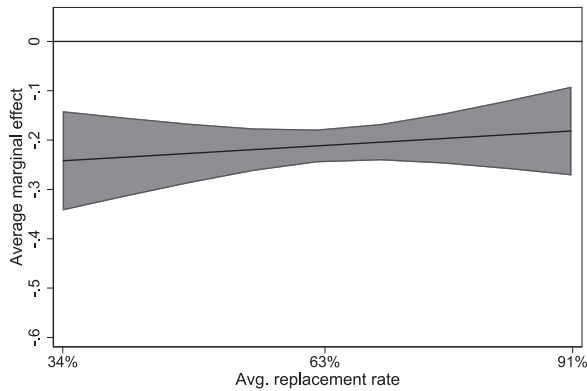
(a) Parental unemployment
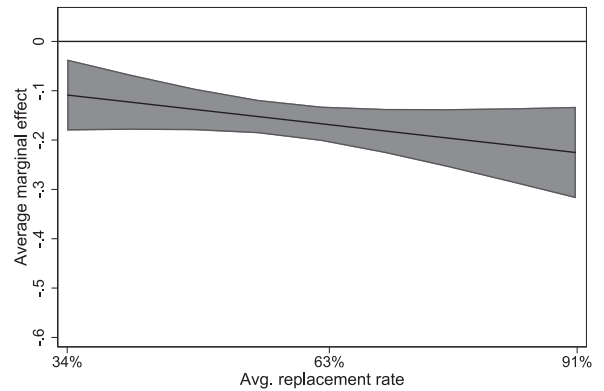
(b) Maternal unemployment
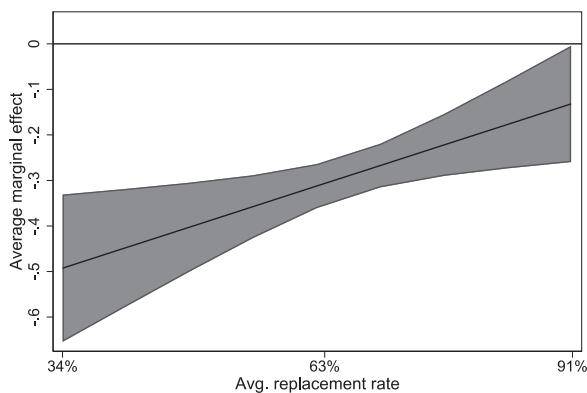
(c) Paternal unemployment

Fig. 3. Effect of parental unemployment on child well-being depending on the level of unemployment benefits. *Note:* The figures show the marginal effects of parental (panel 3(a)), maternal (panel 3(b)) and paternal (panel 3(c)) unemployment on child well-being at different levels of benefit replacement rates based on OLS regressions controlling for family wealth, with 90% confidence intervals. Standard errors are clustered by country and survey year. Specification 2 in Table 3 shows the full regression output.

interaction term in columns 1 and 2 might be driven by counteracting moderation effects for paternal and maternal unemployment. Whereas the effect is not statistically significant at conventional levels, we find a negative interaction between maternal unemployment and more generous unemployment benefits in column 3 (see also panel 3(b)). In contrast, generous unemployment insurance seems to buffer the negative well-being effects of father's unemployment substantially. Panel 3(c) shows that in an environment with a comparatively low replacement rate for the unemployed (i.e., 34%), the life satisfaction of children whose fathers are unemployed is, on average, 0.49 points lower on the 11-point scale than the life satisfaction of children who indicate their father as working. This difference is significantly reduced to about 0.31 points at the average replacement rate of 63% and diminishes further to about 0.13 points in environments with a comparatively high replacement rate (i.e., 91%).

As we identify the moderating effect of unemployment benefits based on within and between country variation of the average replacement rate, we furthermore test whether our main results for the buffering effect of unemployment benefits are driven by observations from a single country. This seems not to be the case. The results of this analysis can be found in Appendix C.2.

When we additionally consider the proxy measure for the household's current income in the extended model, not surprisingly, the interaction terms get smaller. The coefficient for the interaction between paternal unemployment and unemployment benefits is reduced by about 25%. Yet, it remains positive and statistically significant. We thus find that the buffering effect of more generous government transfers seems to not only reduce the pecuniary costs felt by the children, but to some extent also the non-pecuniary costs of paternal unemployment. Unemployed fathers might be less stressed in environments with more generous benefits affecting children over and above any changes in consumption. This latter finding might also hint at an underlying relationship between the generosity of unemployment benefits and social work

Table 3

Parental unemployment, unemployment benefits and child well-being.

Dependent variable:	Life satisfaction			
	(1)	(2)	(3)	(4)
At least one parent unemployed	−0.211*** (0.017)	−0.067*** (0.015)		
Mother unemployed			−0.169*** (0.018)	−0.060*** (0.017)
Father unemployed			−0.307*** (0.024)	−0.105*** (0.022)
Unempl. benefits	−0.017 (0.048)	−0.004 (0.057)	−0.020 (0.048)	−0.008 (0.057)
At least one parent unemployed × Unempl. benefits	0.015 (0.022)	0.013 (0.017)		
Mother unemployed × Unempl. benefits			−0.028 (0.018)	−0.016 (0.017)
Father unemployed × Unempl. benefits			0.087** (0.034)	0.065** (0.026)
Unemployment rate	0.013 (0.027)	0.066*** (0.025)	0.019 (0.027)	0.069*** (0.025)
Individual controls	✓	✓	✓	✓
Proxies family wealth	✓	✓	✓	✓
Proxies for current income		✓		✓
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	482,917	482,917	482,917	482,917
R-squared	0.071	0.130	0.073	0.131

The table shows the estimated effects of parental unemployment (columns 1 and 2), respectively maternal and paternal unemployment (columns 3 and 4) in interaction with average replacement rates on child well-being using OLS. Standard errors are clustered by country and survey year and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

norms. Such an alternative interpretation might also be applied to the finding for the interaction between unemployment benefits and maternal unemployment. The finding that the differences are slightly larger in countries with a higher average replacement rate (even though not statistically significantly) might be due to weaker male breadwinner norms and hence stronger obligations for women to actively participate in the labor market in these countries. We study such an alternative mechanism in Section 6.2 in an analysis that takes unemployment benefits and social norms jointly into account.

6.2. The complementary influence of social work norms

We analyze whether social work norms affect the relationship between parental unemployment and child well-being and potentially explain part of the moderating relationship between parental unemployment and unemployment benefits, considering proxy measures for *descriptive* norms as well as *injunctive* norms. Table 4 displays the results of the analysis, where we add interaction terms with variables approximating social norms.

The specifications in columns 1 and 2 include the additional interaction terms between the national unemployment rate and mother's, respectively father's, unemployment. With this we test whether the effect of parental unemployment on child well-being is smaller in an environment in which more people are unemployed and parents, as well as children, suffer less from social pressure. We do not find any systematic correlations for the interaction terms between parental unemployment and the national unemployment rate. As before, we find a statistically significant correlation between the unemployment rate and child well-being when controlling for the household's current income situation. The coefficient for the interaction between paternal unemployment and the replacement rate remains sizeable and statistically significant. This also holds when proxies for households' current income are added.

As the pressure on unemployed fathers and mothers might differ depending on women's integration on the labor market, we include the female-to-male labor force participation rate as a gender-specific descriptive work norm in columns 3 and 4. We find that the negative effect of paternal unemployment is smaller in countries with a higher female labor force participation, suggesting less mental distress for unemployed fathers in environments in which they are less exposed to a male bread-winning obligation. The positive correlation between liberal descriptive gender norms and unemployment benefits is reflected in a smaller coefficient for the interaction term between paternal unemployment and unemployment benefits. However, this latter coefficient remains positive and statistically significantly different from 0. Once we additionally consider how children perceive the current income situation of the household, the descriptive gender norm does no longer add systematically to the prediction of their well-being.

In columns 5 to 8, we analyze whether children are affected less by their parents' lot, if unemployed mothers and fathers experience less of a moral obligation to work due to weaker *injunctive* norms. The results in columns 5 and 6 suggest

Table 4
Parental unemployment, unemployment benefits, social norms and child well-being.

Dependent variable:	Life satisfaction							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mother unemployed	−0.199***	−0.077***	−0.199***	−0.076***	−0.198***	−0.075***	−0.197***	−0.074***
	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)	(0.021)
Father unemployed	−0.342***	−0.122***	−0.341***	−0.125***	−0.341***	−0.123***	−0.345***	−0.127***
	(0.031)	(0.026)	(0.029)	(0.029)	(0.029)	(0.027)	(0.029)	(0.027)
Unempl. benefits	−0.112*	−0.098	−0.119**	−0.100	−0.110*	−0.095	−0.111*	−0.097
	(0.058)	(0.068)	(0.057)	(0.068)	(0.057)	(0.068)	(0.058)	(0.069)
Mother unemployed × Unempl. benefits	−0.016	−0.008	−0.009	−0.003	−0.014	−0.007	−0.010	−0.007
	(0.023)	(0.021)	(0.026)	(0.024)	(0.024)	(0.022)	(0.027)	(0.025)
Father unemployed × Unempl. benefits	0.116***	0.078***	0.066*	0.065*	0.089***	0.058*	0.088***	0.061**
	(0.040)	(0.027)	(0.037)	(0.038)	(0.033)	(0.029)	(0.033)	(0.030)
Unempl. Rate	0.023	0.073**	−0.012	0.062*	0.026	0.074***	0.025	0.074***
	(0.029)	(0.028)	(0.032)	(0.036)	(0.029)	(0.027)	(0.029)	(0.027)
Mother unemployed × Unempl. rate	0.010	0.014						
	(0.016)	(0.022)						
Father unemployed × Unempl. rate	−0.012	−0.018						
	(0.033)	(0.039)						
Female/Male labor force participation (LFP)			0.129	0.041				
			(0.091)	(0.108)				
Mother unemployed × Female/Male LFP			−0.019	−0.018				
			(0.024)	(0.022)				
Father unemployed × Female/Male LFP			0.065**	0.020				
			(0.028)	(0.022)				
Mother unemployed × Country work norm					0.020	0.019		
					(0.029)	(0.027)		
Father unemployed × Country work norm					−0.075*	−0.061*		
					(0.038)	(0.031)		
Mother unemployed × Country gender norm							0.022	0.012
							(0.024)	(0.022)
Father unemployed × Country gender norm							−0.054	−0.038
							(0.037)	(0.030)
Individual Controls	✓	✓	✓	✓	✓	✓	✓	✓
Proxies Family Wealth	✓	✓	✓	✓	✓	✓	✓	✓
Proxies for Current Income		✓		✓		✓		✓
Country FE	✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	334,374	334,374	334,374	334,374	334,374	334,374	334,374	334,374
R-squared	0.076	0.133	0.077	0.133	0.077	0.133	0.076	0.133

The table shows the estimated effects of maternal, respectively paternal, unemployment and their interaction with the unemployment rate (columns 1 and 2), the female-to-male labor force participation rate (columns 3 and 4), injunctive general work norms (columns 5 and 6) and injunctive gender-specific work norms (columns 7 and 8) on child well-being using OLS, meanwhile controlling for the interaction between maternal/paternal unemployment and the average replacement rate using OLS estimations. Standard errors are clustered by country and survey year and displayed in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

that work norms, as measured in the WVS, systematically moderate the effect of paternal unemployment on child well-being. In countries with stricter norms, children suffer systematically more from paternal unemployment (but not from maternal unemployment). For a one standard deviation increase in this measure, the life satisfaction of a child is reduced by approximately 0.075 points more if the father is unemployed. This is about a 22% increase of the spillover effect of paternal unemployment on child well-being. That mothers' and fathers' unemployment is moderated differentially is congruent with the gender identity hypothesis and also with existing evidence by Roex and Rözer (2018) who find a more pronounced effect of work norms for unemployed men than for unemployed women. The generosity of unemployment benefits remains an economically and statistically significant moderating variable for the effect of paternal unemployment on child well-being. This indicates that the effect of unemployment insurance as a formal institution goes beyond the expression of a norm. In columns 7 and 8, we consider the alternative survey-based measure for gender-specific work norms referring to the expressed priority that should be given to men on the labor market when jobs are scarce. Similarly as for the tests which included the ratio of female-to-male labor force participation, we find that paternal unemployment seems to have slightly more severe and maternal unemployment slightly less severe effects on child well-being in environments with a stronger traditional male breadwinner norm, though the effect is not statistically significant at conventional levels.

In a supplementary analysis, we test whether these results are sensitive to considering norms from individuals under the age of 25, as opposed to the whole population. Figure A6 in the Appendix depicts average values for these two groups. While general work norms seem to differ only slightly across age groups, younger individuals in almost all countries exhibit significantly lower traditional gender norms. The results for the interactions between parental unemployment and injunc-

tive norms of individuals under the age of 25 are overall very similar to the ones using norms across all age groups (see Table C2 in the Appendix). The negative interaction between general work norms and father's unemployment is slightly stronger (though the difference in coefficients is not statistically significantly). Furthermore, we observe that the coefficient for the interaction term between maternal unemployment and the gender work norm is weaker when we consider the norm expressed by younger generations. This might indicate that the moderating effect of gender-specific work norms is rather driven by indirect spillover effects of parental well-being rather than direct effects on the well-being of children with unemployed parents.

7. Conclusions

Based on a unique repeated cross-sectional data set of school-aged children in Europe, the Middle East and North America, we study how parental unemployment affects the life satisfaction of their offspring. Our analysis offers a novel comparative view on inter-generational effects of unemployment. Specifically, it relates the negative consequences on children's well-being to formal and informal institutions. In line with existing evidence, we find that the experience of parental unemployment, irrespective of the parents' gender, is strongly negatively related to children's subjective well-being. Thereby, the spillover effects of paternal unemployment are significantly worse than the one's of maternal unemployment in the majority of countries in our study.

We argue that a better understanding of the origins of such differences can help in designing effective policy responses, not only to reduce the costs of unemployment for the people personally affected, but also potential externalities for relatives. In our study, we emphasize the generosity of unemployment benefits as such a potential moderating factor. Our results indicate that generous insurance against the financial consequences of unemployment can not only mitigate the negative effects for the unemployed individuals (for a review, see e.g., O'Campo et al., 2015), but also reduce the negative spillover effects of paternal unemployment on their children's well-being.

Prior research has shown that personal unemployment relates to less severe well-being consequences in environments with weaker social work norms. We therefore test our results by considering general and gender-specific measures for descriptive and injunctive work norms. While unemployment benefits and social norms have seldom been statistically studied together, we argue that the joint analysis of these two factors is crucial, as both theoretical (e.g., Lindbeck, 1995; Bisin and Verdier, 2011) as well as empirical studies (e.g., Ljunge, 2012) suggest an endogeneity of work norms and the generosity of the unemployment insurance systems, which could potentially bias the result of either separate analysis.

Keeping the obstacles in measuring social norms in mind, our results indicate that parental unemployment is a larger burden for children's well-being in environments with a stronger injunctive work norm and that the differences in the spillover effects of maternal and paternal unemployment are partly explained by the relative strength of the traditional male breadwinner norm. The moderating effect of more generous unemployment benefits for paternal unemployment is, however, robust against the inclusion of all norm proxies. Our findings suggest that programs targeting unemployed individuals might not only help to alleviate the burden for them, but also to reduce the burden for their offspring.

In future research, the current analysis is ideally replicated for other sets of countries and other time periods to learn about the robustness of our findings. Moreover, there are a series of limitations of our analysis that might be addressed. Due to the cross-sectional nature of the HBSC data, we cannot test for any habituation effects and whether institutional factors differentially moderate spillover effects depending on the duration of parental unemployment. Other data sets might also help to overcome some other weaknesses. Based on cohort studies including (survey) data from children *and* their parents, errors regarding the measurement of parental unemployment and families' socio-economic situation could be reduced. Moreover, information about the employment status of a child's most important reference person in the household might be available (that needs not to be a biological parent). Repeated observations from the same families would also allow to capture the effect of parental unemployment on child well-being in a *within* design. Cohort studies or repeated cross-sections that span over a longer time period might also cover enough variation in the generosity of the unemployment insurance to flexibly control for unobserved country-specific factors that affect the well-being of children with unemployed parents. This might, for example, hold for neighborhood support. Moreover, potentially observable factors could be integrated like the availability of a day school structure that might differentially moderate the relationship between children and their parents (or affect parents' finances when the corresponding service is not publicly funded). If such institutional factors were partly correlated with the generosity of unemployment benefits, we might get a more fine-grained understanding of the state institutions that contribute to a "buffering effect" that helps to maintain child well-being.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary material

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jebo.2022.10.023.

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