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HOW DOES GLOBALIZATION AFFECT THE WELFARE STATE? OPENNESS TO TRADE AND SOCIAL SPENDING PATTERNS IN 21 COUNTRIES, 1920-2000

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This paper investigates the link between globalization, operationalized as openness to trade, and the welfare state, defined as social spending, in a panel of 21 countries from 1920 to 2000. It argues for a clear definition of globalization with clearly defined and testable data, and that social spending should be analyzed on the aggregate as well as by type of welfare program since the effect of globalization is probably not uniform. The paper finds notable divergences in openness and social spending between countries and regional groups across the century, but it negates a clear connection between small, typically open, economies and large welfare states. Openness to trade had different effects on different welfare programs but was positive for the growth of total social spending. There is hence some confirmation for the welfare state as a cushion for those losing out due to globalization, but it is not a uniform mechanism across all types of social spending and effect sizes were overall small compared to other variables. This was most notable in the positive impact on spending on unemployment benefits but was less straightforward in the positive impact on pension expenditure.

Introduction

Two of the greatest achievements of the post-World War Two world were the growth of the welfare state and the re-globalization of trade flows after periods of de-globalization during the 1930s and 1940s (Ronald Findlay and Kevin O'Rourke 2007; Peter Lindert 2004a). These two trends can be said to have been largely concurrent, and it has been suggested that the latter may have been one of the main drivers of the growth in the former.

Experiences may however have differed across the western world. Historically, small countries have faced other types of problems than large economies and have developed other political and economic systems and ways of dealing with such problems. In Peter Katzenstein's (1985, 39) words the small economies have been "avoiding policies of protection and of structural transformation equally, they combine international liberalization with domestic compensation." The small European economies in the North and in the West (Austria, Switzerland, Sweden, Norway, Denmark, Netherlands, and Belgium)[1] have generally been more open to international trade and innovation than their large counterparts (the US, Britain, Germany, France, and Japan), while also being more dependent, for instance, on foreign direct investment and energy imports (Katzenstein 1985, 86). Openness and dependence lead in some part to vulnerability, which influenced small economies to adopt two types of democratic corporatism (liberal and social).[2] An increased role of the state may have been a way to cushion the blow for those losing out because of globalization; the state has been a mitigator of the risk associated with openness and dependence on the world market (Dani Rodrik 1998). On the other hand, globalization might be a negative force for social expenditure since it will lead to political prioritization of reducing budget

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[1] One can think of small and open non-European economies post-1945, such as Taiwan and Singapore, which fit this description. This paper studies mainly countries in the western hemisphere, apart from Japan, because of the availability of long-run data.

[2] In Katzeinstein's model the liberal corporatist countries are Switzerland, Belgium, and the Netherlands while Denmark, Norway, and Austria are the social corporatist. Sweden shared traits of both systems. The strength and inclusion in political bargaining and negotiations of national labor unions is one important difference between the two types of corporatism.

deficits and lowering taxes, hence creating a "race-to-the-bottom" in terms of social spending (Ramesh Mishra 1999; Rodrik 1997).

However, the theoretical connection between openness and the welfare state across the twentieth century is not matched by an equal soundness of historical evidence in a longer run. Much previous research has not combined a clear definition and quantitative operationalization of globalization which can be matched with the different programs of the welfare state, across a large panel over a longer period of time. This paper aims to fill those gaps by mapping the development of welfare state programs across the twentieth century in a panel of 21 countries. It will do so to analyze what has been the impact of globalization on the welfare state. Have open economies actually had larger and more generous welfare programs? If so, what were the causal mechanisms? To get at these questions the size of welfare state programs is operationalized by measuring social spending, public expenditure on the welfare state.[3] In order to try to find the possible causal mechanisms aggregate social spending as well as type of spending program is analyzed, as previous research has suggested that different programs might be affected differently by globalization (Lukas Fervers, Phillip Oser, and Georg Picot 2016). Furthermore, the country sample is divided into different cohorts to try to find where the differences between countries lie. It is established that small economies were generally more open than large economies, but were they really more redistributive? Did type of politico-economic regime matter more? This is assessed by assembling partly new data on social spending before 1960 to be able to analyze the growth of the welfare state in the long run. This data set represents the longest and largest annual cross-country time-series of the size and development of the welfare state. It is also one of few studies to compare the post-World War Two period with what came before, in order to explore possible differences in the

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[3] This means that private social spending is not included in the measure. To some extent private social spending has offset lower public social spending; in 2007 this was at least the case for Switzerland and the USA. However, we cannot safely assume this has historically been the case. Lindert (2014) argues that public spending has not crowded out private spending since they grew simultaneously during the twentieth century. Any reference to "social spending" in this paper refers to public social spending unless stated otherwise.

effect of openness. Lastly, the paper contributes by including two complementary measures of trade openness: one concerning policy, and one concerning trade volumes.

The paper finds that large differences in social spending patterns existed between countries over the period, but that they diverged little depending on economic size and openness, but rather differed depending on political-economic regime type. Openness to trade is found to have been largely positive for the growth of welfare state programs after World War Two, while the growing role of the state was associated with de-globalization before 1948. Although the overall impact was positive in the post-World War Two world, the effect was not uniform, but rather differed depending on type of welfare program.

The paper is organized as follows: the following section reviews previous research on globalization and the welfare state, more narrowly defined as openness and social spending respectively. After that I explain the data, sources, and methodology employed to create the series which are then presented in the subsequent section. Then the connection between two measures of openness to trade and aggregate and disaggregate social spending is tested, after which the paper is concluded.

The connection between globalization and the welfare state

The connection between social spending and openness to international trade has so far been rather unclear overall, with empirical research yielding different results. Some studies discuss the impact of "globalization" in general on the welfare state,[4] but this paper will focus on openness to trade more specifically. As David Brady, Jason Beckfield, and Martin Seeleib-Kaiser (2005) note in their review of the literature, globalization is rarely measured in a concrete manner, lacking specific definitions and data.[5] Globalization, measured as openness to trade, has

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[4] See for instance Mishra (1999) and Elmar Rieger and Stephan Leibfried (2003).

[5] Gülsün Yay and Tolga Aksoy (2018) present one of few studies which distinguish between economic globalization (trade and financial flows), political globalization (spread of embassies and participation in international organizations), and social globalization (such as information use and tourism). Stephanie Meinhard and Niklas Potrafke (2012) have a similar division between economic, political, and social globalization.

been found to have a linear positive impact on the growth of the aggregate size of the state, measured as total public expenditure, from 1960 to 1975.[6] More specifically, openness to trade had a positive effect on expenditure on social programs in the west after 1960 (Alexander Hicks 1999). The relationship may however be "curvilinear", meaning that at lower initial levels of openness to trade and investment an increase can create welfare state expansion as the economy grows. At higher levels of openness, it may however cause a decrease in social spending in welfare states where programs are already generous and well developed (Rodrik 1997). There is indication that the effect may differ depending on which type of welfare program is studied. Lindert (2004b) discovered, studying an 18-country sample from 1960 to 1995, that openness to trade had increased spending on welfare (social security), education, and unemployment, but not on health and pensions.[7] Sergio Espuelas (2012) studied 15 European countries between 1950 and 1978 and found that openness was positively connected to increased spending on unemployment benefits and to health spending (but a small-size effect) and negatively connected with spending on education, pensions, and welfare (social security). The total effect was negative but small (Espuelas 2012, 217).

The effects may also differ depending on type of welfare state regime. Economic globalization has been found to have a positive effect on social transfers in social democratic welfare states (such as Sweden), but rather a negative one in more liberal-style welfare states (such as the United Kingdom). The result for conservative welfare states has been different across studies (Markus Leibrecht, Michael Klien, and Oezlem Onaran 2011; Yay and Aksoy 2018). Globalization had a more distinct positive effect on OECD-economies, which have been more globalized and have had larger welfare states, than other states between 1970 and 2004 (Meinhard and Potrafke 2012). Particularly left-wing governments have

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[6] David Cameron (1978) included the OECD core (Denmark, Finland, Norway, Sweden, Belgium, the Netherlands, Switzerland, Austria, Britain, Ireland, Germany, France, Spain, Italy, Canada, USA, Australia, and Japan) in his seminal study.

[7] The positive relationship however disappeared once country fixed effects were included in the analysis.

tended to increase expenditure on social transfers at times when globalization was increasing (Potrafke 2009).

Other studies have rather disproved this and found that trade openness had a negative effect on total government spending and social security transfers, in a similar OECD sample between 1961 and 1993 (Geoffrey Garrett and Deborah Mitchell 2001). We can see another strand of research which has been able to identify neither a positive nor a negative relationship between globalization and the welfare state. These studies found relationships without statistical significance as well as cases where the effect size was too small to be relevant.[8] There could also be a lagged effect from openness to trade on the growth of the welfare state. Rodrik (1998) found that countries which were the most open in 1975-1984 had the largest total government spending from 1985 to 1989 (in a 100+ country sample) and particularly so on the welfare categories of education, health, and public housing.

Studies on social spending and openness outside the Western world are more uncommon. One study was done on 17 Latin American countries between 1990 and 2012. It found that openness to trade had a slight positive effect on spending on education and health during the first period (1990-2000) while the causation reversed during the second period (2001-2012) (Fernando Martín-Mayoral and Juan Fernández Sastre 2017).

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[8] Brady et al. (2005) studied 17 developed democracies (the Cameron-sample, see footnote 6, less Spain) in the period from 1975 to 2001 and found no clear relationship between trade openness and total social welfare expenditure or more specifically social security transfers. Openness to trade however had a clear positive effect on an index of decommodification (coverage, eligibility, and replacement rates for unemployment, sickness, and pension). Other types of openness, to FDI and migration, had positive effects on total social spending. The authors conclude "perhaps the best examples of this pattern are the Scandinavian social democracies of Denmark, Norway, and Sweden", which in their view gives some validity to Katzenstein's argument about small open states also being egalitarian welfare states (Brady et al. 2005, 942–943). Paolo Epifani and Gino Gancia (2009) looked at openness and government size in a large sample (over 140 countries in the original model) from 1995 to 2000. They found that openness had small positive effects (and even one negative coefficient) on total welfare spending and social security transfers. Yay and Aksoy (2018) found no statistical relationship between economic globalization and social transfers across the whole sample, but a positive one among social democratic welfare states and a negative one in liberal and conservative welfare states.

Across non-OECD Asian countries from 2000 to 2014 there was no influence of globalization on social spending (Potrafke 2019).

One reason why openness would lead to increases in social spending is a variant on the "domestic compensation" argument, where the welfare state programs are seen as "loser compensation." This is also called the "compensation thesis" which has been applied mostly to the Scandinavian economies (Denmark, Finland, Iceland, Norway, and Sweden) where welfare increased "in order to cope with the challenges of globalization" (Pasquale Tridico and Walter Paternesi Meloni 2018, 120). Social programs are in this view designed to cushion the blow for those who have been harmed most by a state's openness to, and reliance on, international trade, for instance workers in export-sectors who are most at risk of losing their jobs as an effect of fluctuations in the international economy (Rieger and Leibfried 2003; 2008). For countries that to a large degree are affected by external shocks (in the world economy), "the government can mitigate risk by taking command of a larger share of the economy's resources" (Rodrik 1998, 1011). On the micro level it has been found that voters who were more exposed to globalization (here in Japan and Singapore) were more likely to demand increased social expenditure than those voters who were less exposed to globalization (Sijeong Lim and Brian Burgoon 2018). Openness can on the other hand create a "race-to-the-bottom" in terms of social spending, because liberal trade policy causes politicians not to opt for redistributive policies and income taxes for revenue (Rodrik 1997).

Data and methodology
Dividing the sample

The 21 countries in this study are included on the basis of having available data for most of the twentieth century, and for representing small and large economies, as well as different types of political economies from different parts of the western economic world. Two basic divisions of the country sample are made: one where division is made into small and large economies and a second where groups of countries are divided by regional groups/political economies. The basis for the first division is by sheer economic size, or market size, measured as total GDP. This leads to the question of where to draw the line between "small" and "large" economies. Most countries in this sample are either unambiguously small

or unambiguously large. However, four countries (Australia, Canada, the Netherlands, and Spain) fall somewhere in between the distinct group of large economies and the distinctly small. Australia and the Netherlands have been assigned to the small group simply because they lie closer to the cluster of small economies, while Canada and Spain have significantly larger economies (in absolute numbers, Canada's economy was for instance twice the size of the Australian in 1990).[9] The second division is both somewhat geographical and pertains to distinct typologies of political economies. The 21 countries are divided into four regional groups: Northern Europe (Denmark, Finland, Norway, and Sweden)[10], Western Europe (Austria, Belgium, France, Germany[11], Ireland, the Netherlands, Switzerland, and the UK), Southern Europe (Greece, Italy, Portugal, and Spain)[12], and non-European (Australia, Canada, Japan, New Zealand, and the USA). These four groups roughly correspond to typologies based on political economy, with one group of social democratic welfare states (Northern Europe), conservative welfare states (Western/Southern Europe), and liberal welfare states (the non-European group). There is hence some overlap between geography and type of welfare state.[13] One can certainly discuss the various typologies and whether certain countries should belong in another group. Italy is for instance sometimes included with the Western European (or continental European) countries, which occasionally also goes for Finland. Some models group Ireland and the UK together with Australia, Canada, New Zealand, and the USA in an "Anglo-Saxon" group. One could also forego geography completely and divide countries solely by type of political economy (social democratic/conservative/liberal being the most commonly used triad).[14]

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[9] Figures on GDP across the twentieth century from the Maddison project (Jutta Bolt, Robert Inklaar, Herman de Jong, and Jan L. van Zanden 2018).

[10] Iceland is excluded due to lack of sufficient data.

[11] West Germany between 1946 and 1989.

[12] See Francis Castles (1995) and Maurizio Ferrera (1996) on whether there is a distinct South European (Greece, Italy, Portugal, and Spain) type of welfare state.

[13] See Wil Arts and John Gelissen (2010); Castles and Herbert Obinger (2008); Gösta Esping-Andersen (1990).

[14] For a collection of welfare state typologies, see Arts and Gelissen (2010, 575-576). See also Castles and Obinger (2008).

Whichever division is used there will certainly be divergences within the groups. The two that are used here are ones which can shine some light on key differences between categories of countries.[15]

Openness data

Openness to trade is generally defined as imports plus exports as divided by GDP, all in current prices. Despite its drawbacks (it does not measure a policy stance towards international trade as such, as might an average tariff or a quantitative operationalization of trade policy) it is the most commonly-used operationalization of openness to trade (Espuelas 2012; Garrett and Mitchell 2001; Lindert 2004b; Rodrik 1998). It is also one where data are available for most countries for the majority of the twentieth century. In the sample of countries here data on openness to trade are available for most years. The exceptions are: Austria 1920-1923 and 1938-1947; Germany 1944-1947; Ireland 1920-1923 and 1939-1946; Italy 1943-1946; Greece 1940-1945. Data on foreign trade and GDP to calculate openness come from the Tradhist project by CEPII (Michel Fouquin and Jules Hugot 2016). Where data in this source are missing it has been complemented with data from the various publications by Brian Mitchell (2003a; 2003b; 2007) and OECD (2019a). A policy measure of trade openness is also included to counteract possible flaws with the typical openness measure. Here the average tariff is used, which is measured as total customs revenue as share of total imports.[16]

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[15] The division in this paper is most like the country cluster in Castles (1998), which itself is Esping-Andersen (1990) plus Southern Europe.

[16] This measure is also flawed as it underestimates protectionist tariffs which hinder imports and yield little revenue. It is however the best available tariff measure over the entire twentieth century for this large sample. The average tariff has been calculated from data on imports and customs revenue in: Fouquin and Hugot (2016); Mitchell (2003a; 2003b; 2007); and OECD (2019b).

Social spending data

Data on social spending are more complicated than those on openness to trade, and to some extent also more controversial as an operationalization of welfare state efforts.[17] First, there are the various OECD series on social expenditure from 1960 to today, for instance used by Lindert (2004a). Before 1960 there are no official series, even though for instance Lindert (1994) had decadal data from 1880 to 1930. Espuelas (2012) made a great effort in collecting data back to 1950 for European countries, using data from the work of Peter Flora (1983). Two data sets have been calculated here based on Flora to extend social spending data back to 1920. By connecting this with the OECD/Lindert data sets aggregate social expenditure and spending on education stretches from 1920 to 2000. The data in Flora are however only specific by spending category from 1949. This gives spending by the four large and typical welfare state categories (health, pensions, welfare, and unemployment) from 1949 to 2000. This solves the problems for most Western European countries, but it omits a large and important part of the sample.[18] Unfortunately it has not been possible to find any social expenditure data at all from Greece before 1960. In order to estimate social spending in Portugal, Spain, Australia, Canada, Japan, New Zealand, and the US other sources have been employed. For Portugal and Spain we have used work already published by other authors.[19] US social expenditure data (from 1929) have been calculated from data in Susan Carter, Scott Gartner, Michael Haines, Alan Olmstead, Richard Sutch, and Gavin Wright (2006). Finally, data on Australia, Canada, and New Zealand (all from 1920) and Japan (from 1947) have been hand collected from statistical yearbooks of each respective country.

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[17] See the critique in Esping-Andersen (1990) of spending as one-sided instead of focusing on entitlement criteria. High spending may not necessarily entail equally high benefits because of differences in generosity and coverage (Jon Kvist 2011; Kersti Bergqvist, Monica Yngwe Åberg, and Olle Lundberg 2013). For a recent overview of this critique see Katharina Kunißen (2018).

[18] For data on the UK and Ireland Mitchell (1988) has instead been used.

[19] On Spain Espuelas (2013) before 1981. On Portugal Jose Pereirinha and Daniel Carolo (2008) and Carolo and Pereirinha (2010). Portuguese education spending however from Nuno Valério (2001).

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These series have been connected to the official OECD/Lindert series from 1960. In the cases where data have been collected from recently published sources or where statistical yearbooks have been used there have been no or minimal problems in making the data synchronized over time. However, as mentioned by Espuelas (2012), the Flora data do not match perfectly with those of the OECD/Lindert where they run over the same period (1960-1975). This can create large jumps from 1959 to 1960 for certain countries and certain categories of spending. Following Espuelas (2012), the Flora data have been re-adjusted to match up with the OECD/Lindert data from 1960. This applies to the 1949-1959 period of disaggregated spending as well as for the period 1920-1948 of aggregate spending and education spending. There are gaps in the Flora data, where some data are missing for the continental European countries (here Austria, Belgium, France, and Germany) between 1936 and 1948. Flora's data for Denmark are scarce before 1947 whereas the data for some countries do not begin until 1924 or 1925, or in the case of Switzerland 1930 and in the case of Portugal from 1937-1938. Thus, there are complete data for the following countries: Finland, Norway, Sweden, the Netherlands, UK, Italy, Australia, Canada, and New Zealand. For Spain data are missing only for the years of the civil war, from 1936 to 1939.

Apart from total social spending, data are presented by specific spending category from 1949 (education spending from 1920). The definitions of these categories have as closely as possible followed the definition by the OECD as specified in the data sets underlying Lindert (2004a). Here pension spending includes old age cash benefits, civil service cash benefits, veterans' pensions, disability benefits, and survivors' (widows') benefits. Health is defined as public health expenditure plus sickness benefits and occupational injury and benefits. Welfare includes family allowances, family cash benefits, and other cash benefits that do not fall under any of the other categories.[20] Unemployment includes compensation in cash and also includes severance pay and early

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[20] One major category in the OECD/Lindert social spending series is housing subsidies and benefits. Since it has not been able to follow this category in a consistent manner until late in the period this type of expenditure has been added to the "welfare" category where figures are available in the OECD/Lindert data.

retirement for labor market reasons. Finally, like Espuelas (2012) but diverging from the OECD standard, aggregate social spending includes public expenditure on education. Public expenditure on education at all levels (from primary to tertiary) should be redistributive to some extent and changes in the public/private mix between education regimes likely accentuate differences in the size of the total welfare state. Arguably, education was also one of the earliest public programs to develop and so it should have been an important part of the early twentieth century welfare state.

Openness to trade and social spending in the twentieth century
### *Openness to trade in the twentieth century*

The conventional story of international trade after World War Two is one of dismantled trade barriers and as a result an increase in trade and openness, trends which occurred almost everywhere. Overall openness to trade and the average import tariff (see Figure A.1 in the Appendix) followed one another closely–when the tariff increased there was a corresponding decrease in openness. Import tariffs and other barriers to trade generally increased during the Great Depression of the early 1930s, and as a result openness decreased everywhere (Douglas Irwin 2012). The fall was however steeper for small economies than the large (see Figure 1). Even if the openness of small economies relative to the large might be a feature of the post-World War Two international economy, this difference was clear already by the 1920s and 1930s. During these decades the ratio was almost twice the size in the former compared to the latter. The only time we observe a brief moment of "convergence" is during World War Two when the decrease in trade and disruption of trade routes was felt everywhere. After the war openness increased everywhere, but mostly so in the small economies of Northern and Western Europe. Post-1955, the trend was similar for the large economies, but the level of openness was consistently lower.

When the sample is divided by regional groups a couple of divergences emerge (see Figure 2). First, economies in Northern and Western Europe were significantly more open than their equivalents in Southern Europe and outside of Europe after World War Two. Second,

these economies were already more open than the other countries, even though differences were smaller between regions, during the 1920s and
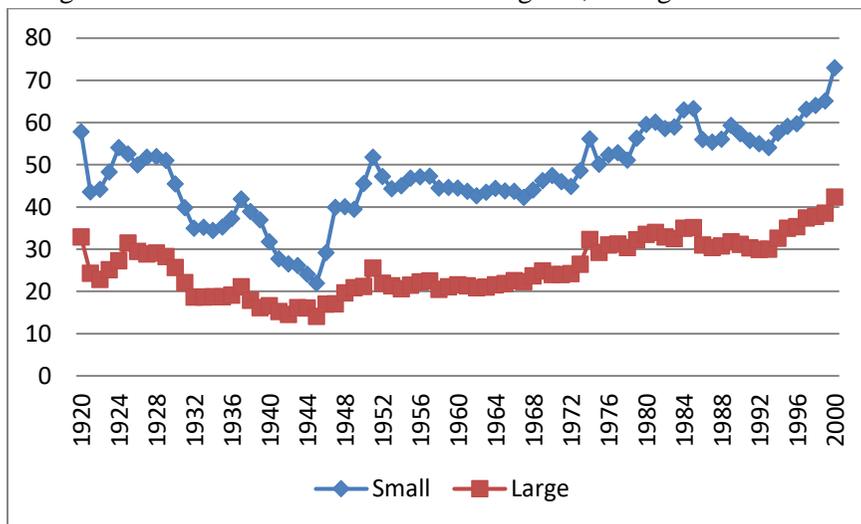
Source: See text.
Note: small economies: Denmark, Finland, Norway, Sweden, Austria, Belgium, Ireland, Netherlands, Switzerland, Greece, Portugal, Australia, New Zealand; large economies: France, Germany, UK, Canada, USA, Japan, Italy, Spain.
**Figure 1**
Openness to trade ((exports + imports/GDP)x100) by small and large economies.

1930s. Third, non-European economies were no more open, in absolute levels, between 1950 and 2000 than they were during the 1920s. Fourth, South European countries were consistently the least open and took a long time to close of the gap to the other European economies. It also seems as if the periods of dictatorship were a drag on openness to trade in Greece, Portugal, and Spain. Particularly in the two latter there was a notable increase only from the middle of the 1970s once democratic leadership was restored. This trend also accelerated once these countries had been accepted into the European Economic Community (EEC) by the second

half of the 1980s. The South European economies furthermore had much higher average tariff levels during the 1950s and 1960s.

It should be noted that there were also some notable differences within each group. Finland was markedly less open than its Nordic neighbors during the 1950s and 1960s, but from 1970 to 2000 all Nordic countries were very close to one another in level. After World War Two the West European economies were quite separated with the three large economies, France, Germany, and the UK, having the lowest openness, while Austria and Switzerland took a middle ground and Belgium, Ireland, and the Netherlands were the most open, particularly during the last two decades of the period. Italy was generally more open than Greece, Portugal, and Spain. In the non-European group there were also quite large differences, with Canada and New Zealand being more open than the other three after World War Two. The trends for these economies were generally more stagnant after World War Two, with Canada being the only exception with a clear upward trend.
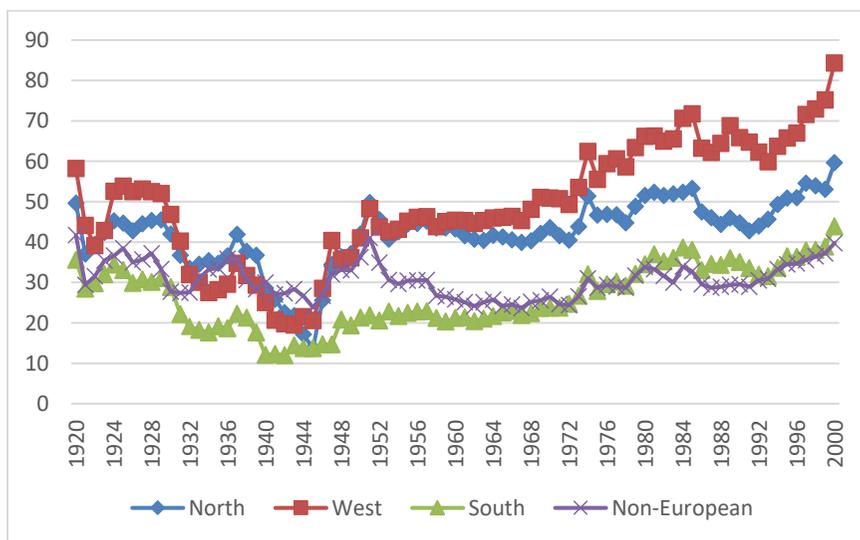
Source: see method section.
*Note*: for division of regional clubs see method section.
Figure 2
Openness to trade ((exports+imports/GDP)x100) by regional clubs.

Social spending patterns in the twentieth century

The analysis of social spending will be divided in the same way as openness was in the previous sub-section, first by economic size and then by regional club. When spending by welfare category is presented it is only done so by regional groups. As noted by Lindert (2004a) the welfare state expanded everywhere after World War Two. Social spending increased in real terms, as share of total expenditure, and as shown in Figure 3 as share of GDP. It is important to note that while the definition of social spending is overall consistent over the period, what is actually regarded as "public" changes over time within each of the welfare categories. During the 1920s and 1930s private welfare such as pensions, sick care, dental care, etc. was provided by individual private companies in several countries, such as Britain, Canada. France, and Germany (Monica Prasad 2012, 159-166). These later became parts of the public welfare programs in most countries, meaning the state took responsibility for what were earlier private provisions. This means that the growth in social spending during the twentieth century was not just due to an
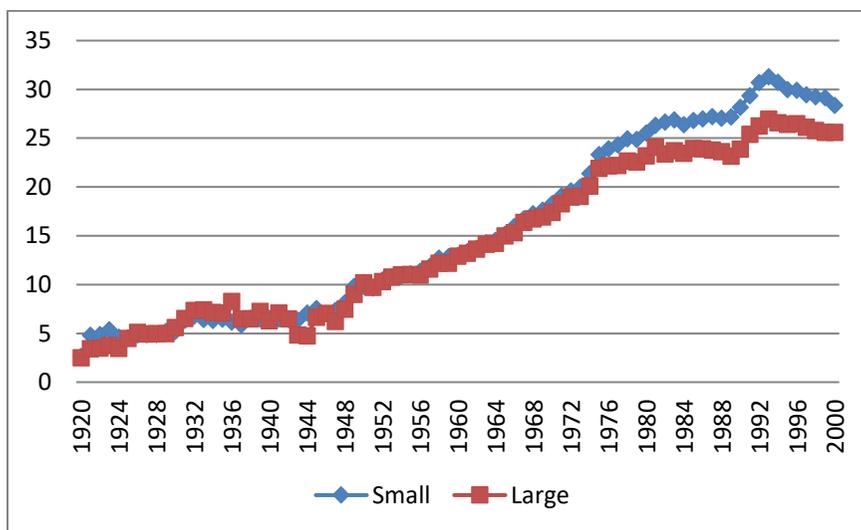
Source: see method section.

Figure 3

Aggregate average public social spending (% of GDP) by small and large economies.

absolute increase on the spending side of the public sector, but also that many programs moved from being private to public. In some cases, such as in Germany, public welfare programs developed from the private sector programs that were in place during the beginning of the century.

Contrary to what was observed for openness to trade, there were small to no discernible differences between small and large economies in terms of social spending. All the way up until the 1980s large economies spent as much on the welfare state as did the small economies. There was a divergence between the two during the 1980s and 1990s, but even then the difference was only a couple of percentage points. There therefore seems to be little support for the Katzenstein hypothesis of small economies as more socially protective. Some of the largest welfare states during the century were large economies, such as France, Germany, and the UK. Keep in mind also that Germany and the UK were early leaders in social spending, before World War Two, when they were two of the largest economies in the world. Some of the notably small economies such as Ireland, Portugal, and Switzerland also had quite small welfare states. Typically small social democratic states such as Finland and Norway were also latecomers in terms of high social spending (see Appendix for aggregate social spending by country).

Were there larger differences between regions than between economic size in terms of the size of the welfare state? The short answer is yes and that this was always the case during the period examined in this paper (see Figure 4). Countries in Southern Europe were for instance laggards in social spending from the very beginning up until the 1980s when they surpassed the non-European group and started to close the gap with the West European. Differences were of course small during the early decades when the public welfare state was small everywhere, but differences really accelerated between 1950 and 1970. The Nordic countries were at quite similar levels to their European neighbors, but only took the lead after the middle of the 1980s. The difference between the two groups was notable during the early 1990s, but this divergence lasted for a short period of time. As with openness there were also key differences within the regional groups in social spending (see spending by country in the Appendix).

Figure 5 below maps spending on healthcare and related programs in our four regional groups. The one defining trend is that differences

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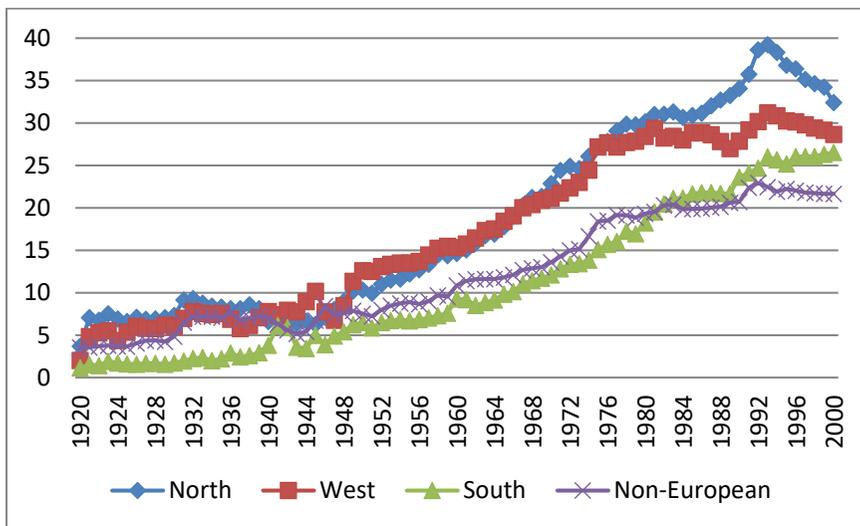
Figure 4

Aggregate public social spending (% of GDP) by regional clubs.
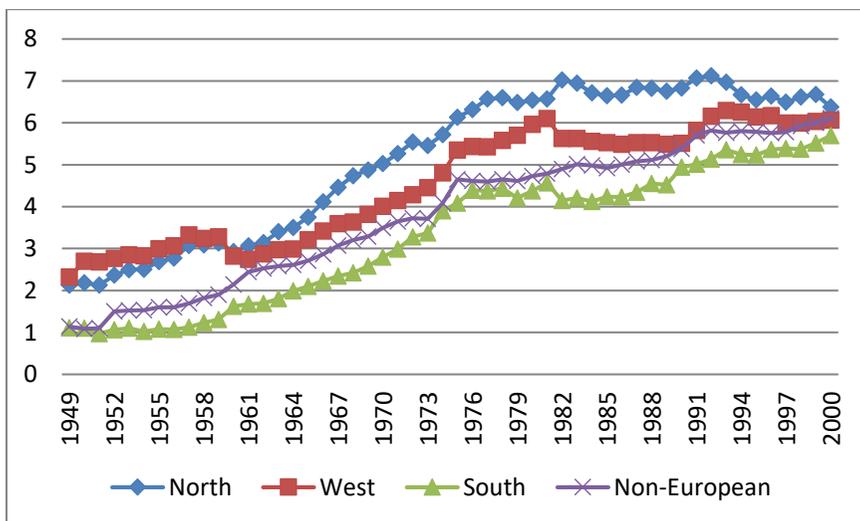
Figure 5

Health spending (% of GDP) by regional clubs.

between the groups grew smaller as the period progressed. During the 1950s and 1960s the Northern spent almost two to three times what the countries in Southern Europe did, but the difference started to diminish quite rapidly from the early 1970s onwards. It seems as if the era of dictatorship in Portugal and Spain hampered healthcare spending. During the 1990s the difference between the two regional groups had reduced to only one to two percentage points. The four countries in Northern Europe however held their healthcare spending lead position throughout the period. Here there was little divergence between the countries of Western Europe and the non-European from 1960 and forward. The US stands out as a country which has still not adopted obligatory public sickness insurance and universal health care. Canada on the other hand did adopt these programs, but comparatively very late (in 1971 and 1972 respectively). Sickness insurance was for instance put in place as early as 1883 in Germany, 1910 in Sweden, and in 1911 in the UK (Robert Kudrle and Theodore Marmor 1981, 83).

An almost reverse trend was discernible for spending on pension and elder care programs (Figure 6). Here differences were smaller in the beginning of the period, but grew between all European economies and the non-European as the period went on. Here the main breaking point was from 1980 when pension spending leveled out in North America and Asia-Oceania, while it continued to increase in most European countries. Pension spending was relatively high in Australia, Canada, New Zealand, and the US in the aftermath of World War Two because of programs related to war veterans.[21] Another reason for the slow growth of pension spending in these countries is that the share of old-age population in these countries did not grow as fast as in most European countries. Pension spending in Southern Europe was also lagging behind the other European countries, but caught up towards the end of the 1970s.

Spending on the "welfare" category includes many different programs, but generally the largest are different types of cash transfers such as family allowances and similar transfers. This is however one spending category where quite large differences which persist over time exist between the regional groups (Figure 7). Cash transfers and

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[21] See also Obinger and Carina Schmitt 2018.
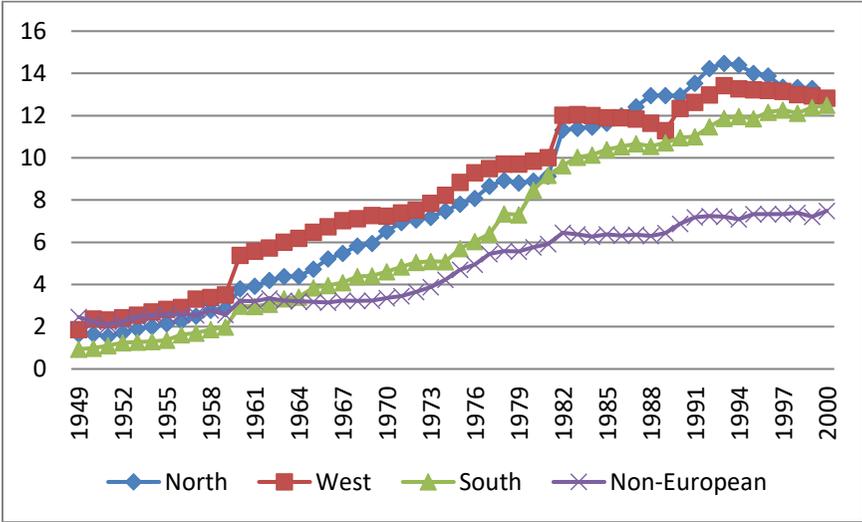
Figure 6
Pension spending (% of GDP) by regional clubs.
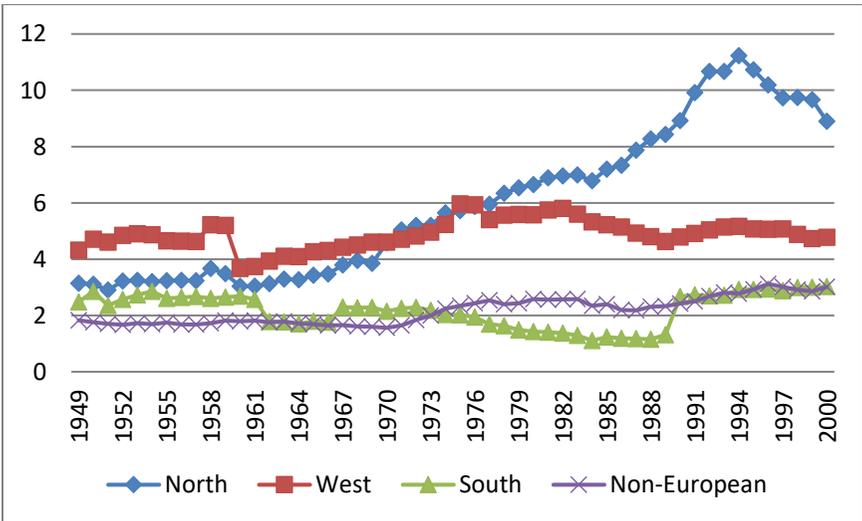
Figure 7
Welfare spending (% of GDP) by regional clubs.

allowances were generally higher and more generous in Northern and Western Europe compared to Southern Europe, North America, and Asia-Oceania. There were also clearly diverging trends over the period, where welfare spending increased mostly in Northern Europe, slightly less in Western Europe, not at all in the non-European countries, and had a downward trend in Southern Europe. Over time it hence seems that this category makes up quite a large part of the differences in total social spending between the regional groups in our sample. Espuelas (2012, Table 4, 220) has however shown that spending specifically on family support as a share of total spending was among the very highest in Portugal and Spain relative to countries in Northern and Western Europe between 1950 and 1970. In Portugal family allowances were meant to serve as a complement to the male wage. Espuelas (2012, 220) continues to say that "family allowances were, therefore, an anti-poverty measure but also an anti-feminist policy aimed at keeping women out of the labor market."

For the last of the OECD categories of social spending we turn to spending on unemployment benefits (Figure 8). This is arguably the
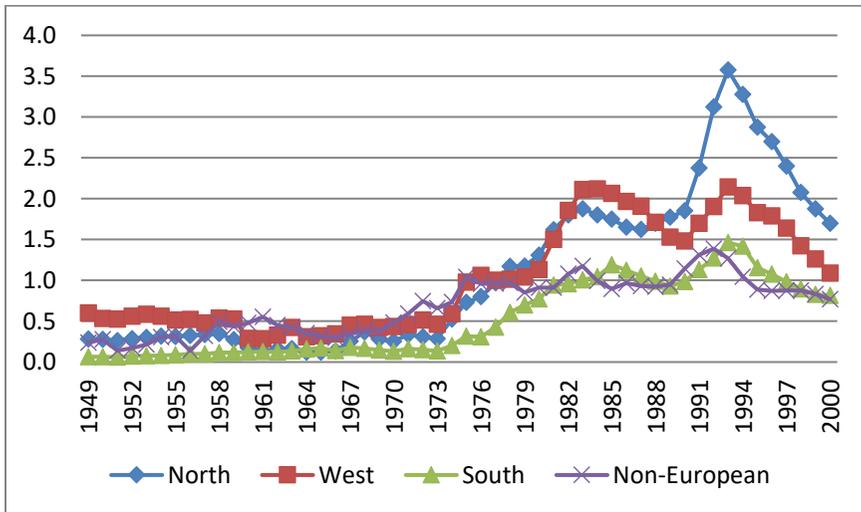

Source: see method section.
Note: for definition see method section.
Figure 8
Spending on unemployment benefits (% of GDP) by regional clubs.

welfare state program which would most likely be affected by globalization according to the compensation hypothesis, since it would directly cushion the blow for those workers who might lose out to international competition. These types of programs were generally the last to be fully implemented in the modern welfare state. Many voluntary unemployment insurance schemes were adopted around Europe during the early stages of the twentieth century, but would become obligatory at different times. This occurred as early as 1911 in the UK, 1919 in Italy, and 1920 in Austria, but did not happen until 1949 in the Netherlands, 1967 in France, and 1976 in Switzerland (Jens Alber 1981, 156). Portugal did not adopt a scheme for unemployment benefits until 1975 (after the end of dictatorship) but spending was zero until 1977. Denmark, Finland, and Sweden stand out as countries that never made this type of program obligatory. This kept the level of spending down in many countries. Another factor to explain the late rise of unemployment benefits is the fact that coverage developed slowly. In 1920 about 16 percent of the European labor market was covered by unemployment insurance. This figure rose over the coming decades, but was still only 37 percent by 1950. As late as 1975 it was 63 percent.[22] A third reason is that unemployment spending generally followed the unemployment rate, which was low overall during the late 1950s, 1960s and early 1970s. Following the Oil Crisis of 1973 unemployment rates rose, and increases in spending followed. As a result of rising unemployment the generosity (duration, level, and universality of benefits) of programs related to the labor market also increased markedly across countries, which in itself led public spending to grow. The increase in average generosity across the sample occurred mainly from 1971 to 1978 after which it leveled out (Lyle Scruggs, Detlef Jahn, and Kati Kuitto 2014).[23] In general, countries which had a high degree of generosity and saw increases in unemployment also spent more on

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[22] It is also important to note that there were large differences between countries. In 1975 82 percent of the Norwegian labor market was covered, while this figure was only 29 percent in Switzerland. All coverage data from Flora (1983).

[23] Also here there were notable differences between countries over time.

unemployment benefits.[24] Countries such as Denmark and the Netherlands were particular outliers in spending during the late 1970s and early 1980s. Between 1979 and 1981 Denmark spent as much as five percent of GDP on unemployment benefits. The large rise in this spending in the Northern European countries during the early 1990s followed the economic crisis which struck the countries hard. Where the unemployment rate rose the most, spending also became particularly high, such as in Denmark and Finland. Even towards the end of the period there were large differences in countries' generosity of unemployment benefits. For instance in 1999 Danes were eligible to collect unemployment benefits for up to 60 months, compared to 6 months for Italians and British (Gayle Allard 2005, 2).

Figure 9 below shows all public spending on education (from primary to tertiary education) in our four regional groups. Differences in education spending were quite large between the regional groups, and those which
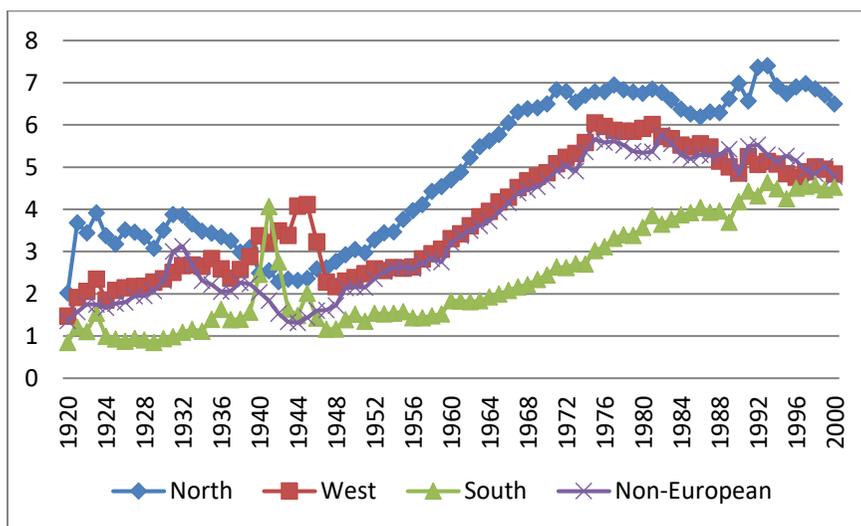
Source: see method section.
Note: for definition see method section.
Figure 9
Education spending (% of GDP) by regional clubs.

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[24] There was only really one exception to this among the countries studied here. New Zealand saw a slight decrease in the generosity of unemployment benefits but spending still rose notably during the 1980s.

spent more on education during the 1920s and 1930s also spent more during the 1980s and 1990s. The North European countries were early education leaders, something which was lost during World War Two when spending dropped by half on average. The lead was then taken back soon after the war and was never lost again. In general education expenditure increased sharply between the late 1940s and the late 1970s (although it peaked a decade earlier in Denmark, Finland, Norway, and Sweden). The sharp contrast between education in Northern Europe and Southern Europe persisted throughout the century, even though differences were smaller during the 1990s.[25] As late as 1992 the northerners spent almost twice as much as the southerners. Differences were small to none between the West European countries and the non-European, with World War Two being the only exception.

Testing openness and social spending patterns

This section will try to assess whether openness to trade had any effect on social spending levels during the twentieth century. We test this on total social spending, as well as on the five main categories: health, pensions, welfare, unemployment, and education. Total social spending and education will be tested from 1920 to 2000 (split into the sub-periods 1920-1948 and 1949-2000), while health, pensions, welfare, and unemployment will be tested from 1949 to 2000. This means there are in total eight regressions and eight relationships to analyze. The main variables have been defined and presented earlier in the paper. As a control for the openness of trade policy an average tariff measurement is added in a separate regression, presented in the Appendix (Table A.2). A number of controls are included: the level of GDP per capita expressed in 1990 international dollars, GDP growth, the share of the old age population (aged 65 and above) in the total population, and voter turnout (total votes as share of the voting age population—"VAP turnout"). The level of GDP is expected to have a positive sign regardless of spending category. As

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[25] Disregarding the trend during World War Two when Italian education spending skyrocketed briefly, which pushed up the Southern average sharply. This could be connected to Italy's entrance in the war in June of 1940, if military education was included in the general education budget.

countries grow richer the possibility for taxation increases and so also spending. The expected effect of economic growth is less clear. Times of crisis can increase spending levels in certain programs such as unemployment benefits and cash transfers in social security and family allowances.[26] At the same time high and sustained growth levels should have had positive effects on the main welfare state programs.[27] The share of old-age population should have positive effects on all programs except for education where the sign is expected to be negative.[28] According to the argument presented by Lindert (2004a) the extension of the vote should have had an initial upward impact on social spending. VAP turnout should capture this effect regardless of spending program, but that effect might fade out once voting rights have been extended to all groups. It should be noted that turnout is modeled as zero for countries which were dictatorships during certain periods.[29] Hence, the model could capture some positive effect of the (re)-instatement of democracy in these regimes.[30] When testing spending on unemployment benefits we also include the unemployment rate as a control.[31]

As mentioned briefly earlier the timing of when a particular welfare program (sickness insurance, unemployment insurance, family benefits, old age insurance, etc.) was adopted and implemented probably explains part of why countries were leaders or laggards in public social spending. We can expect early adopters (for instance Austria, Denmark, and Germany) to have higher levels of social spending at earlier points in time

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[26] Naren Prasad and Monica Gerecke (2010) found a positive connection between economic crisis and spending, and particularly that more advanced economies were leaders in countercyclical spending.

[27] GDP and GDP growth data come from Bolt et al. (2018).

[28] Demographic data from Mitchell (2003a; 2003b; 2007).

[29] These countries are: Germany 1934-1948 (no new elections until 1949), Italy 1929-1945, Greece 1967-1973, Portugal 1926-1974, and Spain 1937-1976.

[30] Turnout data from: Daniele Caramani (2000); Chris Cook and John Paxton (2001); Florian Grotz, Dieter Nohlen, and Christof Hartmann (2001); International Institute for Democracy and Electoral Assistance Voter Turnout Database; Nohlen (2005); and Nohlen and Philip Stöver (2010).

[31] Data on unemployment from Mitchell (2003a; 2003b; 2007), connected with the OECD series from 1955, in *Annual Labour Force Statistics Archive*. (OECD 2018). Unfortunately there is a lot of missing data on Greece and Portugal before 1974. There are no data on France and Spain before 1956.

than later adopters (for instance Canada, Japan, Portugal, and the USA).[32] Countries which adopted certain programs late in the period will be able to catch up to the leaders to some extent, but will unlikely move ahead before the end of the period. It would make sense to include some variable to control for the "age" of each country's welfare state. However, this proves difficult in practice. Deciding an average age of the welfare state by looking at which year certain programs were put into place will create a static non-time variant variable. Measuring the distance to the year of program adoption will create a very autocorrelated variable. Furthermore, the age of the welfare state and the level of social spending will to some extent measure the same thing ("the extent of the welfare state"). For that reason the adoption of the welfare programs is partly already included in the dependent variable.[33]

As seen in Table 1 there is a maximum of 1701 observations across all cross-sections (21) and years (81). Because of missing data for some of the variables the actual number of observations in the regressions will eventually be lower. The data are also tested for different periods: the first being from 1920 to 1948, and the second from 1949 to 2000. This is done for two reasons: first, plausibly the connection between trade and the welfare state was different during the turbulent period before and during World War Two; second, for the second period it is possible to regress our variables on total social spending as well as the five sub-categories.

Before presenting the results a few characteristics of the model need to be addressed. The time series cross section (TSCS) model we have yields some particular problems that need to be taken care of. First, statistical research has pointed to problems with testing longitudinal cross-section data. Particularly models which have a number of included periods (T) that are close to the number of cross sections (N) have tended to yield

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[32] Christopher Pierson (2004) presents the year of adoption for all the major welfare state programs by country. The early and late adopters above have been measured as the average year that these programs were put in place.

[33] When the lagged dependent variable is tested for it has a positive sign and is significant until the 20th lag. This would indicate some effect of the "age" of the welfare state (high social spending earlier in time will yield higher social spending later), even though it is an imperfect measure. The lags are not included in the original model nor reported since they disturb the effect of openness and GDP (sign changes to negative on the shorter lags), indicating high collinearity.

large standard errors when tested with generalized least squares (GLS). This problem decreases as (T) increases relative to (N), but still persists even when (T) is three times that of (N). The solution to this as suggested by Nathan Beck and Jonathan Katz (1995) is to use OLS, but include a measure of panel corrected standard errors (PCSE). This will correct the measurement of standard errors and t-statistics, but will not affect the coefficients.

The PCSE estimation can also be used to correct for heteroscedasticity between cross sections, which is a common problem. In two of the specifications there is a (T) almost four times that of (N) (81 periods with 21 cross sections) which is a more uncertain situation according to Beck and Katz (1995), but OLS-PCSE will still be used in all regressions for comparability. Four of the specifications have a (T) 2.5 times that of (N),

Table 1

Summary statistics for regression variables.

Variable	Obs	Mean	Std. Dev.	Min	Max
Socx	1,530	16.09966	9.970267	0	41.58403
Health	1,079	4.28627	1.81793	.1442138	8.83
Pension	1,079	7.153547	4.350944	.0715227	16.99943
Welfare	1,079	3.942553	2.837569	.0951475	14.04107
Unempspend	1,079	.8720474	.9703283	0	5.3
Education	1,513	3.865793	1.837308	.4905461	8.47
Open	1,661	39.44323	21.25277	3.37e-10	152.0498
Tariff	1,583	8.535156	8.242845	0	57
GDP	1,700	13311.35	9249.595	1287	54594
Growth	1,699	2.893313	6.103605	-58.22862	67.36089
Oldage	1,701	10.28368	3.233307	4.4	20.08107
Vote	1,673	65.84503	25.64977	0	99.57
Unemrate	1,028	5.246693	4.116397	0	24.2

when spending by category is tested between 1949 and 2000.[34]

The openness variable has a negative sign on total social spending and education expenditure between 1920 and 1948 (Table 2).[35] This might be a result of the fact that openness decreased both during the Great Depression and plummeted during World War Two while spending in most cases increased in both periods. The negative sign of GDP and economic growth indicate the same. Periods of de-globalization were hence connected with an expansion of the welfare state. Effect sizes were rather minor however, as a one percentage point increase in openness is associated with 0.02 percentage point decrease in total social spending and with a drop of 0.007 percentage points in education expenditure. Though, as we saw in the previous section this expansion was smaller than it would be during the immediate post-World War Two period. Instead the share of elderly in the population and the extension of the democratic vote seem to have the generally largest positive effects, in line with Lindert (2004a). The result is also similar to that of Alberto Alesina, Edward Glaeser, and Bruce Sacerdote (2001) who found a small effect size for openness to trade, but a large one for the share of elders in the population.

Table 3 shows the regression results from 1949 to 2000, where total social spending and the five categories (unemployment, welfare, pension, health, and education) are tested. Openness had a positive effect on total social spending, unemployment spending, pension spending, and health spending, while it was found to be negative on welfare and education expenditure. The effect size was quite small regarding unemployment and health spending (0.007 and 0.006 percentage points respectively), while it was notably larger on pensions and total social spending (0.05 and 0.04 percentage points respectively). These effect sizes pale in comparison to the positive effect of an aging population, where a one point increase

Table 2

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[34] The panels are however unbalanced because of missing data points, meaning the number of observations will not add up exactly according to (T) x (N).

[35] Following the recommendation by the American Statistics Association p-values are presented as continuous rather than threshold values (p <0.05). Therefore no stars are presented nor is high or low significance mentioned. See Ronald Wasserstein, Allen Schirm, and Nicole Lazar (2019).

Determinants of aggregate social spending (1) and education
spending (2) (1920-1948)

	(1)	P-value	(2)	P-value
Openness	-.02002423	0.278	-.0070964	0.355
	(.0181279)		(.00747)	
GDP	-.0005273	0.010	-.0001878	0.003
	(.0001836)		(.0000549)	
Growth	-.0072444	0.695	-.0121273	0.018
	(.0182123)		(.0046406)	
Old age	1.346443	0.000	.1795151	0.060
	(.2580145)		(.0894545)	
Vote	.0221418	0.051	-.0003942	0.945
	(.0106148)		(.0056382)	
Constant	-1.621754	0.406	2.342756	0.004
	(1.908965)		(.7201891)	
Observations	433		419	
R-squared:				
within	0.2741		0.1259	
between	0.0295		0.0025	
overall	0.0796		0.0186	

Notes: Time and panel (country) fixed effects. Robust standard errors in
parenthesis.

Table 3

Determinants of unemployment spending (1), welfare spending (2), pension spending (3), health spending (4), education spending (5), and aggregate social spending (6), (1949-2000)

	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Openness	.0071151	0.255	-.0028791	0.926	.0495498	0.028	.0062983	0.392	-.0036723	0.770	.037371	0.364
	(.006072)		(.0304578)		(.0208387)		(.0071957)		(.0123891)		(.0402416)	
GDP	5.70e-06	0.639	.000733	0.289	.000196	0.002	.0001223	0.000	-.0001024	0.006	.0004651	0.000
	(.0000119)		(.0000672)		(.0000538)		(.0000271)		(.000033)		(.0000998)	
Growth	-.0154059	0.023	.0171883	0.455	-.10630705	0.001	-.0481295	0.001	-.0357769	0.011	-0.1704594	0.003
	(.0062472)		(.0225368)		(.0288851)		(.0117094)		(.0127837)		(.0513642)	
Old age	.052912	0.386	.0644377	0.689	.7211669	0.007	.1964707	0.036	.0401232	0.738	1.14178	0.045
	(.0597269)		(.1584636)		(.2381195)		(.0874759)		(.1182147)		(.5346609)	
Vote	-.0052412	0.183	-0.0008773	0.940	.0188366	0.098	.0152876	0.001	.0216452	0.003	.0662387	0.003
	(.0037976)		(.011456)		(.01084)		(.0037497)		(.006179)		(.0198832)	
Unemploy	.1513871	0.000										
	(.0122257)											
Constant	-.4929835	0.410	1.997713	0.200	-8.074365	0.000	-1.450486	0.034	.8930081	0.313	-7.404853	0.041
	(.5858841)		(1.505618)		(1.505509)		(.6387678)		(.8625232)		(3.388909)	

	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Observations	1026		1079		1079		1079		1081		1081	
R-squared:												
within	0.6192		0.1419		0.8110		0.7701		0.4569		0.7754	
between	0.4048		0.0055		0.3672		0.4975		0.4507		0.6015	
overall	0.5669		0.0555		0.6805		0.7057		0.4521		0.7174	

Notes: Time and panel (country) fixed effects. Robust standard errors in parentheses.

increased health spending by 0.2 percentage points, old age pensions by 0.7 percentage points and total public social spending by 1.1 percentage points. Overall, the results are most similar to those found by Espuelas (2012), with the exception of pensions.[36] The negative effect size on education and welfare was similarly rather small. The results clearly indicate that openness to trade has different effects on different welfare state programs, a result in line with previous research on healthcare expenditure and globalization.[37] The results are more difficult to reconcile to the compensation hypothesis since the effect on welfare cash transfers and similar programs was negative. This would arguably be the program where those losing out from globalization can be compensated by the increasing state responsibility. One reason for the negative impact on welfare cash transfers (social security spending) could be found in the data, where this expenditure leveled out early in many countries. Other than in the North European economies the levels were largely stagnant from the 1970s onwards while openness continued to increase. Something similar could be said for education expenditure which leveled out from the late 1970s, other than in the South European economies. However, a positive impact on unemployment benefits would suggest that workers at risk of losing their jobs are compensated as a result of globalization. When the openness variable is switched out for a measure of average tariffs (trade policy openness, see Appendix Table A.2) the effect was negative during the period 1920 to 1948, further indicating that de-globalization was connected to expenditure increases. During the postwar period the effect from decreased tariffs was positive on all spending categories. This indicates that there were slightly different effects from changes to trade policy than to openness, as increased liberalization clearly led to expansion

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[36] Why globalization would have a possible impact on pension and old-age spending is less clear-cut, since it does not directly conform to the compensation hypothesis. Early debates on welfare programs and international trade however indicate that social programs of all types would benefit workers, particularly in tradable sectors. Pensions would do so since they "reduced lifetime uncertainty about the flow of income and smoothed consumption expenditure" (Michael Huberman 2012, 26). The labor force in tradable sectors might therefore have argued for expansions of pensions programs across the twentieth century.

[37] Fervers et al. (2016), who however found that globalization had a negative impact on health spending.

of all aspects the welfare state. The effect sizes were generally also larger when using the tariff variable.

The signs for the openness variable remain unchanged when government ideology is controlled for (see Appendix Table A.3). Contrary to what could be expected a left-wing government is shown to have decreased social spending across all categories over the whole research period.[38] This could relate to how the variable is measured, where a dummy does not properly control for the effect of having a left-wing government. Countries which did not have a left-wing government at any point during the period were among those with the lowest public social expenditure, as was the case with Canada, Ireland, and Switzerland. Other countries with very few years of left-wing government were also typical low spenders, such as Japan and the USA. Several of the highest spenders have however had a long tradition of left-wing government, particularly Denmark, Norway, and Sweden, in the post-World War Two period.[39]

Conclusions

What is the connection between globalization and the growth of the modern welfare state? If we look at trade during the twentieth century we find that small economies were generally more open than were large economies, but there was no real difference between them in size and growth of the welfare state. Small economies were not more distributive than large economies nor did they necessarily have a higher degree of domestic compensation policies, somewhat contrary to Katzenstein's hypothesis.[40] Rather, large differences were instead found between clusters of countries. Countries in Southern Europe and outside of Europe were both generally less open to trade and had lower social spending. In particular Greece, Portugal, and Spain were already laggards in openness and social spending at the beginning of the period and did not start to catch up until the late 1970s and 1980s. These countries were integrated into the

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[38] See Potrafke (2009) for the opposite result.

[39] Data on government ideology from Thomas Brambor, Johannes Lindvall, and Annika Stjernquist (2017).

[40] Katzenstein did not analyze countries in Southern Europe or outside of Europe, but even in his sample countries like Norway and Switzerland had lower social spending than some large economies for most of the twentieth century.

EEC late, meaning their trade policies were opened up later than the rest of Europe. In the case of the latter two there are strong indications that the periods of dictatorships hampered both openness and social spending (see Espuelas 2012). The fact that early leaders in public social expenditure were those countries which generally had the highest spending levels throughout the century suggests there were lock-in effects. These effects were then probably exacerbated by the experience of non-democracy in the South, for instance that the extension of the vote took much longer (Lindert 2004b).

There were some notable differences in welfare categories as well. Cash transfers were smaller in Southern Europe, North America, and Australasia than in Western and Northern Europe. Southern Europe was closer to their European neighbors in pension spending, while this expenditure type leveled out in the non-European group after 1980. Differences in spending on the labor market were generally smaller.

The results show that openness to trade has not yielded a race-to-the-bottom in terms of spending, but it neither lends full support to the domestic compensation thesis. Both "real" openness and trade policy openness overall had a positive effect on the growth of welfare state programs. Economies which were typically open after World War Two may have mitigated the effects of globalization, for instance by adopting fiscally efficient tax schemes by not taxing activities related to globalization and instead relying heavily on domestic consumption and income taxes (Jude Hays 2003; Prasad and Yingying Deng 2009). However, openness had a negative impact on social security cash transfers, arguably one of the major domestic compensation categories. This lends further support to the idea that there is not a uniform impact of globalization on the welfare state, but the differences between programs need to be taken into account.

This paper has focused on one clearly defined aspect of globalization, openness to trade, with two operationalizations, trade openness as such and the openness of trade policy. More research is needed on other types of openness, for instance to capital and migration, in the long run for a variety of countries to truly gauge what has been the overall effect of globalization on the welfare state.

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Appendix
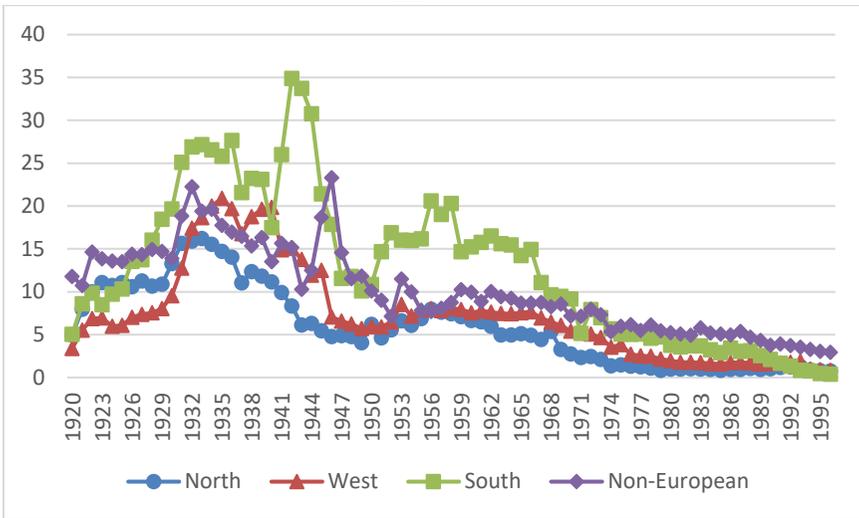
Source: See method section.
Note: For division of countries see method section.
Figure A.1
Average tariff (customs revenue/imports) by regional clubs (unweighted averages).
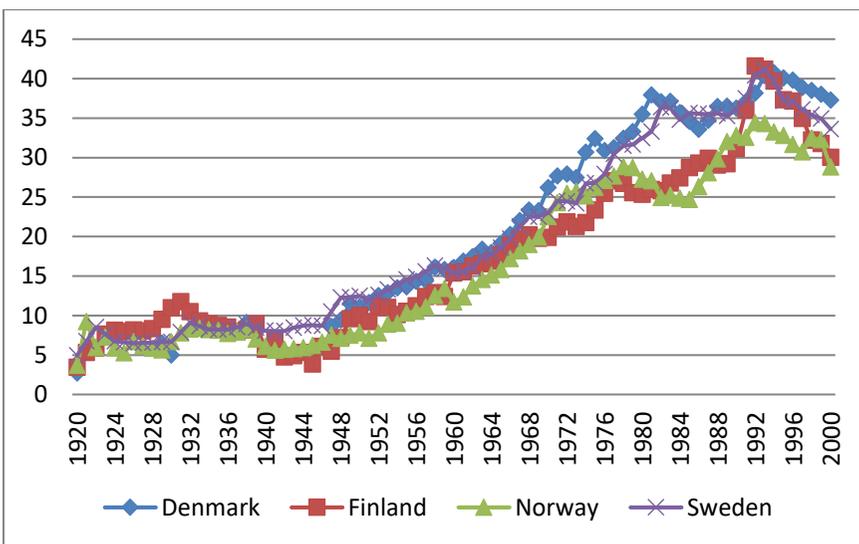
Source: See method section.
Figure A.2
Total public social spending in the North European countries.
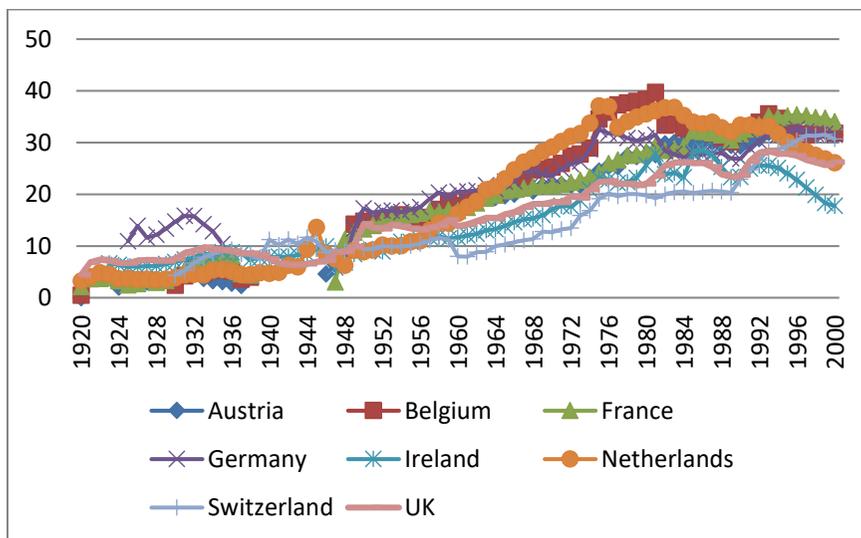
Source: See method section.

Figure A.3

Total public social spending in the West European countries.
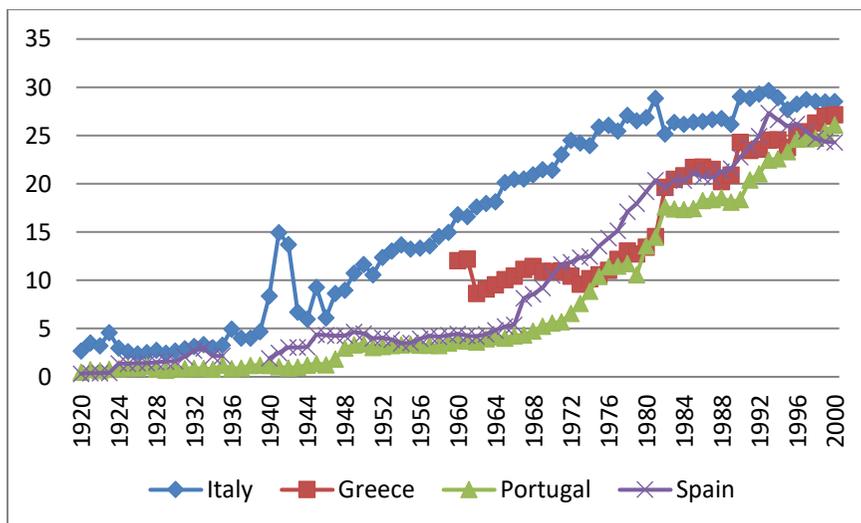
Source: See method section.

Figure A.4

Total public social spending in the South European countries.
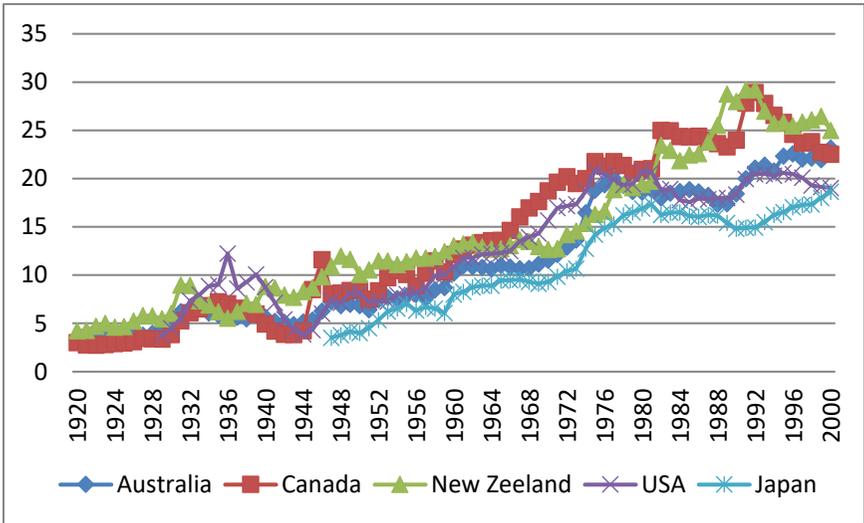
Source: See method section.
Figure A.5
Total public social spending in the non-European countries.

Table A.1

Determinants of aggregate social spending (1) and education spending
(2) (1920-1948) with tariff variable instead of openness.

	(1)	P-value	(2)	P-value
Tariff	.0323406	0.177	.0132391	0.197
	(.0230706)		(.0098732)	
GDP	-.0005309	0.011	-.000187	0.003
	(.0001882)		(.0000548)	
Growth	-.0085242	0.636	-.0124449	0.015
	(.0177045)		(-.0046518)	
Old age	1.00898	0.000	.1898035	0.103
	(.2737343)		(.1105549)	
Vote	.0266675	0.022	.0011811	0.838
	(.0107011)		(.0056802)	
Constant	-3.478705	0.047	1.735072	0.012
	(1.637401)		(.6168501)	
Observations	439		424	
R-squared:				
within	0.2900		0.1372	
between	0.0469		0.0042	
overall	0.1045		0.0283	

Note: Time and panel (country) fixed effects. Robust standard errors in
parentheses.

Table A.2

Determinants of unemployment spending (1), welfare spending (2), pension spending (3), health spending (4), education spending (5), and aggregate social spending (6), (1949-2000), with tariff variable instead of openness

	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Tariff	-.0203268	0.332	-.0211443	0.685	-.0417233	0.410	-.0556412	0.018	-.0602488	0.026	-.215078	0.077
	(.0203268)		(.051407)		(.0495675)		(.0215554)		(.0250115)		(.1154364)	
GDP	.781e-0.6	0.590	.0000116	0.824	.0002279	0.003	.0001493	0.000	.0001207	0.000	.0005047	0.000
	(.0000143)		(.0000517)		(.0000681)		(.0000298)		(.0000273)		(.0001119)	
Growth	-.018057	0.010	-.0048892	0.832	-.1037069	0.002	-0.335055	0.006	-.0194627	0.129	-.144221	0.017
	(.006363)		(.0227667)		(.0283296)		(.0108355)		(.0123068)		(.0553017)	
Old age	.0573824	0.479	.1998955	0.327	.7658737	0.001	.1092076	0.305	-.0153104	0.874	1.080478	0.040
	(.0794862)		(.1990907)		(.2012222)		(.1037957)		(.0951115)		(.4915449)	
Vote	-0.0059578	0.083	-.0056031	0.574	.0154458	0.118	.0109727	0.000	.0145147	0.004	.0445459	0.010
	(.0032686)		(.0097985)		(.0094484)		(.0024044)		(.0045052)		(.0157407)	
Unemploy	.1434323	0.000										
	(.0130323)											
Constant	-.0779014	0.930	1.765807	0.451	-6.507848	0.001	-.0199906	0.981	1.916584	0.046	-3.00392	0.513
	(.8716865)		(2.294492)		(1.583651)		(0.8214814)		(0.8999535)		(4.513896)	

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	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Observations	953		1006		1006		1006		1008		1008	
R-squared:												
within	0.6043		0.1007		0.8210		0.7953		0.5500		0.8073	
between	0.2515		0.1417		0.3958		0.3079		0.4288		0.4736	
overall	0.4857		0.1093		0.6920		0.6620		0.5122		0.6996	

Notes: Time and panel (country) fixed effects. Robust standard errors in parentheses.

Table A.3

Regression results (1920-2000) with left-wing government dummy included. Same dependent variables as in Table A.2.

	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Openness	.0069683	0.261	-.0033719	0.909	.0492558	0.025	.0062049	0.397	-.0042379	0.636	.0446189	0.215
	(.0060228)		(.0290776)		(.0203792)		(.0071671)		(.0088287)		(.0348251)	
GDP	6.60e-06	0.596	.0000784	0.249	.0001991	0.001	.0001233	0.000	.0000967	0.004	.0004218	0.000
	(.0000123)		(.000066)		(.000054)		(.0000271)		(.00003)		(.0000979)	
Growth	-.0155154	0.024	.0164076	0.448	-.1067732	0.002	-.0482774	0.000	-.0209728	0.000	-.0637184	0.018
	(.0063269)		(.0212016)		(.0295081)		(.011625)		(.0046662)		(.0246774)	
Old age	.0521538	0.392	.0653651	0.684	.7217202	0.007	.1966464	0.036	.132569	0.152	1.520445	0.001
	(.0595507)		(.1584346)		(.2387649)		(.0874331)		(.0890978)		(.3706479)	
Vote	-.0049238	0.213	.0018138	0.874	.0204421	0.070	.0157975	0.001	.014598	0.010	.0604255	0.003
	(.0038266)		(.0113019)		(.0106619)		(.0038514)		(.0050951)		(.0180238)	
Left-wing	-.0964435	0.233	-.5898485	0.006	-.3518986	0.337	-.1117672	0.405	-.0938391	0.559	-.2177282	0.706
	(.0784633)		(.1914574)		(.3575714)		(.1313238)		(.1578749)		(.5679896)	
Unemploy	.1519921	0.000										
	(.012012)											
Constant	-.4901882	0.412	1.9021	0.222	-8.131407	0.000	-1.468604	0.032	.318923	0.618	-11.73031	0.000
	(.5848657)		(1.50912)		(1.505076)		(.638316)		(.6292115)		(2.404225)	

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	(1)	P-value	(2)	P-value	(3)	P-value	(4)	P-value	(5)	P-value	(6)	P-value
Observations	1026		1079		1079		1079		1499		1513	
R-squared:												
within	0.6213		0.1578		0.8122		0.7708		0.5837		0.8390	
between	0.4010		0.0012		0.3541		0.4840		0.3386		0.7058	
overall	0.5653		0.0424		0.6775		0.7027		0.5255		0.8118	

Notes: Time and panel (country) fixed effects. Robust standard errors in parentheses.