



# DaWS

WORKING PAPER SERIES

WP 2017-2

DANISH CENTRE FOR WELFARE STUDIES  
UNIVERSITY OF SOUTHERN DENMARK

Marius Busemeyer & Julian Garritzmann

University of Konstanz & Universities of Konstanz and Zurich

THE EFFECT OF ECONOMIC GLOBALIZATION  
ON COMPENSATORY AND SOCIAL INVESTMENT  
POLICIES COMPARED:

A multi-level analysis of OECD countries

# The effect of economic globalization on compensatory and social investment policies compared: A multi-level analysis of OECD countries

Marius R. Busemeyer & Julian L. Garritzmann

*Busemeyer:* corresponding author, University of Konstanz, Fach D 79  
D-78457 Konstanz, Germany  
e: Marius.Busemeyer@uni-konstanz.de

*Garritzmann:* University of Konstanz and University of Zurich  
e: julian.garritzmann@uni-konstanz.de

## Abstract

The debate on effects of economic globalization on welfare states is extensive. A prominent hypothesis is that generous welfare policies buffer the negative externalities of globalization, but recent empirical evidence confirms a negative association between globalization and public social spending. Attempting to reconcile these conflicting findings, we broaden the perspective by investigating not only the impact of globalization on traditional compensatory social policies (e.g., unemployment benefits) but also on future-oriented social investments (e.g., education). We argue that instead of demanding compensation for globalization-induced job-loss ex post, people try avoiding unemployment ex ante by demanding increased skill-investments. We find a positive association between globalization and individual-level demand for public spending on education, but not for unemployment. Nevertheless, we show that this demand is not translated into policy output. Thus, a potential mismatch between popular demand for and supply of welfare is revealed, which challenges conventional wisdom in the policy responsiveness literature.

## Keywords:

Globalization, welfare state, compensation, social investment, education, attitudes, public opinion, policy-output

## 1. Introduction

Although it has been going on for a long time, the debate on the impact of economic globalization on the welfare state is far from being settled. Often couched in terms of a battle between the compensation and the efficiency thesis, the scholarly literature has provided contradictory arguments and findings on this complex association. On the one hand, globalization might increase popular demand for compensatory social policies so that highly open economies are often found to be the ones with the largest welfare states (e.g., Scandinavian countries or the Netherlands). On the other hand, competition between nation-states for mobile capital might delimit the governments' leeway to increase revenues via taxation and therefore depress levels of public social spending. The existing empirical evidence is mixed (see references below).

We aim to contribute to the somewhat deadlocked theoretical and empirical discussions on the "compensation vs. efficiency" arguments in two respects. Firstly, we argue that instead of focusing on compensatory social policies (typically: unemployment benefits) as is usually done in the literature, we should broaden the analytical perspective by studying the impact of globalization on social investment policies (e.g., education) in addition to classical transfer programs. We hypothesize that rather than demanding compensation for globalization-related income losses ex post, individuals in open economies are more likely to demand support for updating their (or their children's) skills, as well as the general level of human capital in the economy, in order to avoid unemployment in the first place. The neglect of human capital investments in the existing literature might be one reason why the empirical evidence on the globalization-welfare nexus is so mixed.

The second contribution of our paper is that the compensation and the efficiency arguments can actually be combined when distinguishing between public *demand for* policies, on the one hand, and the ability of policy-makers to *supply* these policies, on the other. Following compensation theory,

we posit that public welfare demand is higher in open economies. Nevertheless, we also argue that this demand does not necessarily translate into policy output: Efficiency pressures constrain policy-makers, who are increasingly unable to meet the public's demand for additional welfare. By distinguishing demand for and supply of welfare policies, many seemingly contradicting findings can be explained. While we are not the first to notice this possibility to reconcile both theories (see Brady et al. 2007; Cerny 1997; Genschel 2004; Hays 2009; Hicks 1999; Rodrik 1997), this argument is not prominent in the literature and – more importantly – has not been systematically tested yet.

In order to probe these two claims, we conduct empirical analyses on two levels: First, we use International Social Survey Programme (ISSP) data and compare the impact of economic globalization on individual-level preferences towards public unemployment and education spending. From the perspective of conventional compensation theory, economic globalization should evoke individual-level demand for unemployment spending; we find, however, that – in line with our social investment argument – individuals in open economies demand public investments in human capital formation. In a second step, we investigate whether policy-makers meet this demand for provision via social investment. Here, we analyze the relationship between economic globalization and government spending across three welfare policy fields in time-series cross-section (TSCS) regressions, finding that the effects vary substantially across domains: In the case of compensatory policies (i.e. passive unemployment spending), we find some support for a negative association in line with the efficiency argument (cf. also Busemeyer 2009a; Jahn 2006). In the case of education, however, there is no robust association: Globalization neither increases nor decreases education spending. These findings suggest concluding that we observe an increasing mismatch between public demand for and actual supply of welfare. In the concluding section, we speculate on the implications of this finding for the future of the welfare state and representative democracy.

In what follows, we briefly discuss the existing literature (section 2) and introduce our argument (section 3). Section 4 reports empirical results on the impact of globalization on individual-level demand for public spending. Section 5 provides TSCS-regression results for the supply-side. We close by summarizing and discussing our findings and by pointing out broader implications.

## **2. Demand for and supply of welfare: Reconciling contradicting perspectives**

There is a huge literature on the relationship between economic globalization and the welfare state (for overviews, see e.g. Brady et al. 2007; Genschel 2004; Hays 2009), which can be roughly divided into three camps: A first group of scholars could be named *globalization skeptics* (Castles 2004; Iversen 2001; Iversen/Cusack 2000). In their view, other socio-economic processes such as deindustrialization and skill-biased technological change are more important driving forces of welfare state development than economic globalization. Moreover, they claim that the politics of welfare state expansion and retrenchment play out in the arena of domestic politics and that constraints supposedly imposed by the dynamics of economic internationalization are much less binding than assumed (see also Swank 1998, 2002).

In contrast, two other strands of literature agree that globalization has significant effects on welfare states, but expect effects in opposite directions: The *compensation thesis*, going back to work by Cameron (1978) and Katzenstein (1985), posits that economic globalization leads to an increase in popular demand for social insurance, because individual workers exposed to the vagaries of international markets perceive amplified economic insecurity (Scheve/Slaughter 2004) and demand compensation via the welfare state (more recent contributions are Garrett 1998; Rodrik 1997, 1998). The so-called *efficiency thesis* states the opposite view (Kurzer 1991; Scharpf 1991): Economic globalization is believed to constrain public spending in general and on welfare in particular because competition for mobile capital triggers a “race to the bottom” between nation-states (Genschel 2002): As firms in internationalized markets can credibly threaten to withdraw capital, governments are expected to react to these threats by decreasing the firms' costs, especially taxes. Decreasing tax revenues, in turn, make cuts in (social) spending more likely.

The empirical evidence on the macro-level is mixed (Benarroch/Pandey 2012; Brady et al. 2005; Brady et al. 2007; Burgoon 2001; Garrett 1998, 2001; Garrett/Mitchell 2001). Some scholars confirm the existence of a positive association between economic globalization and welfare state

generosity (Garrett 1998; Garrett 2001; Rodrik 1998), whereas others find support for the efficiency thesis (Busemeyer 2009a; Jahn 2006; Marshall/Fisher 2015). More recently, scholars argued that one way of reconciling the competing claims is to think of the effect of globalization as variable over time: The nature (or intensity) of economic globalization might have changed at some point in time. Hicks (1999), for example, argued that the effect of globalization on welfare spending is curvilinear, initially contributing to spending increases, but exerting downward pressure after a certain threshold is reached. In this vein, Jahn (2006) points to the late 1980s as a potential breaking point. Moreover, the effects of globalization may simply take more time to materialize, as Busemeyer (2009a) hypothesizes. Probing the impact of openness on public spending in a series of cross-sectional regressions, he finds a positive association in the early 1980s, but this association turned negative in the later period.

Recent scholarship also significantly expands our knowledge about the *micro-foundations* of the globalization-welfare nexus. Scheve and Slaughter (2004) prepare the ground by showing that – as compensation theory assumes – globalization increases individuals' perception of economic insecurity. Taking this argument further, Walter (2010b) analyzes the impact of openness on individual social policy and partisan preferences. She shows, supporting compensation theory, how exposure to international competition makes individuals more likely to demand social insurance and that this demand in turn affects partisan choices during elections.

What remains underdeveloped here, however, is the link between individual preferences and policy output (i.e. welfare state generosity and/or spending). Individuals supporting redistribution may be more likely to vote for leftist parties, but whether leftwing parties pick up this demand at all and whether they, once in government, can actually deliver in terms of policies is an entirely different matter. Burgoon (2012) provides some support for the former aspect, finding that leftwing parties place more emphasis on pro-welfare issues when globalization intensifies.

In sum, while we have three rival theories making very clear predictions for the effect of globalization on welfare states, the empirical results are inconclusive on the macro-level. On the micro-level of individual attitudes, support for the compensation argument seems more robust. The latter point, however, should not be mistaken for unequivocal support for the compensation theory as a whole, because its underlying (and often implicit) assumption is that public preferences are in fact related to changes in policy output (Brooks/Manza 2006, 2007; Rehm 2012). The efficiency theory, in contrast, does not claim that reductions in government spending are driven by individual preferences. Instead, the underlying mechanism – though often underdeveloped – models *constraints* on policy-making related to the increased power of business in a globalized world.

Hence, it might well be the case that individuals demand more compensation in reaction to globalization, but that policy-makers are increasingly unable to deliver this because of the very constraints that globalization imposes on them. Governments might be unable to meet the greater demand for welfare spending for two reasons: First, voter preferences in this field might be less important for policy-makers compared to the influence of organized interests (Culpepper 2010). Policy-makers face the voter only every couple of years and even then, the election agenda is typically overcrowded. The contrasting perspective to this is provided by Wlezien (1995) who suggests that policy-makers might be very responsive to popular demands, in particular when a certain issue is suddenly highly salient and receives a lot of public attention (Breunig 2011; Culpepper 2010; Rehm 2012; Soroka/Wlezien 2010).

A second reason why popular demands may not directly translate into policy output is that policy-makers are constrained in their choices, e.g. by globalization. Kittel and Obinger (2003) as well as Kwon and Pontusson (2010) show convincingly that partisan effects on public spending have largely disappeared in the recent period of intensified globalization (at least in countries where labor is weakly organized), which can be interpreted as indirect evidence of the constraining power of economic internationalization.

Thus, by disentangling demand for and supply of public welfare, the apparent contradictions between both theories can be reconciled to a certain extent. Hence, the first contribution of our paper is to emphasize that compensation and efficiency theory are less mutually exclusive than usually assumed. Although this is, at least to us, a very straightforward conclusion, it is not prominent in the literature yet with a few exceptions (Brady et al. 2007; Cerny 1997; Genschel 2004; Hays 2009; Rodrik

1997). Moreover, and much more importantly, it has not been systematically tested yet whether globalization on the one hand increases demand for and on the other hand limits supply of public welfare.

### 3. Demand for compensation and social investment policies

As a second contribution to the literature, we go beyond existing work by exploring the effects of globalization on a crucial policy-aspect that has received surprisingly little attention so far: the role of social investment policies in general and of education policies in particular in cushioning potentially negative effects of globalization. The existing literature on the micro-level implications of compensation theory, primarily Walter (2010b), focuses on support for redistribution in general or more specifically on support for traditional compensatory social policies, especially unemployment benefits. The potentially crucial importance of human capital investment as a political strategy to cope with globalization-pressures is disregarded in these studies. As we show below, there are, however, strong reasons why we should find substantial effects here.

The literature on the political and institutional determinants of educational investments at the macro-level in OECD countries (Ansell 2008b, 2010; Boix 1997, 1998; Busemeyer 2007, 2009b; Castles 1989, 1998; Garritzmann/Seng 2016; Schmidt 2007; Wolf/Zohlnhöfer 2009), in turn, does not analyze economic globalization as a prime independent variable either. Ansell and Busemeyer provide some initial evidence of a positive association between education and trade openness, but the causal mechanisms behind these associations remain underdeveloped and the evidence is not conclusive (cf. also Garritzmann/Seng 2016). The most elaborated contribution in this literature is by Boix (1997, 1998), who argues that globalization triggers a shift in the policies pursued by social democratic governments from Keynesian demand-side policies to supply-side instruments, such as public investments in education<sup>1</sup>.

Moving beyond the existing literature on the effects of globalization on the micro-level of policy attitudes and preferences, we posit that compared to traditional social transfer programs, globalization might have even stronger effects on support for social investment policies, particularly education policy. Whereas unemployment insurance offers compensation for the negative side effects of globalization ex-post, we find it much more likely that individuals might favor a more pro-active approach of insuring against trade-induced labor market risks by means of human capital investments. This is for at least three reasons: First, rather than demanding compensation for globalization-related job-losses, working-age individuals might be interested in upgrading and updating their skills via further training in order to prevent job-loss ex ante.<sup>2</sup> Hence, skill-investment might be preferred as an effective insurance policy against labor market risk compared to ex-post compensation through transfer payments.<sup>3</sup> Secondly, parents can be expected to demand educational investments in order to ensure that their children are able to deal with the challenges of internationalized labor markets. This is particularly likely in the skill-intensive and skill-abundant labor markets of the advanced economies (on which we focus). On the societal level, finally, individuals might believe that expanding and improving their country's stock of human capital is more likely to contribute to continued growth than investing in passive transfer payments – particularly so in the 'age of the knowledge-economy' where public discourses continuously emphasize the (rising) importance of skills.

We hypothesize that the effects of economic globalization percolate from the macro to the micro-level rather than being confined to the micro-level only. To clarify, we argue that differences in

---

<sup>1</sup> There is actually more work on the positive association between globalization and educational investments in the context of developing countries (Ansell 2008a; Benarroch/Pandey 2012; Rudra/Haggard 2005; Stasavage 2005), which is however of limited relevance for the purposes of this paper, since it is mostly concerned with low-income and often non-democratic countries.

<sup>2</sup> As an illustration of the argument, consider how the "Great Recession" has affected (some) people's educational decisions: While systematic studies are still missing, initial evidence on the U.S. shows that the economic downturn increased enrollment in higher education institutions by 6.8 percent (Longmire and Company, Inc. 2008; Mullin/Philippe 2009). While still sketchy and country-specific, this evidence illustrates how economic insecurity, especially fears to lose one's job, creates incentives to re-skill. From here, it is only a small step to reason that globalization, which can have tremendous effects on economic insecurity (Scheve/Slaughter 2004), affects public demand for education.

<sup>3</sup> For a related analysis regarding deindustrialization see Jensen (2011).

(changes in) openness across countries are more important than individual-level exposure to globalization pressures. Individuals in open (opening) economies are expected to demand more social investment on average compared to individuals in closed (closing) economies, independent of whether they themselves work in the sheltered or exposed sector. This logic is somewhat different from Walter's (2010a, 2010b) approach, which identifies the individual's exposure to globalization as a crucial determinant of redistributive preferences. While we see the logic of her argument, we believe that the macro-level context in a given political economy is more important for the reasons outlined above: Even if they themselves are not directly affected by globalization, individuals in open economies will most likely favor social investments in order to maintain the competitiveness of their children and/or the economy as a whole. This is because they might realize that their jobs in sheltered parts of the economy (e.g. in the public sector) ultimately also depend on the competitiveness of the open sectors. Furthermore, individuals in open economies are more likely to demand educational investments for their children since chances are high that they will end up in open sections of the economy later on. Finally, we believe that a too strong focus on individual exposure to globalization underestimates the linkages between individuals in households. In the case of Scandinavian countries, for instance, a typical pattern of labor market segmentation is that women work in the sheltered public sector, whereas men work in the exposed private economy.

Summing up, we make two main claims: First, we extend compensation theory by differentiating between several welfare policies: Rather than demanding higher public spending on compensatory social policies (i.e. unemployment benefits), we expect increases in demand for forward-looking social investments such as education. Second, we question the prevailing argument in parts of the literature that public demand for social policies will more or less automatically be translated into commensurate policy output (Brooks/Manza 2006, 2007; Rehm 2012). Instead, we argue that intensified economic internationalization in recent years has increasingly constrained governments' abilities to react to higher levels of public demand for compensation and social investment.

In order to substantiate these claims empirically, we engage in analyses of individual-level preferences, utilizing survey data, as well as in analyses of policy-output, exploiting public spending data. We begin by testing our arguments on the individual-level and investigate the impact of economic globalization on preferences towards public education and unemployment spending. As a second step, we investigate whether economic globalization affects policy-output and concentrate on public spending as the best comparable operationalization. Here, we apply time-series cross-section analyses of 21 countries between 1995 and 2008, i.e. the period for which comparative high-quality data is available, and compare the effects of globalization on compensatory (unemployment) and social investment (education) spending. We describe the data, methods, and results of these analyses in the respective sections below.

#### **4. Economic globalization and public demand for welfare spending**

##### **4.1 Research design**

The best available data to investigate the theorized relationship between economic globalization and individual-level policy preferences are provided in the International Social Survey Programme "Role of Government IV" dataset for the year 2006 (ISSP Research Group 2006). This dataset contains the following question:

"Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say 'much more', it might require a tax increase to pay for it."

Eight spending areas are then listed. Out of these, we picked *unemployment benefits* as the one that covers the traditional compensation argument best and *education spending* as the ideal-typical social

investment policy. We use each of these in turn as the dependent variable in order to address the question whether the effects of globalization vary across compensatory and investment policies.<sup>4</sup> Respondents have to state their spending preference on a 5-point Likert scale from 1 (spend much more) to 5 (spend much less). We transform this variable into a binary variable in order to simplify the presentation, interpretation, and readability of our results (a 1 indicates a preference for “more” or “much more” spending, whereas a 0 stands for “the same”, “less”, or “much less”). Substantively, it is plausible to assume that respondents will draw a line between a general support for spending increases, on the one hand, and indifference or a preference for lower spending, on the other. Empirically, however, we also tested other, non-dichotomized categorizations (see Section 4.3 below). We use multi-level logit models with country-clustered standard errors to estimate the association between economic globalization and attitudes. In the robustness section, we discuss alternative model specifications and operationalizations of the core dependent and independent variables in greater detail.

We focus on one operationalization of economic globalization in the main analysis, i.e. TRADE OPENNESS, defined as the sum of exports and imports as percent of GDP. Previous studies have shown that this measure has the strongest impact on social spending compared to alternative measures of economic globalization such as the flow of foreign direct investments (FDI), imports from low-wage countries, or aggregated indices such as the KOF index of globalization (Dreher 2006). Nevertheless, we also test alternative indicators of globalization in the robustness section, in order to see whether different ‘faces’ of globalization affect attitudes differently.

We include a number of micro-level control variables (Table A in the Online-Appendix presents summary descriptive statistics). INCOME, given in country-specific income deciles, is expected to be negatively associated with support for public spending (Meltzer/Richard 1981) as the wealthy dislike (paying higher taxes for) redistributive spending. With regard to education, however, the effect of income is less straightforward, because the redistributive effects of education are more complex and unclear compared to other kinds of social policies (Ansell 2008; Busemeyer 2012; Garritzmann 2015). The same applies to the impact of EDUCATIONAL BACKGROUND: Usually, education has a negative effect on support for redistribution. In the case of education, however, the effect might be positive, because better-educated individuals recognize the value of educational investments for individual and societal progress. WOMEN are expected to be more supportive of public spending in general (Svallfors 1997), although the exact causal mechanisms are still unexplored. The impact of AGE on support for social spending depends on the policy in question. Whereas the association should be positive for spending on old-age pensions and health (Busemeyer et al. 2009; Jensen 2014) and potentially unemployment, we expect a negative association for the case of education since older people do not benefit directly from increasing educational investments. Moreover, we model the effect of age in a non-linear fashion (including a squared term) to account for the fact that the effect of age might change for higher values.

Furthermore, it is important to control for whether a respondent has CHILDREN currently in education. Unfortunately, the ISSP does not include this information. As a remedy, we include a dummy for respondents who live in a single- or two-person household, which we use as a proxy for “not living with children”. While this operationalization is rather indirect, it will – if anything – *underestimate* the theorized effect, because respondents might live in a single- or two-person household because their children moved out to study. We also tried other operationalizations, which all led to the same results (see robustness section). Finally, using the definitions supplied by the ISSP

---

<sup>4</sup> As additional robustness tests, we also analyzed attitudes towards health care spending as a second-best operationalization of compensatory policies and a question on whether respondents think that it is the government’s responsibility to “create jobs” as an additional, albeit rough measure of social investment (active labor market policies). While the results (available on request) are in line with the findings reported here (i.e. globalization increases demand for ALMPs but not for health care), we do not report these for reasons of limited space and for theoretical reasons: Health care spending is a less clear-cut example of a compensatory policy than unemployment benefits. Moreover, the “government should create jobs”-question is not ideal, because it is not directly related to spending and because it does not unequivocally operationalize ALMPs (it could, e.g., equally be perceived to measure Keynesianist attitudes or simply demand for more state action). Thus, we focus on unemployment benefits and education spending in the main analysis.

data, we include categorical measures for LABOR MARKET STATUS.

In addition to these control variables, we also tested the impact of several other rival explanations, e.g., respondents' ideological position, respondents' preferences towards public spending in general, and an occupation-based estimation of respondents' risk of becoming unemployed due to globalization (Blinder's (2007) and Walter's (2010a) "offshore-ability-index"). We discuss these in the robustness section below; here, it suffices to say that the inclusion of these variables does not alter the main findings.

On the macro-level (countries), we control for existing levels of socio-economic INEQUALITY (net Gini index; Solt 2009) because this has consistently been argued and found to affect preferred spending levels. We expect that higher levels of inequality are associated with more demand for public spending in line with Meltzer and Richard (1981) and Finseraas (2009). Furthermore, a well-known problem with the specific wording of the used ISSP questions is that they do not take into account existing cross-country differences in the status quo of public spending. Respondents are asked about their preferences for "more" or "less" spending, but not about the preferred absolute spending amount. As is argued by Soroka and Wlezien (2010; Wlezien 1995), existing expenditure levels can, however, trigger *negative* feedback effects, i.e. citizens are less likely to support further increases when spending is already high (and vice versa). Therefore, we also include the level of PUBLIC SPENDING in the respective field as a macro-level control variable.

A vexing problem in the analysis of the micro-macro linkages between policy preferences and output is endogeneity, i.e. estimating to which degree policies affect preferences and how, in turn, preferences shape policy output. One possibility to solve the problem of endogeneity is to analyze the reciprocal interaction between preferences and output for individual country cases *over time* (as is done, for example, for three countries by Soroka and Wlezien (2010)) or to analyze exogenous shocks in natural experimental designs. Unfortunately, however, these approaches are much less feasible for broad cross-national comparisons, because due to limited data availability there is essentially a trade-off between the number of cases that can be included in cross-sectional comparisons and the length of the time period under observation. The number of countries that participated in earlier *Role of Government*-waves is much smaller than in the current wave. Even in the 2006 wave, which is used in the present paper, the number of countries for which we have data on the important independent variables on the macro-level is only 17.<sup>5</sup>

The established pragmatic solution to the endogeneity problem that we adopt here is to lag the core macro independent variables by five years: As the fieldwork for the survey was conducted in 2005/06, we use data on economic globalization, inequality, and public spending in the respective fields from the year 2000. The time window of five years is, of course, arbitrary, but it is quite plausible to assume that changes in macro-level contexts will take some time to affect preferences. As a first robustness check, we used the 5-year average (2000-2004) in trade openness instead and found similar results. As a second test, we included values for the year 2005 (i.e. the year the survey was conducted) and did *not* find a significant association, which – while not being a strong causation test – gives us confidence in our argument about the direction of causality.

## 4.2 Results: Demand for compensation and investment

Tables 1 and 2 present findings of multilevel logit regressions with standard errors clustered by country.<sup>6</sup> In Table 1, we focus on *education* spending and investigate the determinants of individual-level support, whereas in Table 2 we analyze determinants of support for unemployment spending.

Of crucial importance for the argument of this paper is the impact of trade openness on individual-level support for welfare spending. When included as the only macro variable (Table 1, model 1), the 5-year lagged level of trade openness has a positive effect on individual-level support for public education spending, but this effect is not statistically significant at conventional levels. As model 2 shows, however, the effect turns significant as soon as we control for the level of inequality in a

---

<sup>5</sup> Australia, Canada, Denmark, Finland, France, Germany, Ireland, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Great Britain, United States.

<sup>6</sup> All estimations were conducted using Stata 13.



country. This indicates that inequality works as a “negative confounder” on the association between trade openness and preferences. Once this is accounted for, the effect of trade openness is very robust. The association remains robust when including the status quo in public education spending (model 3). Models 4 through 6 lend support to our proposition that the causal effect points from institutions to preferences and not the other way around, because the effects turn insignificant when we do not use the lagged (2000) but the contemporary (2005) levels of macro-variables.

The magnitude of the effect is sizable: Simulating, on the basis of model 2, an increase in trade openness from the country with the lowest values (Japan, 21 percent of GDP) to the most open economy (Ireland, 184 percent of GDP), while holding the controls at their means, is associated with an increase in support for education spending from about 64 percent to 86 percent. Put differently, increasing trade openness by one standard deviation (i.e. 33 percent) above the mean (72 percent) increases public demand by slightly more than one standard deviation (i.e. to 76 percent). The 95-percent confidence interval ranges from 73 to 81 percent. A similar increase in *inequality* by one standard deviation above the mean (i.e. from 30 to 34 percent), is associated with an increase in demand for education spending from 72 to 81 percent (the 95-percent confidence interval ranges from 76 to 86 percent), i.e. by almost two standard deviations. Thus, the effect of trade openness on individual support for more education spending is considerable, but inequality seems to have an even bigger effect.

Turning to demand for unemployment benefits (Table 2), another important finding emerges: It is *not* the case that trade openness significantly increases individual-level support for unemployment benefits. The coefficient is positive, but the effect is not significant (in contrast to the one for education). This is puzzling from the perspective of compensation theory since unemployment benefits have been argued to be of great immediate relevance for employees, especially in times of economic insecurity. As the results presented in Table 2 show, however, there is no significant relationship between trade openness and support for more spending on unemployment. This finding holds irrespective of whether we include trade openness as the only determinant (Table 2, model 7) or in addition to inequality and/or levels of public unemployment spending and irrespective of whether we use time-lagged or simultaneous variables (models 8-12).

In sum, the findings challenge ‘classical compensatory theory’ but are strongly supportive of our social-investment argument: Instead of increasing demand for ex-post compensation, globalization boosts demand for forward-looking social investments such as education.

The control variables perform largely as expected and confirm previous research (Ansell 2010; Busemeyer 2012; Busemeyer et al. 2009): The determinants of support for education spending differ from support for other kinds of social policies in important ways: Income and educational background decrease support for increased spending on unemployment, as would be expected from the Meltzer-Richard (1981) model, but do *not* have a statistically significant impact on support for public education spending. In line with previous research, this underlines that the (re-)distributional dynamics of education spending are less straightforward compared to other social policy fields.

A similarity between support for education and unemployment spending is the non-linear effect of age: Individuals initially tend to be more supportive of social spending, but this levels out in old-age. The magnitude of the squared term is, however, quite small. Women are less supportive of unemployment spending, but no effect appears for education. Respondents working part-time or less hold similar preferences to full-time workers. Not surprisingly, students and pupils are more supportive of increased spending on education, whereas unemployed persons favor spending on unemployment. Respondents living in a one- or two-person household (our proxy for having no children) are less likely to favor education spending, but support more spending on unemployment. Overall, therefore, the micro-level controls perform in line with our expectations.

On the macro-level, confirming Finseraas (2009) and the general logic of the Meltzer-Richard (1981) model, high levels of socio-economic inequality increase individual-level support for more education and more unemployment spending. In the latter case, however, the effect is only significant in a few models. Model 3 and 9 include levels of public spending in the respective field to test the “thermostat model” (Soroka/Wlezien 2010). But the coefficients fail to reach conventional levels of statistical significance.

In sum, the empirical analyses support our expectations: Respondents in countries exposed to higher trade openness demand more public education spending. Moreover, we do not find any effect on demand for unemployment compensation. To underpin these findings, we now turn to a variety of robustness checks.

Table 1: Determinants of individual-level support for more public education spending in 17 countries in 2005/06, multilevel logit model

	(1)	(2)	(3)	(4)	(5)	(6)
Individual-level variables						
Income	-0.0086 (0.0106)	-0.0088 (0.0105)	-0.0085 (0.0105)	-0.0085 (0.0106)	-0.0086 (0.0105)	-0.0082 (0.0105)
Female	0.0487 (0.0377)	0.0486 (0.0377)	0.0491 (0.0377)	0.0487 (0.0377)	0.0486 (0.0377)	0.0494 (0.0377)
Education years	0.0269*** (0.0051)	0.0269*** (0.0051)	0.0269*** (0.0051)	0.0269*** (0.0051)	0.0270*** (0.0051)	0.0269*** (0.0051)
Age	0.0224*** (0.0069)	0.0226*** (0.0069)	0.0226*** (0.0069)	0.0224*** (0.0069)	0.0225*** (0.0069)	0.0225*** (0.0069)
Age (squared)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)
No children	-0.2491*** (0.0395)	-0.2478*** (0.0395)	-0.2474*** (0.0395)	-0.2490*** (0.0395)	-0.2474*** (0.0395)	-0.2467*** (0.0395)
Part-time	0.0915 (0.0634)	0.0911 (0.0633)	0.0910 (0.0633)	0.0917 (0.0634)	0.0919 (0.0634)	0.0917 (0.0634)
Less than part-time	0.0650 (0.0662)	0.0649 (0.0662)	0.0647 (0.0661)	0.0652 (0.0662)	0.0638 (0.0662)	0.0634 (0.0662)
Unemployed	0.0174 (0.1051)	0.0192 (0.1051)	0.0196 (0.1051)	0.0176 (0.1051)	0.0169 (0.1051)	0.0173 (0.1051)
In education	0.4388*** (0.1355)	0.4401*** (0.1355)	0.4412*** (0.1355)	0.4392*** (0.1355)	0.4397*** (0.1355)	0.4408*** (0.1355)
Retired	0.0382 (0.0709)	0.0410 (0.0709)	0.0414 (0.0709)	0.0384 (0.0709)	0.0379 (0.0709)	0.0387 (0.0709)
Country-level variables						
Trade openness (2000)	0.0032 (0.0043)	0.0082** (0.0033)	0.0078** (0.0033)			
Inequality (2000)		0.1120*** (0.0284)	0.1016*** (0.0312)			
Public education spending (2000)			-0.1149 (0.1544)			
Trade openness (2005)				0.0020 (0.0050)	0.0037 (0.0042)	0.0046 (0.0041)
Inequality (2005)					0.1074*** (0.0386)	0.0800* (0.0427)
Public education spending (2005)						-0.2246 (0.1762)
Constant	-0.0914 (0.3995)	-3.8019*** (0.9947)	-2.8797* (1.5793)	0.0062 (0.4352)	-3.2024*** (1.2129)	-1.3443 (1.8629)
Model fit						
Log likelihood	-9751.683	-9746.1459	-9745.8737	-9751.8834	-9748.6865	-9747.9104
Rho (macro-level variance)	.1113	.0606	.0587	.1136	.0803	.0737
LR-test rho	1247.26	663.60	595.91	1250.81	797.09	688.99
N (individual-level)	17,394	17,394	17,394	17,394	17,394	17,394
N (country-level)	17	17	17	17	17	17

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standard errors in parentheses. Log likelihood (empty model): -10,957.039

Table 2: Determinants of individual-level support for unemployment spending in 17 countries in 2005/06, multilevel logit model

	(7)	(8)	(9)	(10)	(11)	(12)
Individual-level variables						
Income	-0.2011*** (0.0138)	-0.2011*** (0.0138)	-0.2013*** (0.0138)	-0.2011*** (0.0138)	-0.2011*** (0.0138)	-0.2011*** (0.0138)
Female	-0.0763* (0.0408)	-0.0763* (0.0408)	-0.0764* (0.0408)	-0.0763* (0.0408)	-0.0763* (0.0408)	-0.0763* (0.0408)
Education years	-0.0339*** (0.0055)	-0.0339*** (0.0055)	-0.0339*** (0.0055)	-0.0339*** (0.0055)	-0.0339*** (0.0055)	-0.0339*** (0.0055)
Age	0.0364*** (0.0074)	0.0365*** (0.0074)	0.0365*** (0.0074)	0.0364*** (0.0074)	0.0365*** (0.0074)	0.0364*** (0.0074)
Age (squared)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)
No children	0.1410*** (0.0431)	0.1414*** (0.0431)	0.1416*** (0.0431)	0.1409*** (0.0431)	0.1418*** (0.0431)	0.1419*** (0.0431)
Part-time	-0.0065 (0.0687)	-0.0071 (0.0687)	-0.0069 (0.0687)	-0.0064 (0.0687)	-0.0068 (0.0687)	-0.0061 (0.0687)
Less than part-time	0.2118*** (0.0694)	0.2119*** (0.0694)	0.2117*** (0.0694)	0.2120*** (0.0694)	0.2110*** (0.0694)	0.2111*** (0.0694)
Unemployed	1.0701*** (0.1012)	1.0704*** (0.1011)	1.0697*** (0.1011)	1.0702*** (0.1012)	1.0694*** (0.1011)	1.0684*** (0.1011)
In education	-0.0901 (0.1502)	-0.0893 (0.1502)	-0.0889 (0.1502)	-0.0900 (0.1502)	-0.0894 (0.1502)	-0.0880 (0.1502)
Retired	-0.1388* (0.0765)	-0.1379* (0.0765)	-0.1384* (0.0765)	-0.1388* (0.0765)	-0.1390* (0.0765)	-0.1402* (0.0765)
Country-level variables						
Trade openness (2000)	0.0050 (0.0052)	0.0077 (0.0053)	0.0082 (0.0052)			
Inequality (2000)		0.0614 (0.0452)	0.0895* (0.0526)			
Public unemployment spending (2000)			0.2914 (0.3000)			
Trade openness (2005)				0.0052 (0.0061)	0.0065 (0.0057)	0.0038 (0.0057)
Inequality (2005)					0.0830 (0.0526)	0.1016** (0.0511)
Public unemployment spending (2005)						0.3729 (0.2513)
Constant	-1.4153*** (0.4758)	-3.4486** (1.5665)	-4.6549** (1.9656)	-1.4134*** (0.5179)	-3.8909** (1.6455)	-4.6615*** (1.6357)
Model fit						
Log likelihood	-8497.4426	-8498.479	-8499.6412	-8498.2138	-8498.6723	-8499.5441
Rho (macro-level variance)	.1265	.1407	.1584	.1362	.1430	.1568
LR-test rho	1062.02	1254.23	1493.56	961.92	1129.89	1454.96
N (individual-level)	17,142	17,142	17,142	17,142	17,142	17,142
N (country-level)	17	17	17	17	17	17

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standard errors in parentheses. Log likelihood (empty model): -9950.3566

### 4.3 Robustness

In order to corroborate our results, we conduct a number of robustness tests. Due to space limitations, we report only those for preferences over education spending, in which we are mainly interested. The reported results for unemployment spending are equally robust and available on request. First, we check whether our results depend on the inclusion or exclusion of certain control variables by estimating models with different combinations of variables and additional control variables. For instance, we include respondents' party affiliations, their general preferences towards public spending, and an occupation-based estimation of the likelihood of future job-loss ("offshore-ability index"). As could be expected (Ansell 2010; Garritzmann 2015), LEFT-WING VOTERS favor more public education spending while RIGHT-WING VOTERS prefer less spending (Table 3, models 1a, 2a, 3a). We abstain from including partisan variables in the main analyses above, however, as this considerably decreases the number of cases due to missing values and because additional problems of endogeneity occur (partisan identification is also associated with the other control variables in the model). However, including party affiliation does *not* alter the reported main results.

Furthermore, one might argue that respondents' preferences towards *education* spending might be partially explained by their PREFERENCES TOWARDS PUBLIC SPENDING IN GENERAL. While the fact that the effects of openness on preferences differed across policy-fields already puts some doubt on this, we nevertheless include a variable covering whether respondents think that government spending should be cut. Not surprisingly, those who favor retrenchment also favor cuts in education spending (Table 3, models 1b, 2b, 3b). More importantly, however, the reported results remain unaffected. Hence, we exclude this general spending variable, because of the theoretical and statistical complexities resulting from 'explaining attitudes with attitudes'. In more general terms, multicollinearity does not affect our results, because the main effects remain robust irrespective of the variable selection and because the correlations between the included variables are relatively low.<sup>7</sup> Finally, we also try to control for respondents' exposure to globalization on the individual-level by utilizing Blinder's (2007) "OFFSHORE-ABILITY INDEX", which has been commonly used in the literature. The index tries to capture a job's *potential* to be offshored. Blinder estimates this potential by rank-ordering occupations based on whether workers need to be present at a specific work location or not. This rank-ordered information is then transformed into a four-category variable, which is interpreted as the likelihood of future globalization-related job-loss. Walter (2010a) transfers Blinder's index from its U.S.-focus to a comparative context utilizing respondents' 4-digit ISCO-codes as provided in the ESS-data. We apply this index to our ISSP-data, to control for within-country effects of globalization.

Nevertheless, we abstain from including it in the main analysis for theoretical and methodological reasons. Theoretically, we are interested in the *macro-level association* between economic globalization and public demand for welfare policies. Thus, as discussed above, we are interested in macro-level effects and hypothesize that these hold irrespective of whether we control on individual-level exposure or not. Moreover, the offshore-ability index is methodologically somewhat questionable: First, the rank-ordering and categorization of occupations is rather arbitrary, and second, it is based on the U.S.-case only and assumes effect-homogeneity across countries. Furthermore, the resulting variable is heavily right-skewed: Across all countries three-quarters of all workers are coded as entirely sheltered; on average only six percent are found in the highest offshore-category. In some countries (e.g., in Canada, Finland, or France) even 98 percent of the population are coded as being employed in jobs with no offshore-potential.<sup>8</sup> If only a minority is directly affected by globalization as this data claims, however, it is hard to imagine how this minority could be responsible for the large degree of public support in favor of social investment policies.

Nevertheless, we include the offshore-ability index despite these shortcomings both in addition to and instead of the labor market status variables to test the robustness of our results. The

---

<sup>7</sup> Many correlations (Spearman resp. Pearson) are below 0.4, most below 0.1. The highest correlations were obviously detected between age and age-squared, and between age and the retirement-dummy. We tested these separately and the effects remained robust.

<sup>8</sup> In the French case, this might (partly) be due to the fact that a different occupation-coding scheme is applied. For Canada and Finland, however, no obvious explanation for the skew is apparent and the index remains questionable when applied to ISSP-data.

reported results remain unaffected: Trade openness on the macro-level is still found to increase demand for education, but not for unemployment spending. Moreover, the individual offshore-potential does *not* have a significant effect on respondents' attitudes towards education spending (Table 3, models 1c, 1d, 1e). The same finding holds when we exclude those countries with the heaviest right-skew (Canada, Finland, France).

In addition to these supplementary micro-level controls, we also test Iversen's (2001) and Iversen and Cusack's (2000) claim that it is DEINDUSTRIALIZATION rather than globalization that alters governments' (and we deduce: individuals') preferences by including the level (or 5-year change) in deindustrialization. However, neither levels of nor changes in deindustrialization show significant effects in either model as soon as we control for inequality (Table 3, models 2d, 3d, 2e, 3e), and only weakly significant results when deindustrialization is included as the only macro variable (Table 3, models 1d and 1e). Most importantly, the effect of trade openness remains unaffected by these changes. In sum, the findings underpin that the results are not driven by the selection of variables and robust to including other controls.

Table 3: Testing rival explanations by including additional control variables.

*Note: The following table summarizes results of 15 separate models. The models replicate models 1 through 3 of Table 1 and include additional control variables. To keep the table readable, we only present results for the variables of interest here.*

	(1a)	(2a)	(3a)
Respondent voted for a left party	0.3216*** (0.0486)	0.3284*** (0.0486)	0.3292*** (0.0486)
Respondent voted for a right party	-0.1917*** (0.0476)	-0.1851*** (0.0476)	-0.1850*** (0.0476)
	(1b)	(2b)	(3b)
Government should cut spending	-0.1212*** (0.0162)	-0.1211*** (0.0162)	-0.1212*** (0.0162)
	(1c)	(1d)	(1e)
"Offshore-ability index" (Blinder & Walter)	0.0126 (0.0197)	0.0133 (0.0197)	0.0133 (0.0197)
	(1d)	(2d)	(3d)
Level of deindustrialization (2000)	-4.0502* (2.4209)	-2.2313 (2.2386)	-2.1467 (2.1781)
	(1e)	(2e)	(3e)
Change in deindustrialization (2005-2000)	16.1718 (14.2727)	-0.4532 (13.9640)	0.9208 (13.6325)

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standard errors in parentheses.

Second (and besides the inclusion of additional controls), we check whether our results are sensitive to the inclusion of survey weights, or whether they are biased by possibly systematic patterns of missing values. The results (available on request) remain unaltered. Third, we test different operationalizations of globalization to investigate whether the results depend on our focus on trade openness. To begin with, we use foreign direct investment (FDI inwards only, outwards only, and total) (Table 4). Using total FDI as well as inward FDI clearly confirms the reported results: The higher the total or inward FDI, the higher the demand for public education spending (Table 4, models 1f, 2f, 3f, 1g, 2g, 3g). *Outward* FDI, in contrast, is only significant when we do not control for inequality and does not seem to have a robust effect (Table 4, models 1h, 2h, 3h). This seems reasonable because inward FDI is a lot more visible for respondents than outward FDI, although it is ironically mostly the latter that might put them under economic pressure. Moreover, we also use an index for the extent of

openness in capital account transactions (Armingeon et al. 2012). But as the variable shows hardly any variance across space and time for our sample (see Table A in the Online-Appendix) it is not surprising that we do not observe any effect (Table 4, models 1i, 2i, 3i).

Table 4: Testing alternative operationalizations of globalization.

*Note: The following table summarizes 15 separate models, replicating models 1 through 3 of Table 1. Instead of “trade openness”, alternative operationalizations are used. To keep the table readable, we only present results for the variables of interest here. (In models 1j, 2j, and 3j, we use changes in inequality and education spending instead of levels.)*

	(1f)	(2f)	(3f)
FDI total (2000)	-0.0061 (0.0144)	0.0239* (0.0142)	0.0228* (0.0139)
	(1g)	(2g)	(3g)
FDI inwards (2000)	0.0222 (0.0234)	0.0528*** (0.0175)	0.0506*** (0.0179)
	(1h)	(2h)	(3h)
FDI outwards (2000)	-0.0367* (0.0215)	-0.0062 (0.0242)	-0.0032 (0.0238)
	(1i)	(2i)	(3i)
Capital account transaction “kaopen” index (2000)	-0.3243 (0.5036)	-0.1904 (0.4213)	-0.1481 (0.4124)
	(1j)	(2j)	(3j)
Change in trade openness (2000-2005)	0.0251 (0.0153)	0.0258* (0.0150)	0.0241 (0.0153)

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standard errors in parentheses.

Furthermore, we also test whether *changes* in trade openness instead of levels have an effect by using five-year differences. In two models (Table 4, models 1j and 3j), the change in trade openness slightly misses conventional significant levels (it is significant at an 11-percent level), while it is significant at a 10-percent level in model 2j. Substantially, this indicates that not only the levels, but also the changes in trade openness influence demand for public education spending: That is, the more a country opened in terms of trade during the last five years before the survey, the larger the respondents’ demand for education spending. This is strong additional proof for our claims.

Finally, we *simultaneously* include the level of trade openness and the respective FDI measures, as it might be the case that they have distinct independent effects on attitudes because they cover different aspects of globalization. However, due to the rather high correlations between these measures, it is unsurprising that the significance levels drop slightly, while the reported effect sizes remain similar (results on request). In sum, we feel confident to conclude that the results do not seem to be driven by a specific operationalization of globalization, but are observable for different measures covering several facets of globalization.

Fourth, to make sure that the results are not driven by our decision to dichotomize the dependent variable, we use a different coding and dichotomize between those who are “strongly in favor” and all other respondents. Again, the presented findings hold, but the discriminating power of some variables is lower, i.e. the effect of trade openness remains highly similar, but suffers a slight loss in significance and size (results on request).

Furthermore, we use different estimation techniques: While the theoretically most suitable models (multilevel ordered logit) do, unfortunately, not converge in several cases due to the heavy left-skewedness of the data in some countries (as discussed above), we use *single-level* ordered logit models with clustered standard errors instead. Moreover, as the core assumption of ordered logit models, the proportional lines assumption (i.e. that the effect of the independent variables is constant for each answer category of the dependent variable), was violated in some cases, we also estimate “partial proportional odds models” (Williams 2006). In the Online-Appendix (Table C), we present and discuss these models and the findings in-depth. For the present purpose it suffices to summarize that the effect of trade openness remains robust: The coefficients of the openness variable are positive and significant for all answer categories, indicating that trade openness has a linear positive effect on education spending preferences.<sup>9</sup> Thus, the results are not driven by our decision to dichotomize the dependent variable. Furthermore, the same findings occurred when using probit or multinomial models.

In sum, the theorized effect of globalization on demand for public spending seems highly robust as it holds for different variable selections, different operationalizations of globalization, and across different model specifications, and is not affected by missing values or the inclusion of survey weights. This gives us confidence that the reported results are robust and reliable. We now turn from the demand-side to the supply-side of our argument.

## 5. Economic globalization and public spending on the macro-level

In the previous section, we analyzed the impact of economic globalization on individual-level preferences for increasing public unemployment and education spending. We found that trade openness is associated with higher demand for social investment spending (education), but not for compensatory policies (unemployment). Thus, as theorized, investments in education might play a larger role in the compensation argument than previously assumed. We now turn towards testing our second claim that while globalization might increase demand on the individual-level, this demand does not automatically transfer into policy-output. Hence, it is necessary to turn to the macro-level association between openness and actual policy output, i.e. here – for reasons of comparability – spending.<sup>10</sup>

### 5.1 Research design

One way of assessing the impact of public preferences on policy output is to include measures of public opinion as independent variables in regressions of public spending (Brooks/Manza 2006, 2007; Rehm 2012; Soroka/Wlezien 2010). This is feasible when studying the link between globalization and *social* spending, because macro-level data from the OECD are available from the early 1980s on. When analyzing *education* spending, however, one problem is that before the mid-1990s, there were significant problems with regard to the quality and comparability of spending data (Heidenheimer 1996). Therefore, as we could not use lags for our independent variables, it does not seem advisable for the present paper to pursue an approach like Brooks and Manza (2006, 2007) who merge ISSP data with aggregate data on spending for a longer time period. Moreover, time-series individual-level data on education spending preferences is unavailable (an earlier ISSP-wave includes only a few countries).

Instead, we directly investigate the macro-level association between trade openness and education spending (Table 5) as well as unemployment spending (Table 6) in time-series cross-section (TSCS) regressions utilizing annual public spending data. This is admittedly an imperfect solution, because it assumes that public demand will be the crucial mechanism that links trade openness and spending. But since we control for many other potential mechanisms in the regressions, this assumption seems defensible given the data limitations.

---

<sup>9</sup> To be precise, the effect decreases slightly in size over the answer categories, indicating that trade openness decreases opposition to additional spending more drastically than it increases support.

<sup>10</sup> For some policy-fields, one could also probe other operationalizations, e.g., measures of generosity of benefits. Yet, as generosity measures are in-existent and unconvincing for education policies, public spending offers the most comparable policy-output measure.

In Table 5, we look at education spending and use two different dependent variables: total public education spending and total public tertiary education spending (both as a share of GDP). We add tertiary education spending, as it could be expected that the association between tertiary education spending and economic globalization is tighter than the association between spending on all levels of education and globalization, because tertiary education is closer to the labor market needs of employees aiming at upgrading their skills (unfortunately, more specific data on “further education” is not available).

Table 6 presents analyses of the impact of trade openness on unemployment benefits as the prime example of traditional compensatory social policies.

As data was available for 21 countries, we use a slightly larger country sample than in the micro-level analyses above (additionally including Austria, Belgium, Finland, and Greece). To ensure that the results are not driven by the country selection, we re-run all models with the limited sample of those 17 countries included above. As the results for the variables of theoretical interest are the same and those for the control variables very similar (results on request), we report the model with the larger country-sample to widen the scope of the analysis and the power of the estimations. We include all years for which data on public education spending on all levels and on higher education spending was available, i.e. 1995-2008.

Again, we face a problem of endogeneity. As an imperfect, but common-practice solution, independent variables are lagged by one year (we also test different lag-structures in the robustness section below). This seems preferable here to instrumental variable (IV) regressions, since convincing and valid instruments are hard to find in the case of analyses of country-level aggregate data. As the methodological debate in the TSCS literature is still ongoing and has not agreed on a ‘best estimation technique’, we present results of several model specifications for each dependent variable: generalized least squares (GLS) models with an AR(1) correction for serial correlation in the error term, models that include a lagged dependent variable, and models with country fixed effects. All models use panel-corrected standard errors to correct for contemporaneous correlation among units and unit-specific heteroskedasticity (Beck/Katz 1995).

Besides trade openness, we include a set of common controls (Table B in the Online-Appendix contains operationalizations and descriptive statistics): The CABINET SHARE OF LEFT PARTIES is expected to have a positive effect on education spending and on welfare spending (Ansell 2010; Busemeyer 2007; Schmidt 2007). The population SHARE OF THE ELDERLY, in contrast, is hypothesized to have a negative coefficient, since older people – as the reported results above underlined – are less likely to support education spending (Busemeyer et al. 2009). DEINDUSTRIALIZATION (i.e. the share of employment in the service sector) has been identified as a major determinant of increasing social spending (Iversen 2001; Iversen/Cusack 2000) and is therefore likely to be associated with higher levels of education spending as well. Finally, we include a measure of the SIZE OF THE PUBLIC SECTOR (public spending as percentage of GDP), which is obviously also expected to have a positive coefficient.

## 5.2 Findings

We first focus on determinants of education spending and then turn towards unemployment benefits. In our first two models on education spending (Table 5, models A and B), the control variables perform largely as expected: A large public sector and high levels of service-sector employment are positively and significantly associated with public education spending. In contrast, a larger population share of the elderly has a negative effect. We do not find evidence for significant short-term partisan effects. This is in line with previous research emphasizing the long-term impact of partisan power over its short-term consequences (Busemeyer 2007) but might also have methodological reasons as we use annual observation data – because globalization can change on a yearly basis – and not government-terms as the unit of analysis (Garrizmann/Seng 2016). Moreover, most control variables do not show coherent effects across model specifications, casting doubt on the robustness of the effects. Including lagged dependent variables (model C and D) or fixed effects (models E and F) causes many variables to turn insignificant.



Most importantly for the argument of this paper, trade openness does *not* have a robust effect on public education spending: In most of the models, there is no significant association between openness and education spending. We find a significant, positive association only when we focus on tertiary education spending and a specific model specification (using AR(1) instead of a lagged dependent variable) (Table 5, model B). In model 5, the estimate even turns *negative* – but is not statistically significant.

In sum, trade openness does *not* seem to have a robust effect on education spending, neither a positive one (as theorized by compensation theory), nor a negative one (as theorized by efficiency theory) (for a similar assessment for a country sample of 119 developed and developing countries see also Benarroch and Pandey (2012)).

For the case of unemployment benefits the compensation argument would lead us to expect a strong positive association: Higher levels of openness should be associated with higher levels of spending, because job-loss compensation is immediately relevant for workers exposed to the vagaries of international markets. Table 6 suggests, however, that the effect of trade openness on public unemployment benefits is *negative*: The signs of the coefficients are always negative, indicating that – in contrast to compensation theory but in line with efficiency theory – globalization decreases unemployment spending. The estimation are, however, only significant once we include country fixed effects (Model I). That is, only when focusing on within-country variation do we find that countries opening up their economies on average also decrease unemployment spending. This supports one of our central arguments: Even if globalization increases the demand for some welfare spending, it might simultaneously constrain governments' capacity to fulfill these demands, as the demands are not automatically met.

Table 5: Determinants of public education spending (as percentage of GDP), 1995-2008, 21 democracies

	all levels (A)	higher education (B)	Public education spending on...		all levels (E)	higher education (F)
			all levels (C)	higher education (D)		
Lagged educ. spending, all levels			0.9546*** (0.0274)			
Lagged educ. spending, higher education				0.9144*** (0.0302)		
Trade openness (t-1)	0.0028 (0.0018)	0.0017** (0.0009)	0.0001 (0.0004)	0.0002 (0.0003)	-0.0019 (0.0035)	0.0018 (0.0016)
Cabinet share left parties (t-1)	0.0012 (0.0008)	-0.0001 (0.0002)	0.0006 (0.0003)	0.0001 (0.0001)	0.0009 (0.0006)	0.0001 (0.0002)
Population share of elderly (t-1)	-0.0855*** (0.0278)	-0.0372*** (0.0114)	0.0033 (0.0066)	0.0011 (0.0038)	-0.0319 (0.0199)	0.0070 (0.0095)
Deindustrialization (t-1)	1.8344* (0.9688)	1.0061*** (0.3093)	-0.0568 (0.2073)	0.0295 (0.0969)	-1.3858 (1.3880)	-0.1840 (0.5293)
Total public spending (t-1)	0.0424*** (0.0080)	0.0115*** (0.0029)	0.0014 (0.0023)	0.0017* (0.0009)	0.0376*** (0.0087)	0.0089*** (0.0030)
Constant	3.0294*** (0.8916)	0.3492 (0.2928)	0.1096 (0.1947)	-0.0342 (0.0911)	4.5397*** (0.9125)	0.7071** (0.3428)
Method dealing with serial correlation?	AR(1)	AR(1)	LDV	LDV	AR (1)	AR (1)
Country fixed-effects?	No	No	No	No	Yes	Yes
R <sup>2</sup>	0.77	0.49	0.93	0.90	0.88	0.71
Observations	373	372	371	369	373	372
Number of countries	21	21	21	21	21	21

Panel-corrected standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 6: Determinants of public spending on unemployment benefits (as percentage of GDP), 1995-2008, 21 democracies.

	(G)	(H)	(I)
Lagged unemployment spending		0.9593*** (0.0254)	
Trade openness (t-1)	-0.0007 (0.0027)	-0.0004 (0.0005)	-0.0103*** (0.0036)
Cabinet share left parties (t-1)	-0.0004 (0.0006)	-0.0000 (0.0003)	-0.0001 (0.0005)
Population share of elderly (t-1)	-0.0636** (0.0268)	-0.0040 (0.0078)	0.0039 (0.0223)
Deindustrialization (t-1)	0.4668 (1.0356)	-0.5430*** (0.2061)	-1.0725 (1.1726)
Total public spending (t-1)	0.0619*** (0.0095)	0.0028 (0.0021)	0.0689*** (0.0093)
Constant	-0.8096 (0.9012)	0.3573* (0.1902)	-0.3063 (0.8363)
Method dealing with serial correlation?	AR(1)	LDV	AR(1)
Country fixed-effects?	No	No	Yes
R <sup>2</sup>	0.35	0.95	0.78
Observations	377	376	377
Number of countries	21	21	21

Panel-corrected standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### 5.3 Robustness

In order to underpin these findings, we run several robustness checks; again we only report those for education spending for reasons of limited space – the results for unemployment spending are similarly robust and available on request. First, we test alternative operationalizations of globalization (as above: FDI outwards, FDI inwards, total FDI, and the capital account openness index). All indicators confirm the reported findings: Economic globalization, irrespective of the operationalization, does not seem to have a robust effect on public education spending in the period under scrutiny, as the significance levels, effect sizes, and even the signs of coefficient estimates flip across model specifications.

Second, a critical reader might object that the effects of openness on spending should be mediated by government partisanship. In other words: Maybe trade openness does not have a direct effect on spending, but an indirect one through left parties in government. To probe this possibility, we estimate models excluding the trade openness variable and the partisan variable in turn. Moreover, we test for an interaction between both variables. However, we find a significant effect of trade openness only in one of twelve model specifications – which, moreover, even points in the ‘wrong’ direction (results on request).

Third, we use longer lags for the independent variables (two to five years), as it might be the case that the effect of openness needs more time to materialize. The results, however, do not support this reasoning, as the effects are highly similar, or even less significant. Hence, it is not the case that we ‘miss’ the effect of openness by choosing the common one-year lags. Similarly, we investigate whether including year fixed-effects alters the results to test, for example, whether common shocks across countries drive the results. This is not the case.

Fourth, we test whether including GDP GROWTH alters the results, as some scholars have argued it should be included when other measures are calculated relative to GDP. GDP growth does not significantly affect education spending, but significantly decreases spending on unemployment. More importantly for the argument of this paper, including GDP growth does *not* make the effect of globalization more coherent. Therefore, excluding GDP growth seems well justified, as the main

finding is still the same: There is no uniform systematic effect of globalization on government spending once we distinguish between different policy fields.

Finally, when predicting unemployment spending, we also added the STANDARDIZED UNEMPLOYMENT RATE as an additional control. This variable has – as could be expected – a strong and significant effect. More importantly, however, it does not alter the effect of trade openness. In sum, the robustness tests show that our results are not driven by the selection of methods, operationalizations, inclusion of specific variables, or the choice of particular lag-structure. Overall, there is no systematic association between globalization and public spending on either education or unemployment benefits. That is, although economic globalization increases demand for social investment, it does not translate into larger social investment spending.

## 6. Conclusion

Two seemingly contradicting theories make claims on effects of globalization on welfare states. Compensation theory argues that globalization enhances economic insecurities, which in turn increase public welfare demand, particularly unemployment benefits. Governments are hypothesized to respond to this demand by expanding the welfare state. Efficiency theory, in contrast, argues that the mobility of capital in a globalized economy puts pressure on governments to cut back on taxes and – consequently – (social) spending. Empirical evidence on these rival claims is inconclusive. This article tried to sketch out a possible reconciliation of these conflicting expectations. First, we argued that the two theories are less contradicting than usually assumed, when the supply and the demand side of policy-making are disentangled. While we are not the first to notice this possibility (see Brady et al. 2007; Cerny 1997; Genschel 2004; Hays 2009; Rodrik 1997), it is not prominent in the literature so far and – more importantly – has hitherto not been systematically tested. Combining survey analyses of individual-level preferences and time-series cross-section regressions on policy output, we indeed found that economic globalization increases *demand for* (some kinds of) welfare policies, but that there is no robust association between globalization and the supply-side of policy-making, i.e. public spending. In sum, globalization increases the *demand for* but not the *supply of* social policies.

This finding contradicts recent contributions to the field (Brooks/Manza 2006, 2007; Rehm 2012; Soroka/Wlezien 2010) that find policy output to be roughly in line with popular preferences. A full challenge of the “social policy by popular demand” hypothesis (Rehm 2012) requires more extensive and more careful analysis beyond the scope of the present paper by, for example, including measures of public opinion on the left hand side of the macro-level regressions, which was unfeasible here for data availability reasons. Nevertheless, our findings do suggest that the link between individual preferences and policy output is less straightforward than often assumed.

The second and more innovative contribution of this paper is that we expanded the scope of the debate on the globalization-welfare nexus by emphasizing the role of social investments relative to traditional compensatory social policies. We argued that individuals faced with the challenges of globalization are more likely to demand increased public investments in human capital (in order to prevent unemployment and job offshoring *ex ante*) rather than demanding to be compensated for income losses *ex post* as the bulk of existing literature expects. Identifying the exact causal mechanism is difficult due to data limitations, but our analyses revealed that the association between globalization and demand for education spending is much clearer than the one between globalization and demand for increased spending on unemployment, although the latter would come closer to the classical compensation argument. Instead of compensation, people demand social investments.

Bringing these findings together, our results suggest a systematic ‘democratic mismatch’ between popular demand and policy output. A pessimistic interpretation of our results could emphasize that if the globalization-induced increases in demand for compensation is not met by increased public supply by policy-makers (at least in the long run), more and more voters might be disappointed by their governments or even by democracy in general. The amply documented crisis of democracy that manifests itself in lower levels of public trust in the institutions of representative democracy, declining political participation, increases in anti-democratic sentiments, and the rise of

populist parties throughout Europe seem to point in this direction. This scenario is especially worrisome in light of expectations that global internationalization is likely to continue in the future.

A more optimistic interpretation of the results could object that the public is well informed about the constraining effects of globalization on government capacity. For instance, public opinion data shows that about three-quarters of all respondents across Europe believe that national governments are *not* the best-suited actor to “get the effects of globalization under control” (Christensen 2010: 11). Furthermore, Hellwig and Samuels (2007: 298) find “strong support for the claim that globalization attenuates accountability linkages between voters and elected officials”. Voters in more open economies are less likely to reward or sanction their governments for economic performance (Hellwig et al. 2008). Hence, it might be the case that the ‘democratic mismatch’ between demand for and supply of welfare does not automatically translate into higher levels of political discontent. Whether the ‘pessimistic’ or the ‘optimistic’ scenario (or none of them) are appropriate remains to be seen.

## References

- Ansell, Ben W. 2008a. Traders, Teachers, and Tyrants: Democracy, Globalization, and Public Investment in Education. *International Organization* 62(Spring 2008):289-322.
- Ansell, Ben W. 2008b. University Challenges: Explaining Institutional Change in Higher Education. *World Politics* 60(2):189-230.
- Ansell, Ben W. 2010. *From the Ballot to the Blackboard: The Redistributive Political Economy of Education*. Cambridge: Cambridge University Press.
- Armington, Klaus, David Weisstanner, Sarah Engler, Panajotis Potosidis, and Marlène Gerber. 2012. *Comparative Political Data Set I 1960-2010*. Bern: University of Bern.
- Beck, Nathaniel, and Jonathan N. Katz. 1995. What To Do and Not To Do With Time-Series Cross-Section Data. *American Political Science Review* 89(3):634-47.
- Benarroch, Michael, and Manish Pandey. 2012. The Relationship Between Trade Openness and Government Size: Does Disaggregating Government Expenditure Matter? *Journal of Macroeconomics* 34(1):239-52.
- Blinder, Alan. 2007. How Many U.S. Jobs Might be Offshoreable. *CEPS Working Paper No. 142*.
- Boix, Carles. 1997. 1997. Political Parties and the Supply Side of the Economy: The Provision of Physical and Human Capital in Advanced Economies. *American Journal of Political Science*, 41(3):814-845.
- Boix, Carles. 1998. *Political Parties, Growth, and Equality. Conservative and Social Democratic Strategies in the World Economy*. New York: Cambridge University Press.
- Brady, David, Jason Beckfield, and Martin Seeleib-Kaiser. 2005. Economic Globalization and the Welfare State in Affluent Democracies, 1975-2001. *American Sociological Review* 70(6):921-48.
- Brady, David, Jason Beckfield, and Wei Zhao. 2007. The Consequences of Economic Globalization for Affluent Democracies. *Annual Review of Sociology* 33(1):313-34.
- Breunig, Christian. 2011. Reduction, Stasis, and Expansion of Budgets in Advanced Democracies. *Comparative Political Studies* 44(8):1060-88.
- Brooks, Clem, and Jeff Manza. 2006. Social Policy Responsiveness in Developed Democracies. *American Sociological Review* 71(3):474-94.
- Brooks, Clem, and Jeff Manza. 2007. *Why Welfare States Persist: The Importance of Public Opinion in Democracies*. Chicago: University of Chicago.
- Burgoon, Brian. 2001. Globalization and Welfare Compensation: Disentangling the Ties that Bind. *International Organization* 55(3):509-51.
- Burgoon, Brian. 2012. Partisan Embedding of Liberalism: How Trade, Investment, and Immigration Affect Party Support for the Welfare State. *Comparative Political Studies* 45(5):606-35.
- Busemeyer, Marius R. 2007. The Determinants of Public Education Spending in 21 OECD Democracies, 1980-2001. *Journal of European Public Policy* 14(4):582-610.
- Busemeyer, Marius R. 2009a. From Myth to Reality: Globalization and Public Spending in OECD Countries Revisited. *European Journal of Political Research* 48(4):455-82.
- Busemeyer, Marius R. 2009b. Social Democrats and the New Partisan Politics of Public Investment in Education. *Journal of European Public Policy* 16(1):107-26.
- Busemeyer, Marius R. 2012. Inequality and the Political Economy of Education: An Analysis of Individual Preferences in OECD Countries. *Journal of European Social Policy* 22(3):219-40.
- Busemeyer, Marius R., Achim Goerres, and Simon Weschle. 2009. Attitudes Towards Redistributive Spending in an Era of Demographic Ageing: The Rival Pressures From Age and Income in 14 OECD

- Countries. *Journal of European Social Policy* 19(3):195-212.
- Cameron, David R. 1978. The Expansion of the Public Economy: A Comparative Analysis. *American Political Science Review* 72(4):1243-61.
- Castles, Francis G. 1989. Explaining Public Education Expenditure in OECD Nations. *European Journal of Political Research* 17(4):431-48.
- Castles, Francis G. 1998. *Comparative Public Policy: Patterns of Post-War Transformation*. Cheltenham: Edward Elgar.
- Castles, Francis G. 2004. *The Future of the Welfare State: Crisis Myths and Realities*. Oxford, New York: Oxford University Press.
- Cerny, Philip G. 1997. Paradoxes of the Competition State: The Dynamics of Political Globalization. *Government and Opposition* 32(2):251-74.
- Christensen, Thomas. 2010. *Eurobarometer 55.1: Globalization and Humanitarian Aid, April-May 2001*. ICPSR03361-v3. Cologne, Germany: GESIS/Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2010-06-29.
- Culpepper, Pepper D. 2010. *Quiet Politics and Business Power: Corporate Control in Europe and Japan*. Cambridge: Cambridge University Press.
- Dreher, Axel. 2006. Does Globalization Affect Growth? Evidence from a New Index of Globalization. *Applied Economics* 38(10):1091-110.
- Finseraas, Henning. 2009. Income Inequality and Demand for Redistribution: A Multilevel Analysis of European Public Opinion. *Scandinavian Political Studies* 32(1):94-119.
- Garrett, Geoffrey. 1998. *Partisan Politics in the Global Economy*. Cambridge: Cambridge University Press.
- Garrett, Geoffrey. 2001. Globalization and Government Spending around the World. *Studies in Comparative International Development* 35(4):3-29.
- Garrett, Geoffrey, and Deborah Mitchell. 2001. Globalization, Government Spending and Taxation in the OECD. *European Journal of Political Research* 39(2):145-77.
- Garrizmann, Julian L. 2015. Attitudes towards Student Support. How Positive Feedback-Effects Prevent Change in the Four Worlds of Student Finance. *Journal of European Social Policy* 25(2):139-158.
- Garrizmann, Julian L. and Kilian Seng. 2016. Party Politics and Education Spending. Challenging some Common Wisdom. *Journal of European Public Policy* 23(4): 510-530.
- Genschel, Philipp. 2002. Globalization, Tax Competition, and the Welfare State. *Politics & Society* 30(2):245-75.
- Genschel, Philipp. 2004. Globalization and the Welfare State: A Retrospective. *Journal of European Public Policy* 11(4):613-36.
- Hays, Jude C. 2009. *Globalization and the New Politics of Embedded Liberalism*. Oxford: Oxford University Press.
- Heidenheimer, Arnold J. 1996. Throwing Money and Heaving Bodies: Heuristic Callisthenics for Comparative Policy Buffs. In *Comparing Government Activity*, edited by Louis M. Imbeau, and Robert McKinlay, 13-25. Houndmills, London: Macmillan.
- Hellwig, Timothy T., Eve M. Ringsmuth, and John R. Freeman. 2008. The American Public and the Room to Maneuver: Responsibility Attributions and Policy Efficacy in an Era of Globalization. *International Studies Quarterly* 52(4):855-80.
- Hellwig, Timothy T, and David Samuels. 2007. Voting in Open Economies: The Electoral Consequences

- of Globalization. *Comparative Political Studies* 40(3):283-306.
- Hicks, Alexander. 1999. *Social Democracy and Welfare Capitalism: A Century of Income Security Politics*. New York: Carnell.
- ISSP Research Group. 2008. *International Social Survey Programme: Role of Government IV- ISSP 2006*. Cologne: GESIS Data Archive. ZA4700 Data file Version 1.0.0.
- Iversen, Torben. 2001. The Dynamics of Welfare State Expansion: Trade Openness, Deindustrialization and Partisan Politics. In *The New Politics of the Welfare State*, edited by Paul Pierson, 45-79. Oxford: Oxford University Press.
- Iversen, Torben, and Thomas R. Cusack. 2000. The Causes of Welfare State Expansion: Deindustrialization or Globalization? *World Politics* 52(3):313-49.
- Jahn, Detlef. 2006. Globalization as 'Galton's Problem': The Missing Link in the Analysis of Diffusion Patterns in Welfare State Development. *International Organization* 60(2):401-31.
- Jensen, Carsten. 2011. Capitalist Systems, Deindustrialization, and the Politics of Public Education. *Comparative Political Studies* 44(4):412-35.
- Jensen, Carsten. 2014. *The Right and the Welfare State*. Oxford: Oxford University Press.
- Katzenstein, Peter J. 1985. *Small States in World Markets: Industrial Policy in Europe*. Ithaca, London: Cornell University Press.
- Kittel, Bernhard, and Herbert Obinger. 2003. Political Parties, Institutions, and the Dynamics of Social Expenditure in Times of Austerity. *Journal of European Public Policy* 10(1):20-45.
- Kurzer, Paulette. 1991. Unemployment in Open Economies: The Impact of Trade, Finance, and European Integration. *Comparative Political Studies* 24(1):3-30.
- Kwon, Hyeok Yong, and Jonas Pontusson. 2010. Globalization, Labor Power and Partisan Politics Revisited. *Socio-Economic Review* 8(2):251-81.
- Longmire and Company, Inc. 2008. *Report on the Impact of the Economy on College Enrollment 2009*. Lenexa, KS: Longmire and Company, Inc.
- Marshall, John, and Steven D. Fisher. 2015. Compensation or Constraint? How Different Dynamics of Economic Globalization Affect Government Spending and Electoral Turnout. *British Journal of Political Science* 45(2):353-389.
- Meltzer, Allan H., and Scott F. Richard. 1981. A Rational Theory of the Size of Government. *Journal of Political Economy* 89(5):914-27.
- Mullin, Christopher M., and Kent Phillippe. 2009. *Community College Enrollment Surge: An Analysis of Estimated Fall 2009 Headcount Enrollments at Community Colleges*. Washington, DC: American Association of Community Colleges.
- Rehm, Philipp. 2012. Social Policy by Popular Demand. *World Politics* 63(2):271-99.
- Rodrik, Dani. 1997. *Has Globalization Gone Too Far?* Washington, D.C.: Institute for International Economics.
- Rodrik, Dani. 1998. Why Do More Open Economies Have Bigger Governments? *Journal of Political Economy* 106(5):997-1032.
- Rudra, Nita, and Stephan Haggard. 2005. Globalization, Democracy, and Effective Welfare Spending in the Developing World. *Comparative Political Studies* 38(9):1015-1049.
- Ruggie John Gerard. 1982. International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order. *International Organization* 36(2):379-415.
- Scharpf, Fritz W. 1991. *Crisis and Choice in European Social Democracy*. Ithaca, London: Cornell

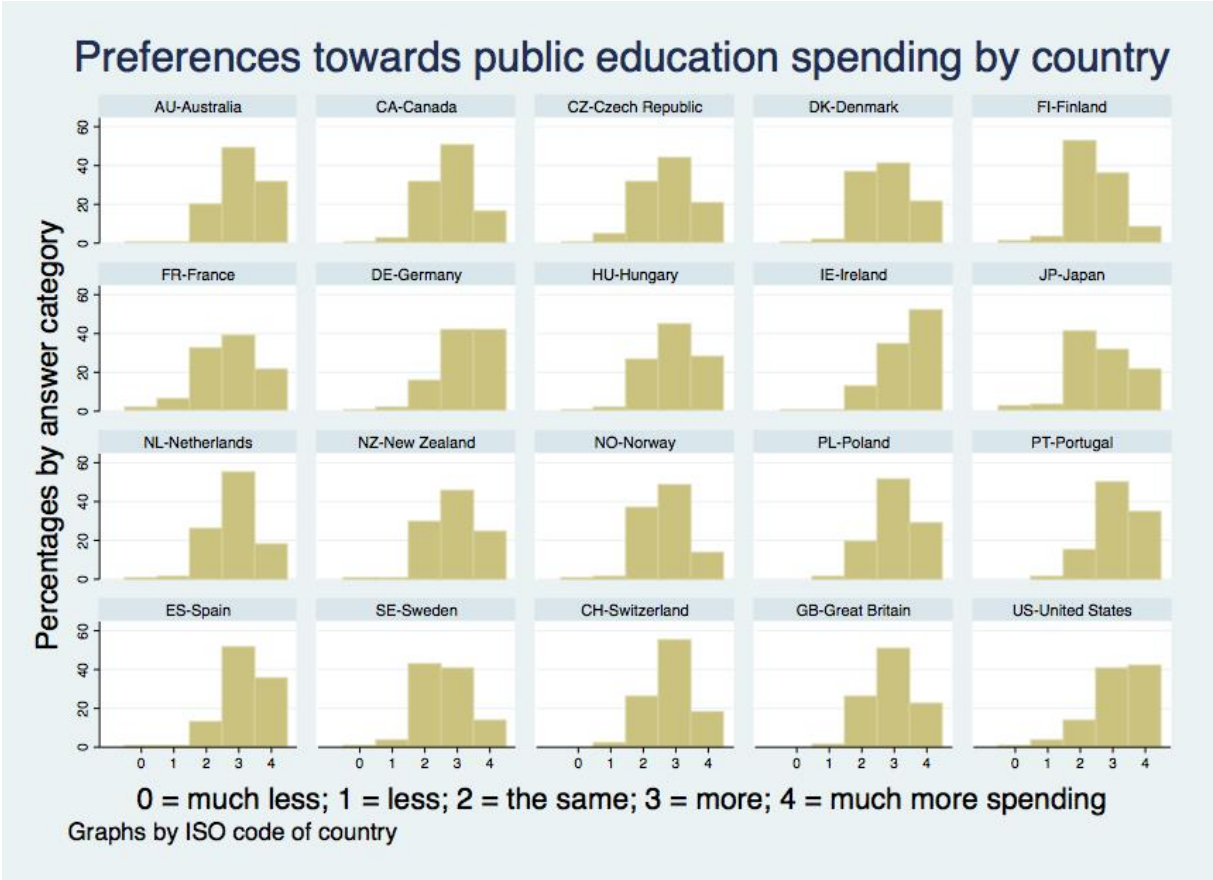


University Press.

- Scheve, Kenneth, and Matthew J. Slaughter. 2004. Economic Insecurity and the Globalization of Production. *American Journal of Political Science* 48(4):662-74.
- Schmidt, Manfred. G. 2007. Testing the Retrenchment Hypothesis: Educational Spending, 1960-2002. In *The Disappearing State? Retrenchment Realities in an Age of Globalization*, edited by Francis G. Castles, 159-83. Cheltenham, Northampton: Edward Elgar.
- Solt, Frederick. 2009. Standardizing the World Income Inequality Database. *Social Science Quarterly* 90(2):231-42.
- Soroka, Stuart N., and Christopher Wlezien. 2010. *Degrees of Democracy: Politics, Public Opinion, and Policy*. Cambridge: Cambridge University Press.
- Stasavage, David. 2005. Democracy and Education Spending in Africa. *American Journal of Political Science* 49(2):343-358.
- Svallfors, Stefan. 1997. Worlds of Welfare and Attitudes to Redistribution: A Comparison of Eight Western Nations. *European Sociological Review* 13(3):283-304.
- Swank, Duane. 1998. Funding the Welfare State: Globalization and the Taxation of Business in Advanced Market Economies. *Political Studies* 46(4):671-92.
- Swank, Duane. 2002. *Global Capital, Political Institutions, and Policy Change in Developed Welfare States*. Cambridge: Cambridge University Press.
- Walter, Stefanie. 2010a. Globalization and the Demand-Side of Politics. How globalization shapes individual perceptions of labor market risk and policy preferences. *IPES Annual Conference Paper, Harvard University*, November 12-13, 2010.
- Walter, Stefanie. 2010b. Globalization and the Welfare State: Testing the Microfoundations of the Compensation Hypothesis. *International Studies Quarterly* 54(2):403-26.
- Williams, Richard. 2006. Generalized Ordered Logit/Partial Proportional Odds Models for Ordinal Dependent Variables. *The Stata Journal* 6(1):58-82.
- Wlezien, Christopher. 1995. The Public as Thermostat: Dynamics of Preferences for Spending. *American Journal of Political Science* 39(4):981-1000.
- Wolf, Frieder, and Reimut Zohlnhöfer. 2009. Investing in Human Capital? The Determinants of Private Education Expenditure in 26 OECD Countries. *Journal of European Social Policy* 19(3):230-44.

Online-Appendix

Online-Appendix Figure A: Respondents' preferences over public education spending across countries.



Source: Authors' compilation, based on ISSP RoG 2006 data (see text for details).

**Online-Appendix Table A:** Descriptive statistics for variables used in survey analyses.

Variable, Source, Operationalization	N	Mean	Std. Dev.	Min	Max
<i>Micro-level variables (Source: ISSP 2006):</i>					
Education spending preference, (“V20”)	19372	.7104	.4536	0	1
Unemployment spending preference, (“V23”)	19072	.2775	.4478	0	1
Income, in country deciles	19890	3.3867	2.2551	1	10
Gender (female)	19964	.5057	.5000	0	1
Education (years)	18564	12.7671	4.1244	1	65
Age (years)	19892	48.5462	16.5843	15	97
Full-time worker, “WRKST”	19671	.5251	.4994	0	1
Part-time worker, “WRKST”	19671	.1059	.3078	0	1
Less than part-time worker, “WRKST”	19671	.1095	.3123	0	1
Unemployed, “WRKST”	19671	.0321	.1762	0	1
In education, “WRKST”	19671	.0367	.1880	0	1
Retired, “WRKST”	19671	.1907	.3929	0	1
No children, “HOMPOP” = 1 or 2 persons	19718	.5359	.4987	0	1
<i>Micro-level variables included in robustness section (Source: ISSP 2006):</i>					
No children (alternative operationalization), “HHCYCLE” = 1 or 2 persons	19573	.5212	.4996	0	1
Party vote (left), “PARTY_LR”, voted for a left or far-left party	17698	.3370	.4727	0	1
Party vote (right), “PARTY_LR”, voted for a right or far-right party	17698	.2790	.4485	0	1
Should government cur spending?, “V11”	18878	2.6037	1.2169	0	4
Offshore-ability index (Walter 2010a)	17817	18.4618	29.2760	0	100
<i>Country-level variables (Source: OECD Stats, if not indicated otherwise)</i>					
Level of trade openness (2000), (Imports + Exports) / GDP	20023	71.5490	32.7974	20.52	184.01
Level of trade openness (2005), (Imports + Exports) / GDP	20023	68.8095	29.0180	26.49	150.70
5-year change in trade openness, Level of trade openness 2005 – level of trade openness 2000	20023	-2.7395	8.7638	-33.31	10.52
Level of inequality (2000), (SWIID, Version 3.1), net Gini	20023	29.7010	4.1908	22.5	36.8
Level of inequality (2005), (SWIID, Version 3.1), net Gini	20023	28.9481	3.3786	23.60	35.93
Level of public education spending all levels (2000)	20023	5.0711	.7998	3.50	6.40
Level of public education spending all levels (2005)	20023	4.9985	.8659	3.40	6.80
Level of deindustrialization (2000)	20023	.6890	.0609	.53	.77
Change in deindustrialization (2005-2000)	20023	.0267	.0104	.01	.05
Total foreign direct investment (2000)	20023	16.3672	10.8090	.84	36.27
Total foreign direct investment (2005)	20023	8.2206	5.7892	1.06	25.38
Inwards foreign direct investment (2000)	20023	7.9177	6.2708	.176	26.46
Inwards foreign direct investment (2005)	20023	3.4538	3.0459	.06	14.35
Outwards foreign direct investment (2000)	20023	8.4495	6.6743	.67	19.73
Outwards foreign direct investment (2005)	20023	4.7668	4.2336	.29	19.26
Capital account transactions Index (2000), Armingeon et al. 2012	20023	2.2875	.4408	1.13	2.46
Capital account transactions Index (2000), Armingeon et al. 2012	20023	2.2875	.4408	1.13	2.46

**Online-Appendix Table B:** Descriptive statistics for variables used in time-series cross-section analyses.  
Source: OECD Stats if not indicated otherwise.

Variable	N	Mean	Std. Dev.	Min	Max
Public education spending, all levels, as a share of GDP	374	5.1705	.9238	2.40	7.70
Public education spending, tertiary education, as a share of GDP	373	1.1010	.3312	.30	2.20
Total public spending, as a share of GDP	420	45.7313	7.7894	30.30	71.72
Level of trade openness (2000), (Imports + Exports) / GDP	420	70.4284	33.9932	16.11	184.31
Capital account transactions Index, Armingeon et al. 2012	393	2.1905	.6894	-1.14	2.50
Inwards foreign direct investment	403	3.1812	4.1769	.00	38.15
Outwards foreign direct investment	401	3.7635	4.1784	.11	43.48
Cabinet seat share of left parties, Armingeon et al. 2012	420	36.6609	38.6122	0	100
Share of the elderly (+ 65)	420	15.0804	2.2372	10.85	22.75
Deindustrialization = share of employment in the service sectors = 1 – (share of manufacturing + share agriculture)	420	.6807	.0670	.46	.81

**Online Appendix Table C:** Determinants of individual-level preferences towards public education spending in 17 countries in 2005/06, partial proportional odds model.

	Spend less, the same as now, more, or much more (=1). Much less (= 0).	Spend the same as now, more, or much more (=1). Less, or much less (= 0).	Spend more, or much more (=1). Much less, less, or the same as now (= 0).	Spend much more (=1). Much less, less, the same as now, or more (= 0).
Individual-level variables				
Income	0.2316*** (0.0825)	0.0589 (0.0535)	0.0040 (0.0222)	-0.0166 (0.0152)
Female	0.9186*** (0.2068)	0.5060*** (0.1456)	0.0822 (0.0518)	0.0802* (0.0467)
Education (years)	-0.0208 (0.0474)	-0.0190 (0.0156)	0.0129 (0.0080)	0.0241** (0.0108)
Age			0.0199** (0.0082)	
Age (squared)			-0.0002*** (0.0001)	
No children	0.7141*** (0.2288)	-0.2619** (0.1264)	-0.2102*** (0.0724)	-0.1634** (0.0701)
Part-time worker			0.0243 (0.0656)	
Less than part-time			0.0996 (0.0652)	
Unemployed			0.1064 (0.0996)	
In education	0.0459 (1.0441)	1.6828** (0.6564)	0.4049* (0.2305)	0.2007 (0.1946)
Retired			0.1311 (0.1030)	
Country-level variables				
Trade openness (2000)	0.0279*** (0.0101)	0.0199*** (0.0062)	0.0078* (0.0041)	0.0051** (0.0026)
Inequality (2000)			0.0909*** (0.0320)	
Public education spending (2000)			-0.2338 (0.1776)	
Constant	0.6544 (2.2752)	0.4726 (1.8899)	-1.6867 (2.0598)	-3.6209* (1.9977)
Model fit				
N			17,394	
Log pseudolikelihood			-19550.523	
Pseudo R <sup>2</sup>			0.0298	

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Standard errors in parentheses. Reference category for labor market status dummies is full-time employment. For those variables, where the ordered logit assumption held, only one coefficient is shown for all categories (e.g., "age") and can be interpreted as an ordered logit coefficient. For those variables, which violated the assumption, different coefficients for each answer category are shown (e.g., "income"). For interpretation of partial proportional odds models see description in text above and Williams (2006).

### Interpretation of Table C (Online-Appendix):

A well-known and common weakness of ordered logit models is, that this assumption is often violated. This was also the case for our sample. The two standard solutions to this problem are to either ignore this shortcoming and still report the results, or to abstain from using ordered logit models by using multinomial or generalized ordered logit models instead.

As a more convincing solution, we used a partial proportional odds model.<sup>11</sup> This model relaxes the proportional odds assumption for those variables, which violate it, but keeps it for those variables, which do not violate the assumption. Put simply, a partial proportional odds model is an ordered logit model for those variables, which meet the proportional odds assumption, and a series of logit models for those variables, which do *not* meet the assumption. The main advantage of the model is that it uses more of the available information as (in contrast to logit) all answer categories are used and (in contrast to multinomial models) the fact that the answer categories are ordered is taken into account. The interpretation of the coefficients is slightly different than in logit models: The coefficients of those variables, for which the ordered logit assumption holds, can be interpreted as standard ordered logit coefficients. When the assumption is violated, the model estimates a series of logit models. For these, *positive* coefficients indicate that the variable increases the likelihood that a respondent is in a *higher* answer category than the current. *Negative* coefficients, vice versa, mean that the respondent is likely to be *in the current or a lower* category on the answer scale.

Results of the partial proportional odds model, using the same variable specification as model 3 in Table 1, are presented in Table C.<sup>12</sup> Again, the effect of trade openness remains robust: the coefficients of the openness variable are positive and significant for all answer categories, which indicates that trade openness has an almost linear positive effect on education spending preferences. This justifies our decision to dichotomize the dependent variable to facilitate interpretation. To be precise, the effect decreases slightly in size over the answer categories, indicating that trade openness decreases opposition to more spending more drastically than it increases support. In any case, however, this indicates that trade openness has the theorized effect and the results are not driven by our decision to dichotomize the dependent variable.

---

<sup>11</sup> We estimate these using Stata's "gologit2"-ado with the "autofit"-option (Williams 2006).

<sup>12</sup> The model reveals why we do not find an effect of gender on education policy preferences: Gender indeed does have an effect, but it is not linear across all answer categories (indicated by the decreasing sizes and changing significance levels of the effect): Women are significantly less likely than men to oppose education spending. For the third answer category, which discriminates between "more spending" vs. "the same or less" (just as our main analyses above have done), however, this effect disappears. In other words, women are less likely than men to state extreme positions on public education spending. In a similar vein, the model shows that income indeed does have an effect, as soon as we investigate the answers across answer categories: the higher a respondent's reported income, the less likely that she will favor "much less" spending. In other words: especially poorer respondents seem to tick the option "much less education spending". We abstain from discussing this surprising finding in-depth, but strongly encourage future research to address this relationship in more detail.

The DaWS Working Paper Series is published by and edited at the Danish Centre for Welfare Studies (DaWS) at the University of Southern Denmark. It aims to advance academic knowledge in comparative welfare states and public policies by providing advance access to promising new theoretical and empirical research in political science, political economy, sociology and history.

**Series Chief Editor:**

Pieter Vanhuysse (vanhuysse@sam.sdu.dk)

**Editorial Board:**

Heidi Vad Jønsson

Paul Marx

Peter Starke

Melike Wulfgramm