Copenhagen Business School

Master's Thesis

M.Sc. in Advanced Economics and Finance (cand.oecon)

Defining the political battlefield

An explorative approach

Authors:

Christian Ekman Elmquist (124193)

Frederik Søgaard Sørensen (102814)

Supervisor:

Professor MSO

Lisbeth La Cour

Copenhagen, May 15, 2020

Department of Economics

Copenhagen Business School
HANDELSHØJSKOLEN

Contract number: 15716

Number of pages: 116

Number of characters: 224,241

Abstract

This study adds methodological innovation and new insights to the existing literature on political self-placement and the political left-right scale. By using data from all currently available rounds of the European Social Survey on voter behavior across twelve countries, we investigate correlations between a large range of variables and political self-placement. We use elastic net regressions to identify the most important variables in the data, which we use in various econometric models to find the significance and the direction of coefficients. First, we find that being religious and satisfied with the current state of society is highly correlated with right self-placement, while being pro-equal rights and pro-immigration is highly correlated with left self-placement in most countries. Second, we find that post-communist countries significantly deviate from other countries, indicating that these countries have yet to define the left and right of politics. Third, we find that both new and old political issues influence the political battlefield, such giving support for the pluralization theory. Fourth, we provide evidence for a modification of the modernization theory underlining that as countries develop economically, they converge in many political respects while still being distinct due to their cultural and historical heritage. Finally, we believe to be the first to document a relationship between being politically active and associating with the political left and a relationship between being satisfied with society and associating with the political right.

Contents

List of Figures

List of Tables

1 Introduction

When Karl Marx was still alive and proposing his theories in the late 19th century, only a few countries were already industrialized. He proposed that the developed countries would lead the way for less developed countries, and that the modernization of lesser developed countries would lead to a cultural convergence around the globe. This would further reduce the importance of religion and traditional cultural values, he thought. Further, the increasing size of the working class would lead to a proletarian revolution and the end of history (Inglehart and Baker, 2000). However, it has later become evident that the proletarian revolution was not an inevitable truth. Further, as countries have become increasingly developed, it is difficult to argue for a perfect convergence along a linear path, as envisioned by Marx. As the East Asian countries started to grow economically, they grew fast and often overtook the Western countries in terms of economic growth and skills within specific fields, such as the Japanese automobile industry. These countries started to develop, and to this day are very well developed, while holding on to their cultural values, for example Confucianism in China. The development of these countries naturally introduced some changes, as it did in the West, but it is difficult to see today that traditional values and religion do not play a role in society, as was proposed by modernization theorists.

In the times of Marx, the main political struggles were between the working class and the capitalist owners of the means of production, and it is not hard to imagine why he proposed the theories that he did. He proposed that religion would vanish, as he saw less people going to church as they moved to the cities and became less reliant on the community of religion. The same point was made by Nietzsche who famously declared God dead. The industrialization lead to many changes of society including rising educational levels, income levels and more unforeseen changes, such as changing gender roles, attitudes toward authority and sexual norms and the well documented decline in fertility rates (Inglehart and Baker, 2000). Post-industrialization led the public to grow more autonomous and many started questioning the norm of economic growth at any costs, and instead suggested focusing on quality-of-life, environmental protection, and self-expression. In recent work on the topic by Inglehart and Baker (2000), they propose that 1) cultural change is not linearly related to economic growth, and 2) cultural change is path dependent. The first point is emphasized by the change following different periods in development of countries –

industrialization leads to a certain set of changes in cultural values and norms and post-industrialization leads to other changes in a non-linear fashion. The second point is made by observing that countries in different parts of the world today are almost at the same level of economic development while having very different cultural norms and values.

These norms and values affect the political landscape, and a tool often used to measure how different factors influence the political battlefield is the political left-right scale. Originally, the idea of political left and right scale developed from the French parliament where, after the revolution, the so-called radicals were seated to the left and the aristocrats were seated to the right. The understanding of the left and right has changed over time since it was first used in France. In the times of Marx, in the industrialization, the political left and right were that of workers versus owners of means of production – namely a materialistic conflict. In the post-industrialized world different meanings are associated with political left and right. Not many would argue that the political left is still dominated by the working class and the right is dominated by the bourgeoise. It rather seems that there exist many different interpretations of left and right that vary across countries. Sometimes, the scale is used in the public and the media to describe socialism on the left and conservatism on the right. Some researchers (e.g Stubager (2013)) suggest that party affiliation is highly associated with education levels – highly educated voters tend to vote for 'centrist' parties while lower educated voters tend to vote more at extremes (e.g. populist parties). Others have argued that personal values are the cause of the main political struggles. Piurko et al. (2011) argue that 10 specific, and sometimes conflicting, personal values are at either end of the political spectrum. Despite these efforts, it is still not crystal clear what exactly is meant by left and right in the political sense. For example, Huber and Inglehart (1995, p. 91) surveyed 42 societies and found that the left-right dimension was "an amorphous vessel whose meaning varies in systematic ways with the underlying political and economic conditions". In this study, we seek to investigate this issue in more detail. Specifically, we seek to answer the following question and sub questions:

Which factors correlate with individuals' self-placement on the political left-right scale?

- *Which similarities and differences exist in these factors' correlations with self-placement across countries and across 'blocks' of countries?*
- *How has the importance of these factors changed over time?*

1.1 Approach and scope

To answer these questions, we use the vast European Social Survey (ESS)[1] dataset and employ methods from the fields of data science and econometrics. Specifically, we use all available rounds of the ESS from the first in 2002 to the most recent in 2018. We use the elastic net and lasso methods from the field of data science to select the most important variables in explaining the left-right self-placement. Further, we use weighted two-ways fixed effect, pooled weighted least squares, and test for structural changes to identify the significance and effect of the variables on self-placement.

Other research has focused on contextual effects on voter behavior, such as economic growth or policy changes. By using the ESS data, this study becomes a study of individual rather than contextual effects on political self-placement. Further, as our variable of interest measures the individuals' political self-placement rather than e.g. what party the individual votes for, our study is one of political associations rather than direct voter behavior.

Further, this study focuses on the correlations between a large range of variables and political self-placement, and not necessarily the sociological reasons for these correlations. The goal is not to find the optimal political strategies based on our findings, but rather the economic implications they may have. We discuss this in more detail in the discussion section, in which we discuss the importance of economically related variables.

1.2 Findings

We find that the strongest predictor of left self-placement is being pro-immigration and pro-equal rights. On the other hand, being religious and satisfied with the current state of society are the strongest predictors of right self-placement. Further, we find that the post-communist countries to a large degree deviate from the other countries in our sample. In all the other welfare regimes, associating with the political left is associated with trade union membership, being politically active, believing in greater wealth redistribution, and the human value universalism, while the human value power is associated with right self-placement. The post-communist countries do not share these values with the other welfare regimes,

[1] Appendix A provides a list of all abbreviations and notations and might be useful to have at hand while reading.

and seldom share values even with each other. This could indicate that the post-communist countries have yet to define the political left and right.

Further, our findings provide evidence for the pluralization theory, which states that old political values are persistent in defining the political landscape and that new values are added to the old instead of replacing them (Knutsen, 1995b). This is underlined by the post-materialist values of being pro-equal rights and pro-immigration being significant, while many of the old politics values, such as wealth redistribution, are still important in almost all countries. Further, our analysis of changes over time showed stability of the old politics variables and either increasing or stable importance of many new values. This contrasts the irrelevance and transformation theories, stating that the political left-right semantics either become irrelevant or that it are transformed to measuring new political values rather than old.

Aditionally, our findings provide evidence for a modification of the modernization theory, which states that economic development leads to cultural convergence. We show that the three most developed welfare regimes in our sample share a large range of values in defining the political battlefield, while the lesser developed post-communist countries still deviate in many ways. Further, we find some evidence that the post-communist countries are converging towards the other countries in some respects. However, we find that many countries within the same welfare regimes deviate from each other. This entails that despite the countries converging on some aspects, they are still dependent on their cultural heritage and religion.

Finally, we find a correlation between being politically active and left self-placement contrasted by a correlation between being satisfied with society and right self-placement. We hypothesize that it might be caused by an increasing income gap that dissatisfies left-wing voters who typically prefer greater wealth redistribution, and therefore causes them to take action. These findings underline the importance of distributional politics in the mind of the public.

1.3 Contribution

In contrast to most academics studying political self-placement, we take an explorative approach and include as many variables as possible instead of selecting variables based on theory. We thereby control for a large range of factors and find that when controlling for these the findings of previous academics are no longer significant.

Further, we believe to be the first to document a relationship between being politically active and left self-placement contrasted by a relationship between being satisfied with society and right self-placement. We believe these values to reflect a willingness for self-expression and to change society on the left, and a conservative willingness to keep society as it is on the right.

Finally, we contribute by an attempt at spanning the bridge between political science and data science by applying the variable selection methods lasso and elastic net. These methods find the most important variables by testing the regressions on unseen data. This provides a relatively unbiased method to select important variables, rather than doing so by choice, as done in most previous literature investigating the political landscape. Thereby we introduce methods of the data science literature, which advantageously can be used in political science to identify important variables, and thereby let the data speak for itself, rather than choosing variables based on previous theory. We use these variables in panel data methods and pooled cross-sectional data methods to find their significance and direction of coefficient.

1.4 Overview

The following study is divided as such: In section 2 we provide the theoretical framework underlying our study. In section 3 we describe the data and how we have treated the data before the analysis. In section 4 we describe the methods used, and in section 5 we outline the main results. Further, in section 6 we discuss the implications of our results and main limitations of the study as well as giving suggestions for further research. In section 7 we conclude.

2 Theoretical framework

In the following section, we seek to explain the theoretical framework underlying our analysis. Traditionally, academics have either sought to explain political self-placement and voter behavior with either contextual factors, such as a country's economy or unemployment level, or with individual factors such as education, race or income. Our approach is based on data from the ESS in which most, if not all, variables are related to individual characteristics, and we will therefore focus our research on individual characteristics and beliefs and how they influence political self-placement. We take an explorative approach, in which we use this theoretical framework to review the literature for possible relationships that we put a higher focus on.

We start by a discussion of different welfare regimes. We follow with a discussion of what factors the previous literature has found to be correlated with the different ends of the political spectrum. We then discuss the previous research conducted on the variables in our study and what correlations we expect to find based on this research. Since we are also interested in the development of these correlations over time, we will comment on the variables where we expect the relationship to change. We end this section by a description of our scientific approach.

2.1 Welfare regimes

We classify the countries in our dataset into welfare regimes based on the typology of Esping-Andersen (1990). By doing so we can compare differences and similarities within and across welfare regimes. We would expect larger similarities within a given welfare regimes and expect the welfare regimes to have some differences compared to countries of other welfare regimes. We start by describing Esping-Andersen's (1990) typology. We then discuss some comments to his typology, and end with short description of each welfare regime.

2.1.1 The theory of welfare regimes

Esping-Andersen (1990) argues that the history of political class coalitions is the most decisive cause of welfare regime variations. Esping-Andersen (1990) identifies three major ideologies in political economics with different political approaches. The welfare regime was developed from capitalism as workers gained more power. Liberal political economists believed that the road to equality and prosperity should arise from a maximum of free market and a minimum of state interference. Conservative political economists argued that the most important factor to economic efficiency was discipline over free competition and they favored authoritarian states over free market. In contrast to both liberal and conservative political economists, the foundation of Marxist economists was to remove the class dominance, which in their mind created inequality. The social democratic model emerged from Marxism, which resulted in ideologies of equality to all but in this process the social democratic model became dependent on markets, thus moving the societies away from Marxism.

Esping-Andersen (1990) focuses on two main dimensions in defining the welfare regimes; decommodification and stratification. The former describes how much an individual is dependent on the labor market. This is important since some welfare regimes provide an alternative to the labor market by providing a security net under the individuals thus creating lower dependence on the labor market. The second factor, stratification, measures whether all citizens are given the same rights independent of class or market positions. Based on the two dimensions Esping-Andersen (1990) defines three welfare regimes: liberal, corporatist-conservative (conservative), and social democratic. He argues that his typology provides: "qualitatively different arrangements between state, market, and the family [...] not linearly distributed, but clustered by regime-types" (Esping-Andersen, 1990, p. 26). However, there exist many ways to classify welfare regimes, and we will therefore describe other researchers' responses to Esping-Andersen's typology in the following section.

2.1.2 Comments and modifications to Esping-Andersen's typology

Most comments in the literature are focused on two areas. First, as Esping-Andersen's (1990) typology is based on a comparative historical analysis of 18 OECD countries up to the 1980's, some Western welfare regimes are not categorized. For example, the analysis does not cover the new Southern EU members of the 1980s (Ebbinghaus, 2012). Further, the post-communist countries are not categorized in Esping-Andersen's (1990) typology, since the communist countries developed into liberal democracies with free markets after the publication of his theory. These countries are still in an unsettled situation as transition countries (Castles and Obinger, 2008; Fenger, 2007). Second, there is a debate on which degree of differentiation a welfare regime should be defined upon. Researchers have argued that using three welfare regimes is too narrow an approach (Arts and Gelissen, 2002). However, Esping-Andersen (1993) has defended his typology using three regimes, claiming that further types will delude the analytical power. He argues that there does not exist 'pure countries', since all countries have some parts of all three welfare regimes. Therefore, one can define as many welfare regimes as countries.

Based on these comments, and due to the nature of our data, we find it necessary to add the post-communist welfare regime to Esping-Andersen's (1990) typology. This results in four welfare regimes which we will apply in our analysis: Conservative, liberal, social democratic, and post-communist. We will describe the four regimes in this order and supply with a study by Henjak (2010) who looks into differences between the welfare regimes and their political cleavages. The classifications of the countries in our sample are based on the findings of Ebbinghaus (2012). In his paper, he compares 13 different papers that classify countries into welfare regimes. In doing so, he investigates what previous researchers have done when classifying a large range of countries into welfare regimes. He measures the consistency of a given country being classified into one specific welfare regime. See the findings of Ebbinghaus (2012) in Table B1 in Appendix B.

2.1.3 The conservative welfare regime

Historically, the dominating factor in deciding who had rights in the conservative countries was class structure (Esping-Andersen, 1990). This means that rights were attached to class and status and not equalized as in the liberal regime. The prior corporatism made it a state task to provide welfare to the citizens, thus private insurance plays a small role. However, the regime has kept the status differences, and the redistribution impact is negligible (Esping-Andersen, 1990). A strong relationship between the church and the state has formed the regime, as the church previously had power over education and the legal system. Therefore, traditional family values persist, thus resulting in e.g. low labor participation of women. However, the recent rise of globalization, resulting in culture homogeneity in Western societies, increased the importance of topics such as environment, gender equality, and immigration. This has caused conflicts between the legacy of the class structure and the modern values (Henjak, 2010). Overall Esping-Andersen's (1990) typology identifies the conservative welfare regime as having a moderate level of decommodification and high degree of stratification. The conservative countries in our sample are Belgium, Germany, and France.

2.1.4 The liberal welfare regime

Esping-Andersen (1990) defines the liberal system by its reliance on mean-tested welfare[2] with only a modest level of universal transfer and social insurance plans, and where benefits cater mainly to low-income individuals. The welfare regime is categorized by traditional, liberal work-ethic norms, meaning state benefits are not only moderate but also attached to strict entitlement rules. The liberal system encourages private welfare schemes. Henjak (2010) argues in line with Esping-Andersen (1990) that the deregulated labor market prevents large group of individuals on unemployment or social benefits. However, this deregulation also creates large groups of low-skilled workers. Historically, the liberal system has been open for immigration since immigrants compete on the free market (Henjak, 2010). This type of regime is defined as having a minimal decommodification, since the market is important in providing welfare and a moderate level of stratification, since the citizens in the countries are relatively equal in terms of opportunities (Esping-Andersen, 1990). The liberal countries in our sample include Switzerland, Great Britain, and Ireland.

2.1.5 The social democratic welfare regime

The social democratic system is, in contrast to both liberal and conservative system, built on universalism and decommodification of social rights (Esping-Andersen, 1990). On the other hand, it is a mixture of the two other welfare regimes, since the state takes care of all welfare tasks, such as care of children, the aged, and the helpless. This creates freedom for the individual and causes high labor participation. In order for the social democratic system to work it needs to maximize the state's revenue as the costs of maintaining a solidaristic, universalistic, and decommodifying welfare regime are enormous. This welfare is offered to all; thus, it is not dependent on which social class an individual belongs to. Esping-Andersen (1990) identifies the social democratic welfare regime as having a low degree of stratification and a high degree of decommodification. In our sample these countries include Finland, the Netherlands, and Norway.

2.1.6 The post-communist welfare regime

According to Fenger (2007) the countries in the post-communist system cannot be mapped into Esping-Andersen's (1990) typology. He argues that that there are large differences between the post-communist

[2]Mean-tested welfare includes programs such as food stamps, public housing and medical aid. Means-tested aid programs provide benefit only to poor and lower-income persons.

countries and the countries in the other three welfare regimes. As stated, the typology which will be used for these countries is from Castles and Obinger (2008) who analyzed welfare typologies in the OECD countries. The main difficulty with defining the welfare regimes of the post-communist countries is that there are limited data, and that they are in a transition stage of becoming an open economy (Fenger, 2007). In the transition, the countries have introduced welfare schemes as in the social democratic system, but they have not succeeded (yet) in raising the level of decommodification and they still have a high level of stratification (Castles and Obinger, 2008). These countries are Hungary, Poland, and Slovenia in our sample.

2.2 The political left-right scale (13)

Knutsen (1995b) investigates how the meanings of left and right have changed from the early 1970s to 1990. He tests correlations between left-right self-placement and three central value orientations – secular versus religious, economic left versus economic right, and post-materialist values versus materialist. The secular versus religious values are mainly measured by church attendance and religiosity. The economic left versus right values include topics on equality of income and government involvement in the economy. Lastly, the materialist versus post-materialist values include values such as maintaining a stable economy (materialist) versus progressions towards a less impersonal, more humane society (post-materialist (Knutsen, 1995b)).

Knutsen (1995b) further tests four theories about the changing meanings of the left-right scale: Transformation theory states that new attitudes towards politics will replace the old ones. The theory states that the post-materialist versus materialist values will replace the religious versus secular and economic left versus right values in defining the political landscape over time. Irrelevance theory states that the left-right semantics will become irrelevant over time and replaced by a new political language. Persistence theory argues that economic priorities of the left and right persist and the new meanings of left and right are only important because they are coupled with the old meanings. This theory can further be split in two when including religious versus secular value orientations. The narrow version states that religious versus secular values are only important because they are compounded with economic left-right values. The broad version states that both religious versus secular and the traditional economic values will determine the left-right identification, while other new conflicts will only be important when coupled with the old values. Pluralization theory argues that the new values are added to the old meanings of left and right – the new value orientations are not necessarily coupled to the old meanings of left and right, but contribute independently to the left-right identification (Knutsen, 1995b). Testing these four theories, he finds support for the pluralization theory as he finds that economic left-right orientations are persistent over time and that materialist/post-materialist orientations are increasing in importance. This also indicates a rejection of the persistence theory since the new values have importance on their own even when controlling for the old values. Further, he finds that the explained variance of the value orientations in the self-placement scale increases over time – indicating that the left-right semantics have absorptive power incorporating many different conflict lines. Thus, he rejects the hypotheses posed by some academics that the left-right scale is becoming irrelevant.

In more recent work, Knutsen (2017) investigates whether the 'Old Politics' or 'New Politics' values dominate each other. He defines religious versus secular values and economic left versus right dimension to be distinct old politics values. On the other hand, environmental values, libertarian versus authoritarian values, and immigration versus anti-immigration values are the values distinct to the new politics values. As in his previous study, he finds that the old politics have not been absorbed by the new politics and still play a large role in party choice (Knutsen, 2017, pp. 269-271).

In line with the modernization theory described in the introduction, many theorists have argued that values and political conflicts across the world would converge towards the values of the most developed countries. On the other hand, sociologists such as Max Weber have argued that cultural values endure despite economic development. Further, it has been argued by theorists such as Marx and Nietzsche that religious values would decline in importance due to modernization. Inglehart and Baker (2000) investigated these conflicting theories using data from the World Values Surveys.[3] The authors find that economic development promotes a shift from traditional to secular and rational values in the wake of industrialization, and that post-industrialism brings a shift towards more trust, tolerance, well-being and post-materialist values. Further, they find the convergence of cultural values is path dependent, and

[3]The World Values Survey (`www.worldvaluessurvey.org`) is a global network of social scientists studying changing values and their impact on social and political life, led by an international team of scholars, with the WVS Association and WVSA Secretariat headquartered in Vienna, Austria.

that economic development pushes societies in a common direction but on parallel paths determined by their cultural heritages. Despite the move away from religion following industrialization, the authors find that religious values still play a large role in the political debate. Their findings are interesting for our study since they give an indication of what has traditionally defined the political spectrum and what defines it today. Based on their findings, we would expect that in most of the countries in our sample, post-materialist values would be on the rise in importance. We would further expect differences in the values defining the political spectrum between the countries due to their different cultural heritage.

2.3 Explanatory variables

In this subsection, we describe what the previous research has found on the different variable groups and how they have affected voter behavior and/or political self-placement. We further describe how we expect the variables to correlate with political self-placement and how we expect this correlation to develop over time. Unless commented upon, we expect the relationships over time to be constant (i.e. not increasing or decreasing in importance). The variables included in the ESS have been grouped as: Media and social trust, Politics, Subjective well-being, social exclusion, religion, national and ethnic identity, Timing of life, Gender, year of birth and household grid, Socio-demographics, Justice and Fairness, and Human values. After data cleaning our dataset does not contain any variables from the Justice and Fairness or the Timing of life groups, so we disregard these groups of variables. Since each group sometimes contains many variables measuring similar topics, we will not describe each variable but rather the groups. We have included the variable numbers in the headings for each group to make it easy to identify the variables in Table C1 Appendix C, where we give the full description of each variable. Due to the nature of the political left-right scale being from 0 to 10, a negative correlation between a variable and the left-right right scale means that larger values of the variable indicate lower values on the left-right scale and therefore left self-placement. Thus, negative correlation means left self-placement and positive correlation means right self-placement and we use the terms interchangeably.

2.3.1 Social trust (1:3)

The literature has investigated how social or interpersonal trust affects a democracy; one might think that with higher level of interpersonal trust a democracy will develop faster. However, Muller and Seligson (1994) find that social trust or interpersonal trust is a product of democracy rather than a cause of it, since they find that the longer a country has been a democracy the higher is the interpersonal trust between the citizens. Letki and Evans (2005) find similar results in their study for East-Central-European countries in the 1990s. They find that the level of trust has no influence on how fast and well a democracy is developing. Except for these findings, we did not find any literature that related social trust with the left-right scale. We do therefore not expect any clear patterns in the correlation between trust and political self-placement.

2.3.2 Politics (4:30)

This group contains many topics that can be further divided as following: Interest in politics and political activism, trust in institutions, satisfaction with society, immigration, wealth redistribution, and tolerance for homosexuality. We will describe the subgroups in this order.

2.3.3 Interest in politics & political activism (4:12)

We are not aware of any literature describing whether being interested in politics or being politically active should be correlated with left-right self-placement. Therefore, we do not expect any correlation between this group of variables and self-placement.

2.3.4 Trust in institutions (14:17)

If an individual trusts an institution, this could indicate that he or she believes that the institution fulfills its obligations. However, the notion of trust goes beyond whether individuals have a negative or positive attitude towards one specific institution (Devos et al., 2002). Institutions vary as e.g. trust in police, government, or politicians, but the authors argue that trust toward institutions can be viewed as one common factor. Devos et al. (2002) investigated how the relationship was between trust in institutions and left-right parties. They find that right-wing voters had a higher support to institutions than left-wing voters, and they therefore argue that right-wing voters have more trust in society. Therefore, we believe that individuals who trust the different institutions in society will place themselves more to the right.

2.3.5 Satisfaction with society (18:22)

There are many reasons for an individual to be satisfied with society. This could be because the government provides free health care for all citizens, or because individuals have their own rights to choose themselves. Radcliff (2001) investigated if aggregated levels of satisfaction vary with political factors and finds that there is no relationship between political ideology and how satisfied citizens are. He hypothesizes that this could be due to difference in why the individuals are satisfied with the country, and that it depends on national traits. He further argues that it is culture that matters in defining how satisfied citizens are with society. We do therefore not expect to find relationships between political self-placement and satisfaction with society.

2.3.6 Immigration (23:28)

Immigration has always been a topic of great political interest. Since the post-war period in Western Europe there has been an upspring of extreme parties against immigration (Alonso and Fonseca, 2012). These parties are often called extreme right parties, since the opposite ideology, such as appreciation of societal diversity, often is found amongst the traditional left-wing parties such as Socialists and Social Democrats. Empirical research has also found that right wing parties often are seen by voters as being more against immigration than left-wing parties (Thränhardt, 1995). Further, Alonso and Fonseca (2012) find that the immigration issues become more salient for the mainstream left parties due to the debate created by the extreme right. This seems to affect the left-wing parties more than the right-wing parties, since the right-wing parties often have tougher immigration policies, and the left-wing parties have to adopt these due to the increased debate on the topic. Therefore, if traditional left-wing parties adopt tougher immigration policies, we would expect their previous pro-immigration voters to move further to the left. In total, it seems that anti-immigration is often correlated with the political right. We therefore expect that individuals who are positive towards immigration tend to associate with the political left and that this relationship is stable over time.

2.3.7 Wealth redistribution (29)

In the dataset there is a variable (gincdif) measuring whether the individual believes the government should do more to reduce differences in income levels. In politics, right-wing parties are often associated with e.g. reduced taxes for the wealthy, deregulated markets, and cuts in government spending. For the left-wing parties, it is important to e.g. organize labor relations and labor markets to compress the earning distribution and institutionalize equality (Brady and Leicht, 2008). To back up these associations Brady and Leicht (2008) have tested how the Gini coefficient has changed after a power shift in 16 Western democracies from 1969-2000. They find that power to right wing parties significantly increases the gap between the top and middle of the income distribution. They also find that left parties reduce the income gap, but the cumulative effect is smaller for the left-wing parties than for right-wing parties, which means that the income differences have increased in the western democracies, in line with the findings of Piketty (2014). Other researchers have focused on the political conflicts over time, and wealth redistribution is often mentioned as a traditional political conflict. This conflict was originally between the workers and the owners of the means of production and is therefore described as leftist versus rightist materialist values (Knutsen, 1995a). Knutsen (1995b) finds that the left-right values are still to a large degree correlated with the classical economic materialist orientations. We therefore expect a negative correlation between the variable gincdif and political self-placement, and that the relationship becomes more important over time due to the increasing income gap.

2.3.8 Tolerance for homosexuality (30)

One variable in our data, freehms, measures whether the respondent believes that homosexuals should be free to live life as they wish. Historically, right-wing parties have been against equal rights for homosexuals and left-wing parties are often pro-equal rights (Wolf, 2009, p. 128). Reynolds (2013) showed that there are large differences between countries in how accepted homosexuals are. He finds that in some countries, such as the Central and Eastern European, equal rights for homosexuals are still a left-right battlefield. However, in other countries, such as the Scandinavian, most politicians are pro-equal rights as the public opinion has changed. Therefore, the issue is not as debated as in other countries (Reynolds, 2013). We therefore believe that in the conservative, liberal, and social democratic welfare regimes, there will be a correlation between tolerance for homosexuality and left self-placement. However, this could be a more important topic in the post-communist countries, and we believe the correlation to be stronger here. Further, we expect the correlation to decrease in importance over time.

2.3.9 Subjective well-being, social exclusion, religion, national and ethnic identity (31:44)

This group contains a large range of topics. After data cleaning, our dataset contains the subgroups happiness, social activity, security, health, religion, and ethnicity. We will describe them in this order.

2.3.10 Happiness (31)

The relationship between happiness and political orientation has mostly been investigated in the opposite direction of what we seek to do in this study. The literature has often focused on whether right-wing voters are happier than left-wing voters or vice versa. The results have been that right-wing voters tend to report higher degrees of happiness than left-wing voters (Napier and Jost, 2008; Taylor et al., 2006). Napier and Jost (2008) discuss different reasons for this including that the conservative ideology, often associated with the political right, provides justification for inequality and therefore acts as a coping mechanism. The conservative ideology is often built on preserving class structures, and therefore perceive it as fair that individuals are not equal. The political left-wing does not provide any justifications for inequality as the ideology is often built on a wish for tolerance and equality of wealth. As inequality of results, such as income, and opportunities, such as education, exist in almost all modern-day societies, not believing in this justification can lead to less happiness. The authors further show that increases in inequality lead to a larger happiness gap (Napier and Jost, 2008). We would therefore expect a positive correlation between self-placement and happiness.

2.3.11 Social activity (32:33)

This category of variables generally measures the social activity of the respondent. We did not find any literature that proved a correlation between social activity and political self-placement. Further, we do not find any logical explanations for why people that are more socially active than others should associate with either the political left or the political right, and we do not expect any significant correlations for this group of variables.

2.3.12 Security (34:35)

Two variables in the ESS relates to the security of the individual. The first measures whether the individual, or a member of the individual's household, has been the victim of a burglary and the second variable measures whether the individual feels safe walking at night. These variables are very specific, and we have not found previous literature researching their effects, and we do therefore not expect to find any clear correlation between these variables and self-placement.

2.3.13 Health (36:37)

Right-wing systems often provide public health care only to fulfill basic needs and hence private insurance is therefore a necessity. In left-wing systems national health care is often provided for all citizens and private insurance is a supplement (Lena and London, 1993). The authors further show that countries with long term left-wing regimes seem to have better health outcomes for their population. However, the health variables in our dataset measure different degrees of the individual's health rather than views on the public health system. A possible outcome could be that people with poor health tend to vote for left-wing parties, as they typically provide better healthcare for the public. Nevertheless, we believe that this correlation is also highly impacted by the individual's opportunity for getting private healthcare or whether he/she is insured. Therefore, we do not expect any clear patterns for health and self-placement.

2.3.14 Religion (38:40)

In a report by the Pew Research Center (Doherty et al., 2016), the authors find that the Democratic voters in the US are becoming less religious (atheist, agnostic or "nothing in particular") at a faster rate than the voters of the Republican party. When the report was released in 2016, 29% of Democratic voters were not religious while only 12% of republicans answered the same. These numbers have increased from 10% of Democratic voters and 6% of Republican voters in 1996. Under the assumption that the Democratic Party is placed further to the left on the scale than the Republican Party, we can make some inferences on what we might find in our analysis. Based on these findings we believe that religious individuals associate more with the political right than non-religious individuals. Further, Knutsen (1995b) finds that religious values have a decreasing impact on the left-right scales. Interestingly, Knutsen (2018, p. 267) finds the opposite, namely that religion still matters in individuals' party choice. However, based on the findings of Knutsen (1995b) and Doherty et al. (2016), and as predicted by Marx and Nietzsche, we further believe that this relationship is decreasing in importance over time.

2.3.15 Ethnicity (41:44)

The ethnicity variables measure whether the respondent, the respondent's mother, and/or father was born in the country where the survey was conducted, and whether the respondent is part of a minority in the country. These variables all, to some degree, measure whether the respondent or his/her family has recently immigrated to the country. We do not have any previous literature on this exact question, but we do have a proxy. The Pew Research Center (Doherty et al., 2016) found that minorities in the US tend to vote for the democratic party, and therefore, under our assumption, more to the left on the left-right scale. We would therefore expect that individuals who have recently immigrated to a country would tend to associate with the political left.

2.3.16 Gender and age (45:46)

In terms of gender, the Pew Research Center (Doherty et al., 2016) found that in 2008, 35% of women leaned towards the Republican party, while 56% leaned towards the democratic party, and the remaining did not lean towards any of the two. In 2016, 38% of women leaned towards the Republicans, while 54% leaned towards the Democrats. Reynolds (2013) argues that women tend to support equal rights to a larger degree than men, and as we have discussed above, the political left is often supporting equal rights, which could explain why women lean towards the left. We expect to see that men tend to associate with the right and that this relationship is rather stable over time.

According to the Pew Research Center (Doherty et al., 2016), the Democratic voters are younger than Republican voters – 51% are under the age of 50 while this number for Republicans is 41%. Voters in both parties are on average aging, due to a general aging of the population, but the Republican voters seem to be aging more quickly – the Republican party attracts more voters of old age than the Democrats who seem to attract younger voters. We therefore expect that older voters tend to associate more with the right.

2.3.17 Socio-demographics (47:64)

This group of variables contains education, geographic location of household, and a range of variables related to employment status.

2.3.18 Education (47:53)

Stubager (2013) investigates the relationship between an individual's educational background and his/her voter behavior. Higher educated people tend to vote for the Social Liberals in Denmark (where the survey is conducted), while less educated individuals tend to vote for the Danish People's Party. Stubager (2013) further argues that if this is the case in Denmark, where the political cleavages are often seen as small, it is likely the case in other countries as well.

Further, the Pew Research Center (Doherty et al., 2016) found that the American population is becoming more educated. 37% of Democratic voters held at least a college degree, while this number for the Republicans was 31% in 2016. This number has increased far more rapidly since 1992 for Democrats than for Republicans. This indicates that educated voters tend to associate with the left and that the relationship is increasing over time. However, the findings of Stubager (2013) would indicate that more educated voters tend to associate with center parties (such as the Social Liberals in Denmark), while the less educated would associate with the right. However, the less educated have historically been the working class, who tend to vote for the left-wing parties. Further, if highly educated voters tend to vote for center parties, we expect the results over all education variables to be mixed.

2.3.19 Domicile (54)

The variable domicile measures urban versus rural location of the respondent's household, with larger values indicating that the respondent lives closer to a big city. Chen and Rodden (2013) investigate the impact of demographic location of the voters' household on their political choices in the US. They find that democratic voters are highly clustered in urban areas, in contrast to the Republicans who live in suburban, exurban, and rural areas. They investigate the United States presidential election in 2000 between Al Gore and George Bush. Their results support their hypothesis, as they find that Al Gore received 90% of the votes in the city centers, and that Bush gained increasing support from the voters living further away from the city centers. In the rural areas the vast majority vote for the Republicans. This indicates that people living closer to big cities might tend to vote for the political left wing and vice versa for the rural areas. Therefore, we expect domicile to be associated with the political left.

2.3.20 Employment (55:63)

Nine variables in our dataset measure the individual's employment status. The variables measure what the individual has been doing mostly over the last seven days; paid work, education, unemployed (and actively looking for work), unemployed (and not actively looking for work), being permanently sick or disabled, retired or doing housework. Further, a variable measures whether the individual has been unemployed and seeking work for more than three months at any given time in their life. The last variable in this group measures whether the individual has taken courses or attended conferences or similar to improve his/her skills for work. We did not find any literature investigating these correlations with political self-placement. As many of these variables measure activity over the last seven days, they will most likely not affect political self-placement as they could be short term fluctuations. We do not see any logical reasons for why improving one's skills for work should be correlated with self-placement. We do not expect significant correlations for these variables.

2.3.21 Trade union membership (64)

Trade union membership has typically been for the working class. As such the trade union membership can be a good proxy for whether the respondent belongs to the working class or not (Piurko et al., 2011). As we have discussed, several authors (e.g. Inglehart and Baker (2000); Knutsen (1995b, 2017)) find that class structure and old politics values such as economic redistribution still play a large role in explaining party choice and left-right self-placement. We therefore expect this variable to be correlated with left self-placement and stable over time.

2.3.22 Human values (65:85)

Schwartz and Bilsky (1987) originally proposed the theory of human values, and Schwartz further extended and tested these values in 1992. These ten values are designed to capture the basic human values that can be used to classify the beliefs of all individuals. The values are based on a large variation of psychological and sociological sources and are based on the needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups (Schwartz, 1992). We will abstain from going into further detail on the theoretical background of the variables, as our study is of a more political and economic rather than psychosocial, sociological or biological nature. The questions have been included in every ESS round and numerous previous studies have focused on these values and political self-placement (see e.g. Bilsky et al. (2011); Devos et al. (2002); Piurko et al. (2011)). In the ESS every human value is measured by two questions except for universalism which is measured by three questions, and the 10 human values are:

Table 1: The ten human values

Human value	Description
Power	Social status and prestige, control, or dominance over people and resources
Achievement	Personal success through demonstrating competence according to social standards
Hedonism	Pleasure and sensuous gratification for oneself
Stimulation	Excitement, novelty, and challenge in life
Self-direction	Independent thought and action—choosing, creating, exploring
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security	Safety, harmony, and stability of society, of relationships, and of self

Source: Piurko et al. (2011, p. 539)
Note: This table reports the ten human values and their descriptions

In the article by Piurko et al. (2011), in which Schwartz is a co-author, the authors investigate the importance of human values in accounting for stances on the political left-right scale, and how the importance of the personal values differs across three sets of countries using the first round of the ESS. The main idea in their article is then to test whether these values can explain the variation in the political left-right scale. They define three blocks of countries; liberal, traditional and post-communist and list several hypotheses based on the countries' political history and culture. Since we only include 12 countries in our analysis, we will only mention these 12. However, Piurko et al. (2011) used all 20 countries included in the first round of the ESS questionnaire. The 'liberal' countries, using the definition used in Piurko et al. (2011), in our sample include Belgium, Finland, France, Germany, the Netherlands, Norway, Switzerland, and the Great Britain. The post-communist countries include Hungary, Poland, and Slovenia. Our sample only includes two of the traditional countries, namely Ireland and Poland. Note that Poland is included both as post-communist and traditional in Piurko et al. (2011). However, we find that this approach is too narrow since social democratic countries, such as Scandinavian countries, are categorized as liberal countries in Piurko et al. (2011). We therefore rely on the typology by Esping-Andersen (1990) with the modifications previously described. The differences in country classification in our study and in Piurko et al. (2011) are shown in Table B2 in Appendix B.

By running regressions of the individuals' self-placement on the left-right scale, the authors find that in the liberal countries individuals who scored high on power, conformity, security, and tradition were leaning to the right, whereas universalism and benevolence were associated with the left. In the traditional countries they find that the tradition and conformity human values correlate with the political right and that self-direction and universalism correlates with a self-placement to the left on the scale. In the post-communist countries, the picture is somewhat more blurred as the results are non-consistent across the countries. The authors conclude that these countries 'have yet to develop a common understanding of the left-right dimension' (Piurko et al., 2011, p. 555).

Based on these findings, we expect to find a positive correlation between self-placement and the human values power, conformity, security, and tradition and a negative correlation between self-placement and the universalism and benevolence human values in the conservative, liberal, and social democratic countries (using the Esping-Andersen (1990) typology). We do not expect to find any correlations in the post-communist countries. Poland and Ireland are included as traditional countries in Piurko et al. (2011) and are classified as post-communist and liberal in the terminology we use. For these countries, we expect to find tradition and conformity to be positively correlated with self-placement and universalism and self-direction to be negatively correlated with self-placement. We can further test whether Poland and Ireland are similar in terms of human values, which would justify classifying them both as traditional as done in Piurko et al. (2011), or if they are to a larger degree similar to the post-communist or liberal countries, respectively. When we compare our results with the result of Piurko et al. (2011) we will sometimes use the aggregate coefficient of the variables for one human value. In Piurko et al. (2011)

the authors combine the variables for one human value into one variable. We have instead included all variables, and since there are two or three questions for each human value, we need to aggregate these coefficients to compare our results. This further gives us the opportunity to see if the coefficients for each variable for a given human value have the same direction.

2.4 Scientific approach

In this study, we take an explorative approach, where we have listed the findings in the literature and explained how we expect our findings to unfold. The full list of expectations can be found in Table 2. These expectations function as previous findings we can test, but without limiting our scope to predefined hypotheses. This approach allows us to test the relationships of many different variables and the political left-right scale, focusing on the interesting findings in our data. Where previous research has focused on specific theory and tested it on data, we instead let the data speak for itself and afterwards look at correlations and how these match previous research and theory. Thus, compared to the previous research on the topic, our approach is of a more explorative and inductive nature.

Further, due to the explorative nature of this study, we do not exclude any variables based on theory. We instead include as many variables as the data allows (described in more detail in section 3 and use the variable selection methods elastic net and lasso regressions to reduce the number of variables. We have neither seen this extent of controlling factors or these variable selection methods used elsewhere in the literature. By using this approach, and thereby having a large number of control variables and using relatively unbiased variable selection methods, it is possible that some of the relationships found in previous literature are no longer significant. This could be due to other variables capturing the relationship instead of the target variable, or that the variable of interest has been excluded by the selection methods due to large correlations with other explanatory variables.

An important theoretical distinction to make regarding our approach is underlining the explorative nature of our study. As we have described above, some variables might cause left-right placement. For example, age might be positively correlated with self-placement and an increase in age might move individuals further to the right. In this example, age causes right self-placement and not vice versa. Other variables are not as obvious. For example, happiness has been found to be positively correlated with conservatism and therefore right self-placement. However, as we discussed, this is possibly due to the justification system of the conservative ideology, and therefore conservatism causes happiness. It is not certain that this is the only causation, as it is possible that as people become happier, they tend to vote more to the right end of the spectrum. The picture is therefore not as clear as with age where political right self-placement clearly does not cause individuals to age. The important thing to note is that we are not looking for causal effects but rather correlations in the data. Therefore, our research can be interpreted as what 'type' of individual associates with a given end of the political spectrum. These 'types' of individuals can be distinguished by socio-demographics such as gender, age, or education, but also on what human values and beliefs they find important.

A final distinction to make before diving into the methodology and analysis is related to our variable of interest, namely the political left-right scale. We have in this section described variables that affect voter behavior. However, we cannot measure voter behavior directly with the political left-right scale as dependent variable as it simply measures the individual's self-placement on the scale, and not the individual's actual vote. Instead, we can investigate what variables are correlated with self-placement and our study therefore becomes a study of what values, beliefs, socio-demographics etc. are associated with the political left or right.

2.5 Summary

In this section we gave a description of Esping-Andersen's (1990) welfare regime typology alongside some comments to the theory and how this affects our research. We then discussed how previous research has investigated the development of the political left and political right over time. The main findings were that even if the political debate has greatly changed, the traditional conflicts based on social class and wealth distribution are still important (Inglehart and Baker, 2000; Knutsen, 1995b, 2017). Next, we discussed the variables included in our study and what correlations the literature has previously found between these variables and political self-placement (or other variables related to voter behavior). We have included the expectations in Table 2. We ended by a discussion of our scientific approach, in which we stressed the explorative nature of our study.

Table 2: Expected correlation between the explanatory variables and the political left-right self-placement scale

Variable group	Variable subgroup	Expected correlation with self-placement	Expected change over time
Social trust		No expectations	No expectations
Politics	Interest in politics and political activism	No expectations	No expectations
	Trust in institutions	Positive correlation	Stable
	Satisfaction with society	No expectations	No expectations
	Immigration	Negative correlation	Stable
	Wealth redistribution	Negative correlation	Increasing importance
	Tolerance for homosexuals	Negative correlation, possibly stronger correlation in post-communist countries	Decreasing importance
Subjective well-being, social exclusion, religion, national and ethnic identity	Happiness	Positive correlation	No expectations
	Social activity	No expectations	No expectations
	Security	No expectations	No expectations
	Health	No expectations	No expectations
	Religion	Positive correlation	Decreasing importance
	Ethnicity	Negative correlation	Stable
Gender and age	Gender	Positive correlation	No expectations
	Age	Positive correlation	No expectations
Socio-demographics	Education	No expectations	No expectations
	Domicile	Negative correlation	No expectations
	Employment status	No expectations	No expectations
	Trade union membership	Negative correlation	Stable

Continued on next page

Table 2: – continued from previous page

Variable group	Variable subgroup	Expected correlation with self-placement	Expected change over time
	Power	Conservative, liberal and social democratic countries: Positive correlation. Post-communist countries: No expectations	Stable
	Achievement	No expectations	No expectations
	Hedonism	No expectations	No expectations
	Stimulation	No expectations	No expectations
	Self-direction	No expectations	No expectations
	Universalism	Conservative, liberal and social democratic countries: Negative correlation. Post-communist countries: No expectations	Stable
Human values	Benevolence	Conservative, liberal and social democratic countries: Negative correlation. Post-communist countries: No expectations	Stable
	Tradition	Conservative, liberal and social democratic countries: Positive correlation. Post-communist countries: No expectations	Stable
	Conformity	Conservative, liberal and social democratic countries: Positive correlation. Post-communist countries: No expectations	Stable
	Security	Conservative, liberal and social democratic countries: Positive correlation. Post-communist countries: No expectations	Stable

Note: Table 2 reports the correlations we expect to find in the data for the explanatory variable groups. The expectations are based on previous literature.

3 Data

To conduct our analysis, we draw on the ESS carried out by the European Science Foundation. The ESS is a cross-national survey that has been conducted biannually across European countries starting in September 2002. So far there has been nine rounds, the most recent in 2018. The data are collected by face-to-face interviews in each country and each round results in a cross-sectional dataset with randomly selected individuals. When we combine the data for each round, we end up with a pooled cross-sectional dataset meaning that the individuals are randomly selected and thus independently distributed across rounds. Some countries are not included in all rounds, and we therefore focus on the countries which are consistently represented. There are 12 such countries including Belgium, Finland, France, Germany, Great Britain, Hungary, Ireland, the Netherlands, Norway, Poland, Slovenia, and Switzerland.

First, we focus on the variable of interest, the political left-right scale. Second, we give examples of some of the explanatory variables and how they are measured. Third, we describe how we have transformed our data to make it suitable for panel data analysis. Fourth, we discuss possible endogeneity in the data. Finally, we describe our approach to data validation and lastly, we discuss our data cleaning approach.

3.1 The political left-right scale

The main variable of interest in our analysis is the political left-right scale ('lrscale' in the dataset), which measures where the respondent would put him or herself on a political scale from 0 to 10, where 0 is the most 'left' and 10 is the most 'right'. The literal question is formulated as: "In politics people sometimes talk of 'left' and 'right'. Using this card, where would you place yourself on this scale, where 0 means the left and 10 means the right?". This variable thus gives an idea of how left or right an individual is in terms of politics.

Individuals may not place themselves at the extremes of the scale, as these values are often perceived as i.e. populist, communists or other connotations that might be conceived negatively. Table 3 shows the number of observations and the mean and standard deviation of the left-right scale in each country. In general, most individuals place themselves at 5. In Norway 21.5% of the individuals place themselves at

5, and the same number is 42.2% in Ireland. The remaining countries fall in between. Further, there seems to a tendency for individuals to place themselves at 0 and 10 rather than at 1 and 9, respectively, thus disproving the hypothesis that individuals may not place themselves at extremes. The distribution for each country can be seen in Figure C1 in Appendix C.

Table 3: Sample size, mean, and standard deviation of left-right self-placement in each country in the sample

Welfare regime	Country	N	Mean	St. Dev.
Conservative	Belgium	12,201	4.985	1.981
	Germany	18,568	4.489	1.852
	France	12,341	4.890	2.387
Liberal	Switzerland	9,030	5.103	1.972
	Great Britain	13,384	5.040	1.848
	Ireland	11,051	5.175	1.783
Social democratic	Finland	13,036	5.681	2.034
	Netherlands	12,324	5.229	1.992
	Norway	11,335	5.337	2.130
Post-communist	Hungary	7,255	5.472	2.418
	Poland	8,053	5.603	2.328
	Slovenia	6,389	4.683	2.331

Note: This table provides the mean and standard deviation of the dependent variable lrscale for each country in our sample.

Further, the scale has 11 points from 0 to 10. According to Kroh (2007), the left-right scale with 11 points produces the highest validity closely followed by a 10-point scale. Both scales outperform a 100-point scale. In terms of reliability, all scales perform equally well, and Kroh (2007) therefore suggests using the 11-point scale for survey research. Although there are issues with mapping political parties on a simple one-dimensional scale, it seems to be the optimal tool for doing so in regression problems.

3.2 Explanatory variables

The data used for this analysis contains a vast number of explanatory variables, and we do therefore not seek to explain them all in detail. However, we will give brief descriptions of some of them to give an idea of the nature of the data. For example, the 21 human value variables are measured on a Likert-scale with questions being of the type: "Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Thinking up new ideas and being creative is important to her/him. She/he likes to do things in her/his own original way." The respondent answers how much this is like her/him with the highest being '6 – Very much like me' and the lowest being '1 – Not like me at all'. The statement above is the statement given for the variable: 'Important to think new ideas and being creative' (ipcrtiv), measuring the self-direction human value. The remaining value questions can be found in Table C1 in Appendix C. Note that we have inverted the original Likert-scale for all human value variables so that 6 measures high agreement and 1 measures low agreement. This approach is identical to that of Piurko et al. (2011).

Further, the datasets include dummy variables such as gender and whether the respondent has participated in a demonstration over the last twelve months. These variables take on the values of either 0 or 1 indicating 'no' or 'yes'. Finally, many variables are measured are measured on scales of e.g. 1-5. For example, the variable gincdif measures wealth redistribution. The question is formulated as: "Using this card, please say to what extent you agree or disagree with each of the following statements. The government should take measures to reduce differences in income levels." In this variable, 1 measures 'disagree strongly' and 5 measures 'agree strongly'.

3.2.1 Time dummy variables

We sometimes need to account for the time dimension of the data. To do so, we have constructed dummy variables for every survey round with round one as the base.

3.2.2 Education dummy variables

In order to test how education influences the individuals' self-placement on the political left-right scale we have created seven different dummies from the variable "Years of full-time education completed" (eduyrs). This is done to capture the non-linearity of education found in Stubager (2013). Since education systems are not aligned across countries, we have chosen to align the duration based on UNESCO International Standard Classification of Education (ISCED) 2011 (UNESCO Institute for Statistics, 2012). The range of the dummies are given in Table 4

Table 4: Education dummies

ISCED Level	Description	Duration years	Number of observations
ISCED 0 (base dummy)	Less than primary education	0-5	1,520
ISCED 1	Primary education	6-8	10,185
ISCED 2	Lower secondary education	9-11	31,170
ISCED 3	Upper secondary education	12-14	43,867
ISCED 6	Bachelor or equivalent level	15-17	21,359
ISCED 7	Master or equivalent level	18-20	19,652
ISCED 8	Doctoral or equivalent level	20<	7,214

Note: Table 4 provides an overview of the education dummy variables created based on the years of education variable. The classifications are based on the UNESCO International Standard Classification of Education (ISCED). The data is over all countries. In Figure C1 Appendix C we provide an overview of the base dummy ISCED 0 in each country.

In the table there is a jump from ISCED 3 to 6. This is due to the classification, where ISCED 4 is equal to ISCED 6, and ISCED 5 is equal to ISCED 7 in years of education. The difference between them is that ISCED 4 and 5 are vocational educations (UNESCO Institute for Statistics, 2012). Since we have based the dummies on years of education in our dataset, we cannot distinguish between these groups and our dummy ISCED 6 would capture individuals belonging to ISCED 4. The same is true for ISCED 5 and 7. It is obvious that this standardization is not perfect, since the dummies are based solely on the years of education. This causes issues since the number of school years to complete different levels of education differs across countries. Further, the number of years of education is subject to each individual's perception of what a year of education is equal to, and we do not capture which types of education individuals have taken (e.g. vocational or non-vocational).

3.3 Pseudo panel data

The dataset at hand consists of many cross-sectional datasets, which can be pooled into a single dataset with observations from each round. In the following analysis, we use a so-called pseudo panel dataset, a pooled cross-sectional dataset. The pooled dataset is taken directly from the data, but in order to create a pseudo panel dataset, we had to transform the data. We will therefore briefly discuss the transformation approach.

Cross-sectional datasets typically suffer less from issues such as attrition and nonresponse than typical panel datasets, and usually have the advantages of more datapoints (Verbeek, 1996). Verbeek (1996) argues that one advantage of pseudo panel datasets over pooled cross-sectional dataset is in cases where the dataset consists of an individual effect. If this individual effect is present and it is correlated with the explanatory variables, this correlation issue can be fixed using panel data. Further, Deaton (1985) argues that individuals can be tracked over time by cohorts and thus one can create pseudo panel datasets from pooled cross-sectional datasets. Deaton (1985) defines a cohort as: "a group of fixed membership, individuals which can be identified as they show up in the surveys" (Deaton, 1985, p. 1). Verbeek (1996) suggests that possible choices of cohorts can be age, gender, race and region. A 'pseudo panel dataset' can then be constructed by taking cohorts' mean for every time period (Deaton, 1985; Verbeek, 1996).

Aligned with the theory, we have constructed a pseudo panel dataset from the ESS cross-sectional datasets. As suggested by Verbeek (1996), we have used the regions as cohorts, where we have taken the mean across observations in different regions in the 12 countries. This gives us a smaller dataset, but a dataset which consists of the same repeated observation across survey rounds. The final dataset consists of 133 regions over 9 rounds, which results in a dataset of 1,197 observations. The individuals in each region are, of course, randomly selected, but since we average over all individuals in a region, we hope to create a representative sample for the region that is consistent across time and therefore can be treated as repeated observations of the same unit (regions). However, when we are averaging over the cohorts the dummy variables will become proportional variables (Russell and Fraas, 2005). Proportional variables should be interpreted as a value equal to the proportion of individuals in the cohort with the characteristic of the dummy. For example, the dummy variable gender now measures the proportion of males (gender=1) in the region, and therefore the coefficients are to be interpreted as the effect on the left-right scale due to a change in proportion of males.

The regions have changed for some countries in the different rounds, and we standardized the region information to match the Nomenclature of Territorial Units for Statistics (NUTS) criteria[4]. To do so, we have used the official NUTS classification in 2018 to identify regions before 2018. The regional information provided by ESS has changed for some countries across survey rounds. To map all regions to the same NUTS classification we occasionally needed to change regional classification. For example, in Ireland regional information was given on a different scale than NUTS in one round. Therefore, the regions needed to be mapped based on population statistics from Eurostat, which we believe creates the best approximation.

After transforming the data to a pseudo panel dataset, the dummy variables can no longer be interpreted as either a yes or no since we have averaged the individuals across regions. Instead, the dummy variables can be interpreted as proportional variables. For example, a coefficient for the gender variable of 0.515 would be interpreted as a 0.10 increase in the proportion of men in a region is expected to increase the mean left-right self-placement in that region by 0.0515. Interpreting the variable in the usual way would indicate that if the region changed from all female (gender=0) to all male (gender=1), the left-right self-placement would increase by 0.515. This is, of course, a highly unlikely scenario. The remaining variables, which are often of scales from 1-4 or 0-10, are also transformed into means and can possibly take on more values than before, but within a higher minimum and a lower maximum value. The left-right scale is obviously also transformed. The minimum value is now 1.5 and the maximum is 7.48. The mean is 5.048 and the standard deviation is 0.565. The full table of summary statistics can be seen in Table C3 Appendix C.

3.4 Endogeneity

In survey data, there can be several causes of endogeneity, such as measurement error, endogenous sampling, and omitted variable bias. Especially in large surveys that involve many interviewers across many countries, such as the ESS, measurement error is very likely. Issues can involve interviewers and/or re-

[4]Eurostat - https://ec.europa.eu/eurostat/web/nuts

spondents understanding questions differently from country to country or translation errors in questions that give them different interpretations. The ESS undertakes a range of activities to ensure the data quality. For example, they evaluate the quality and comparability of measurement instruments, assess socio-demographic sample compositions using external benchmark data and assess the process and output quality of the survey [5]. We therefore believe that the measurement error will not affect our study and that the data are to a large degree reliable.

Related to measurement error is the problem of endogenous sampling. Although there is no doubt that the majority of samples in the ESS are drawn at random, the interview process is large and involves many individuals and individual choices. As acknowledged by the ESS in various reports and described in Koch et al. (2014, p. 27):

"If interviewers, for instance, tend to substitute a reluctant male target person by his cooperative wife when selecting a respondent within a household, this will lead to an overrepresentation of women in the final sample"

This type of endogenous sampling is sought prevente but when this is not possible, the ESS have included so-called design weights that correct for the over/underrepresentation of certain sociodemographic groups, such as males/females. We will describe these weights in more detail later in this section, and how we implement them in section 4.

A final concern is omitted variable bias, which could cause endogeneity. This could result from social heritage, network, or other unmeasurable variables, which influence the individuals' voting behavior and political associations. We cannot completely rule out this possibility, but we have tried to minimize the issue by including as many variables as possible in the regressions. However, this possible endogeneity means that our results should be interpreted with this in mind.

[5] https://www.europeansocialsurvey.org/methodology/ess_methodology/data_quality.html

3.5 Data validation

Working with survey data may raise some issues. First, the individuals in the survey may not answer the questions honestly. We can to some degree test whether the survey is an appropriated proxy for real election data. One question in the survey is on what party the respondent voted for in the most recent election. By comparing the percentage of survey respondents who said they voted for a specific party in the last election with the actual election data for the corresponding election, we can test whether the correlation is sufficiently high. We first take the number of respondents who voted for a specific party and divide it by the total number of respondents who voted for a party in the last election excluding the category to vote for 'other' parties. We exclude 'others' as it is difficult to compare to the official results, as the parties included in this category may vary in a different manner than the 'other' category of the official results. The official election results are taken from ParlGov , a database that contains election results from most of the EU and OECD countries, with the earliest election in the database being from 1900. Not all parties are represented in both the ESS data and ParlGov for the same election, so we based the calculations on the parties included in both. The parties missing are often smaller parties, such as the 'pirate' parties, and all major parties are included. The full correlation table can be seen in Table 5 below. Almost all correlations are above 90%. One outlier is Ireland round 5 with a correlation of only 67.7%. The second lowest correlation is 86% (Finland round 9), and we therefore conclude that the data seems reliable.

Since our variable of interest is the political left-right scale, we further test the correlation between the respondents' placement on the left-right scale and the left-right position of the party, for which the respondent voted in the last election. The parties' positions are taken from the ParlGov database in which the positions are based on research primarily by Castles and Mair (1984); Huber and Inglehart (1995); Benoit and Laver (2006). All papers are based on expert surveys in a large set of countries, in which the experts are asked to place the parties in their country on a left-right scale. Taking the average of these experts then gives the estimate of the parties' positions. We have then matched the parties' position with the position of the party that a respondent voted for in the last election. We find the correlation between the parties' positions and the respondents' self-placement on the left-right scale to be 56%. This seems relatively low, and we therefore use this new party-based left-right scale as the

Table 5: Correlation table for data validation of the left-right scale

	Round 1	**Round 2**	**Round 3**	**Round 4**	**Round 5**	**Round 6**	**Round 7**	**Round 8**	**Round 9**
Belgium	92.4	98.0	92.1	93.2	96.3	93.9	97.3	95.4	93.1
Germany	98.9	98.6	98.4	99.2	96.6	93.5	98.8	98.6	94.8
France	90.7	90.9	91.3	95.5	94.3	98.3	98.2	99.1	89.1
Switzerland	91.5	98.6	97.3	97.5	98.1	90.1	93.0	91.6	88.4
Great Britain	99.1	98.1	98.3	98.3	99.8	95.5	97.1	99.0	99.9
Ireland	97.8	98.3	99.5	99.1	67.7	98.3	93.8	96.4	98.3
Finland	97.2	97.9	97.6	98.5	95.2	93.0	93.9	94.9	86.0
Netherlands	98.4	99.4	99.2	97.5	98.7	99.1	90.7	93.2	92.5
Norway	99.7	98.2	96.9	94.4	96.6	89.7	98.5	97.7	96.0
Hungary	99.0	99.9	99.8	98.1	99.2	98.1	99.7	93.7	98.5
Poland	97.2	98.9	98.2	98.4	99.0	98.8	98.2	99.7	99.3
Slovenia	97.9	98.1	98.6	97.4	98.6	91.2	96.8	97.0	93.1

Note: Table 5 shows the correlations between election data of the previous election and the percentage of individuals indicating they voted for a specific party at the last election in the ESS data. All numbers are in percentage. Darker shades of gray indicate lower correlations.

dependent variable as a robustness check of our results. We describe this in more detail in section 4.

3.5.1 Data weights

To account for the representativeness of the survey, we will use weights provided by the ESS in our analysis. The use of weights is a highly discussed subject in the literature, due to the serious effects weights can have on the models. If the model is specified correctly the weights will result in a loss of efficiency, but if there is misspecification, survey weights will protect the model against potential bias (Chambers and Skinner, 2003, p. 83). Thus, using weights is a trade-off between bias and efficiency, however it is often unreasonable to assume that the model is entirely correct. We will follow the recommendation by ESS (2014) and the literature (Chambers et al., 2003, p. 83) and use weights in our data. The only weight that applies to our problem is the design weight, which takes into account that not all individuals in the population have the same chance of being sampled. By applying this weight, a possible sample selection bias will be minimized.

3.6 Data cleaning

Due to the nature of the data consisting of many rounds and countries, some variables are not included in every round and some variables differ across countries. Further, some variables contain outliers. In the following section we describe our data cleaning approaches.

3.6.1 Data transformation

Most dummy variables included in this dataset were originally defined so that 2=no and 1=yes. We have changed this so that 0=no. Further, we have merged values for three variables. The variable 'vote' measures whether an individual voted in the last election prior to the survey. Originally, the variable measured three categories; 'yes', 'no' and 'not able to vote'. We have merged the two last categories, so that the variable now only measures 1=yes and 2=no in order to make the variable a dummy. The same has been done for the variable 'hampered by illness' where we merged 'yes' and 'yes to some extent' and the variable 'member of a trade union' where we merged 'yes' and 'previously'. In the last case, one could argue for changing 'previously' to 'no' as the respondent is no longer member of a union. However, we believe that the approach used best captures the effects on political orientation of associating with a trade union at some point in time. All dummy variables are transformed so that 1=yes and 0=no.

Finally, many variables were measured in scales with low values measuring high agreement and high values measuring low agreement. For example, one immigration variable, impcntr, measures whether the respondent believes that more people from poorer countries outside Europe should be allowed to come and live in the country. The highest value (6) originally measured the answer ‘allow none’ and the lowest value (1) measured ‘allow many’. The other immigration variables, such as imbgeco, measuring whether the respondent believes that immigrants are good for the economy, was measured so that higher values indicated high agreement and low values indicated low agreement. We inverted the scale of the first mentioned variable, so the direction of the variables has the same direction. We did this for many variables where the issue was present. For more details see Table C1.

3.6.2 Removing variables

The number of variables included in each round differs from 493 to 675 variables. Therefore, we only focus on the ones that are included in all rounds. After controlling for this and removing the variables that are country-specific, we are left with 102 variables. We have added six education dummies as described above in subsubsection 3.2.2 and dropped the years of education variable. Further, some variables contain a large number of missing observations. We therefore decided to drop variables with more than 10.000 missing observations. We dropped six such variables where the number of missing observations ranged from 10.057 to 113.960. Further, we dropped all respondents who had replied ‘no’ to a question of whether the respondent was a citizen of the country in which the interview was conducted. 90.8% of the individuals that responded ‘no’ had not voted in the previous election. This indicates that these individuals were not able to vote in the country where they live and are therefore not representative for our study. After removing the ‘no’-observations we also removed the variable. Lastly, 14 variables indicating whether the respondent had been discriminated against, were removed since they had no or almost no variation. The variables were dummies indicating whether e.g. the respondent had been discriminated against because of his/her age. In all the variables, almost all individuals had responded no due to the nature of the question. Additionally, the variable ‘cmsrv’ – whether the respondent had performed military or community service in the last 7 days – had almost zero variance, as most respondents had replied no to the question (See Table C5 in Appendix C for descriptive statistics). The final number of variables is therefore 92 including 8 round dummies and 6 education dummies.

3.6.3 Removing outliers

Since we are working with survey data some observations may be unreliable or erroneously documented. We have seen some variables that contain non-representative values. The survey includes individuals down to the age of 15. In all countries included in our analysis the voting age is 18 with the exception of Scotland (as part of Great Britain), where a person can vote at age 16, and Norway, where a person can vote at 17 if the election takes place in the year where the individual turns 18. For that reason, we have removed individuals under the age of 18. This could cause some concern, as some of the younger individuals might not have been old enough to vote in the previous election. Further, some individuals under 18 might be old enough to vote in the next election and one could argue for including those in the analysis. However, as the timing of the next election varies from country to country and in order to create consistency, we make sure that all individuals included in the analysis can vote in the next election instead of including individuals based on the timing of the next election in each country.

In relation to the point made above, we also remove all individuals not able to vote. These are mainly individuals younger than the voting age, but there is still a significant number of individuals not able to vote that are older than the voting age (approximately 3.000 individuals). We therefore remove the individuals, that for some reason are not able to vote.

Lastly, the dataset consists of missing observations across variables, thus we have removed all observations with missing data points. This results in a dataset of 134,967 observations in the pooled-cross sectional dataset.

4 Method

In the following section we lay out the methodological framework underlying the analysis. First, we describe the well-known Ordinary Least Squares method for regression problems. This method underlies many of the other methods used and a brief description is therefore useful. Second, we describe our approach for modeling the country specific pooled cross-sectional data using Pooled Ordinary Least Squares. Third, we describe our approach to find relationships over time, namely a Chow-inspired test of structural changes. Fourth, we describe our approach to modelling the pseudo panel data. Afterwards we describe how we test for heteroskedasticity and serial correlation and the effects of using weighted data. Lastly, we describe our methods for variable selection. All these methods are implemented using the R-software (R). We end with a summary and overview of how the methods are applied in the analysis.

4.1 Ordinary Least Squares

We start by a description of Ordinary Least Squares (OLS). The usual OLS regression is given by:

$$y_i = \mathbf{x}_i^{'}\boldsymbol{\beta} + u_i \tag{1}$$

where y_i denotes the dependent variable for observation i. $\mathbf{x}_i^{'}$ is a transposed row vector of dimension $1 \times (m+1)$ containing m explanatory variables including a 1 to include the intercept, and $\boldsymbol{\beta}$ is a row vector of dimension $1 \times (m+1)$ containing the coefficients on the explanatory variable including an intercept β_0. Lastly, u_i is the unobserved error of the model. The loss function used to find the $\boldsymbol{\beta}$-estimates is given as:

$$L_{OLS}(\hat{\boldsymbol{\beta}}) = \sum_{i=1}^{n}(y_i - \mathbf{x}_i^{'}\hat{\boldsymbol{\beta}})^2 = \|\mathbf{y} - \mathbf{X}^{'}\hat{\boldsymbol{\beta}}\|^2 \tag{2}$$

where n denotes the number of observations, $\mathbf{y}$ is a column vector of dimension $n \times 1$ containing the dependent variable, and $\boldsymbol{X}^{'}$ is a transposed matrix of dimension $n \times (m+1)$ consisting of the explanatory variables. $\hat{\boldsymbol{\beta}}$ is a row vector of dimension $1 \times (m+1)$ consisting of the estimated coefficients on the explanatory variables including an estimated intercept ($\hat{\boldsymbol{\beta}}$). The two vertical lines denote the norm of the vector (i.e. the length). The OLS estimates are then found to be the values for $\hat{\boldsymbol{\beta}}$ which minimize the distance between the model estimated values and the actual values of $\boldsymbol{y}$. In other words, OLS minimizes the residual sum of squares (RSS).

4.2 Pooled Ordinary Least Squares

To analyze the pooled cross-sectional data, we use Pooled Ordinary Least Squares (POLS) regressions. In addition to the already included explanatory variables we include dummy variables for each round to account for structural changes in the level of the dependent variable across time. Running the POLS regressions on the specific countries allows us to see what is important in each country, and what is in common or different between countries and welfare regimes. The POLS regressions are estimated in the same way as the usual OLS, which we have described above.

Another possibility for estimating the country specific regressions would have been to use the pseudo panel dataset, as we will describe in the next section. One advantage of doing so compared to using pooled cross-sectional datasets is that there might be individual effects in the data, which are not accounted for using POLS (Verbeek, 1996). However, doing this on the country specific level would greatly reduce the number of observations as the individuals are averaged into regions. We further assume that the individual effects within a given country are small, and thus a POLS approach is preferred over the panel data methods on the country specific level. We will describe individual effects, our methods used to model the pseudo panel data and why we believed doing, when estimating regressions across all twelve countries are more fruitful than POLS.

4.3 Structural changes across time

Since our data is collected in nine different rounds with two years between each round, there is a possibility of structural changes between the rounds. To test for structural changes, we perform t-tests of the slope coefficients for different rounds, inspired by the Chow (1960) test. Usually in the Chow test, one would create interaction variables between time dummies and variables of interest, and then test if the interaction variables are significantly different from zero using an F-test. If the F-test is rejected, one would conclude that the slope of the coefficients of the variables of interest have changed over time.

We take a similar approach, but we only test for the interaction variable with the last round of the data. First, we construct interaction variables with each round dummy and the variables of interest. The variables of interest are the ones we find most important using the POLS country specific regressions. Since these variables are found to be important across many countries or specific welfare regimes, we further test their changes over time. These variables are included in separate POLS regressions. Second, we test whether the coefficient for an interaction variable in round nine for a given variable of interest is significantly different from zero using a t-test. This would indicate that the slope of the coefficient has changed from round one to round nine. In these regressions, we add the interaction variables to the POLS regressions using the variables selected by the elastic net. This entails that we do not run the elastic net on the interaction variables.

4.4 Panel data methods

As we discussed in subsection 3.3, we have created a pseudo panel data set by averaging individual characteristics across NUTS-regions. This allows us to follow the same regions over time and thereby model the data using panel data methods. This is not possible in the pooled cross-sectional setting, as the individuals are randomly selected in each round. As mentioned, there might be individual effects across countries and creating a pseudo panel dataset is preferred to a pooled cross-sectional dataset in order to take the individual effects into account. These effects could be the countries' historical heritage and political systems which might affect self-placement, which is not accounted for using POLS. We can therefore use this dataset to get a general picture of important explanatory variables and relationships in the data. The basic panel data model for cross sectional unit i and time t is:

$$y_{it} = \boldsymbol{x}_{it}^{'}\hat{\boldsymbol{\beta}} + a_i + u_{it} \tag{3}$$

where a_i is a time-invariant variable which is called the unobserved effect, and u_{it} are called the idiosyncratic errors (Wooldridge, 2013, p. 466). This unobserved effect captures variables that are roughly constant over time, but not included in the explanatory variables.

There are several methods that can be used to estimate panel data models. The choice of model depends on whether there is correlation between the unobserved effects and the explanatory variables. If there is correlation, only the methods of fixed effects (FE) and first differences are consistent. If there is no correlation, all panel data models can be used.

4.4.1 Hausman test

To test what model to use, we have used the Hausman (1978) test. The general idea is that if the $Corr(\boldsymbol{x}_{it}, a_i) = 0$ both random effect (RE) and FE are consistent and will have similar estimates, however the RE model will be more efficient. If $Corr(\boldsymbol{x}_{it}, a_i) \neq 0$, only the FE model is consistent (Wooldridge, 2013, p. 478). The Hausman (1978) test compares the estimated coefficients of the two models. The Hausman statistic is (Wooldridge, 2010, p. 331):

$$H = (\hat{\boldsymbol{\beta}}_{FE} - \hat{\boldsymbol{\beta}}_{RE})^{'}[\hat{\boldsymbol{V}}_{FE} - \hat{\boldsymbol{V}}_{RE}]^{-1}(\hat{\boldsymbol{\beta}}_{FE} - \hat{\boldsymbol{\beta}}_{RE}) \sim \chi^2_h \tag{4}$$

where $\hat{\boldsymbol{V}}$ denotes the estimated covariance matrix, h denotes the number of time-varying explanatory variables and the subscripts, FE and RE, denote the FE or RE models, respectively. The Hausman statistic is χ^2 distributed with h degrees of freedom. The null hypothesis is given as

$$H_0 : Corr(\boldsymbol{x}_{it}, a_i) = 0$$

Coefficients that are almost equal in Eq. (4) indicate a very low Hausman statistic, which does not lead to a rejection of the null hypothesis. If the coefficients do not differ it indicates that $Corr(\boldsymbol{x}_{it}, a_i) = 0$, thus random effects is more efficient than FE. A rejection of H_0, caused by different estimators in the two models, therefore means that the FE method is the only consistent estimator. We have performed the Hausman (1978) test for our full dataset, which resulted in a rejection of H_0 at the 1 percent level, and we therefore use FE models in our analysis.

4.4.2 Fixed effects

Due to a possible correlation between the unobserved component a_i and the explanatory variables, the FE method is designed to remove the unobserved effect by subtracting the within mean of the model. The within mean is the mean over all time periods per observation (Wooldridge, 2013, pp. 466-467):

$$\bar{y}_i = \bar{\boldsymbol{x}}_i^{'}\boldsymbol{\beta} + a_i + \bar{u}_i \tag{5}$$

where $\bar{y}_i$ denotes the mean of all time periods of y_{it}, and the same holds for $\bar{\boldsymbol{x}}_i$ and $\bar{u}_i$. Eq. (5) is then deducted from Eq. (3) which results in:

$$y_{it} - \bar{y}_i = (\boldsymbol{x}_{it} - \bar{\boldsymbol{x}}_i)^{'}\boldsymbol{\beta} + a_i - a_i + u_i - \bar{u}_i \tag{6}$$

This can equivalently be written as:

$$\ddot{y}_i = \ddot{\boldsymbol{x}}_i^{'}\boldsymbol{\beta} + \ddot{u}_i \tag{7}$$

where $\ddot{y}_{it}$ is the time-demeaned y-variable, $\ddot{\boldsymbol{x}}_{it}$ denotes the time-demeaned explanatory variables, and $\ddot{u}_{it}$ is the time-demeaned error. Since a_i only varies across observations and not over time, the mean for the unobserved effect over time is just the unobserved effect, and therefore a_i has been removed in Eq. (7). Since the unobserved effect has disappeared, the equation can be estimated by POLS. The coefficients are found by:

$$\hat{\boldsymbol{\beta}}_{FE} = \arg\min_{\boldsymbol{\beta}} \sum_{i=1}^{n}\sum_{t=1}^{T}((y_{it} - \bar{y}_i) - \boldsymbol{\beta}(\boldsymbol{x}_{it} - \bar{\boldsymbol{x}}_i))^2 \tag{8}$$

where the subscript FE denotes that coefficients are found by the FE method and T denotes the number of time periods in the data. The FE estimator assumes strict exogeneity of the explanatory variables for the estimator to be unbiased, which means that the idiosyncratic error, u_{it}, needs to be uncorrelated with each explanatory variable across all time periods. This is a strong assumption, which is often violated in case of omitted variables. However, since we have many different explanatory variables, which account for many different factors, we argue that this assumption holds. An important feature is that the FE regression allows for arbitrary correlation between the unobserved effect, a_i, and the explanatory variables in any time period. A drawback of the FE method is that any time in-varying variables are also demeaned away. For example, in a panel dataset following individuals, one could not include gender as this variable would not vary across time. However, in our pseudo panel dataset following regions across the twelve countries, all our variables are time-varying as the population within a region can change. Thus, the dummy variables are rather proportional variables, and the proportion of e.g. males can change over time.

4.4.3 One-way or two-ways fixed effects

As mentioned, the FE method removes the individual effect, a_i. Doing so takes the individual effects into account and is therefore referred to as a one-way FE. However, since panel data tracks individuals over time, there could also be a time effect in the data. This would imply that a time effect, γ_t, is added to Eq. (3):

$$y_{it} = \boldsymbol{x}_{it}^{'}\boldsymbol{\beta} + a_i + \gamma_t + u_{it} \tag{9}$$

The presence of time effects in the data, thus having both a_i and γ_t in the model, is known as two-way FE. Thus γ_t accounts for any time-specific effect that is not included in the regression. This could be any event happening in a given year, that effects all individuals. An example could be an oil embargo that affects the supply in all countries in the sample and therefore affects the economies of all regions. In a one-way FE model, we only correct for the issue that $Corr(\boldsymbol{x}_{it}, a_i \neq 0)$. However, if there is a time effect (and thus $Corr(\boldsymbol{x}_{it}, \gamma_t \neq 0)$), this will bias the error in the model if we do not account for this issue (Wooldridge, 2010, p. 299). Therefore, it is necessary to test for the presence of an unobserved effect and a time effect. This is usually done by the Breusch and Pagan (1980) test, which uses the loglikelihood function to test the null hypothesis (Baltagi, 2005, p. 59):

$$H_0 : \sigma_a^2 = \sigma_\gamma^2 = 0$$

where σ_a^2 and $\sigma\gamma^2$ denotes the variance of the individual effect and the time effect, respectively. The Lagrange Multiplier test statistic can be computed as:

$$LM = LM_1 + LM_2$$

where

$$LM_1 = \frac{nT}{2(T-1)}[1 - \frac{\sum_{i=1}^{n}(\sum_{t=1}^{T}\hat{u}_{it}^2)}{\sum_{i=1}^{n}\sum_{t=1}^{T}\hat{u}_{it}^2}]$$

and

$$LM_2 = \frac{nT}{2(n-1)}[1 - \frac{\sum_{t=1}^{T}(\sum_{i=1}^{n}\hat{u}_{it}^2)}{\sum_{t=1}^{T}\sum_{i=1}^{n}\hat{u}_{it}^2}]$$

where $\hat{u}$ denotes the estimated OLS residuals from running an OLS model on the pseudo panel data, and the LM statistic is χ_2^2 distributed (Breusch and Pagan, 1980). The statistic gives an idea of how much of the total variance is explained by the individuals' variation over time (LM_1) and the variation in each time period over all individuals (LM_2). The numerator in the square brackets in LM_1 finds the variation for each individual over time, without the effects of the correlations between individuals, which is included in the denominator. Therefore, if a large proportion of the total variance is explained by each individual, this indicates that the model has captured the most important effects and that there are no unobserved individual effects. On the other hand, if there is large correlation between some individuals, this will only be captured in the denominator, making the fraction in the square brackets small. This results in a large test statistic and a rejection of the null hypothesis. The implications are that something is missing in explaining the residuals in the model, such indicating the presence of individual effects (a_i). The same logic holds for LM_2 and the unobserved time effects (γ_t). This test, along with extensions and modifications of the test, is implemented in the 'plm' package in R (Croissant and Millo, 2008).

We found evidence for a rejection of the null hypothesis, indicating the presence of both time and individual effects. We have therefore used a two-ways FE regression when modelling our pseudo panel data. The intuition is similar to that of the one-ways FE – one detracts the mean over all time periods per individual and the mean over all individuals per time period and adds the mean across all observations (that is both over time and individuals).

$$y_{it} - \bar{y}_{i.} - \bar{y}_{.t} + \bar{y}_{..} = (\boldsymbol{x}_{it} - \bar{\boldsymbol{x}}_{i.} - \bar{\boldsymbol{x}}_{.t} + \bar{\boldsymbol{x}}_{..})\boldsymbol{\beta} + v_{it} - \bar{v}_{i.} - \bar{v}_{.t} + \bar{v}_{..} \tag{10}$$

where the subscripts $\bar{y}_{i.}$ denotes the mean of y over time, $\bar{y}_{.t}$ denotes the mean of y over individuals and $\bar{y}_{..}$ denotes the mean across all observations. Further, v denotes the composite error term such that $v_{it} = a_i + \gamma_t + u_{it}$. The subscript notation is similar for the other variables. Focusing on the error term, we find that:

$$v_{it} - \bar{v}_{i.} - \bar{v}_{.t} + \bar{v}_{..} = u_{it} + a_i + \gamma_t - \bar{u}_{i.} - a_i - \bar{\gamma} - \bar{u}_{.t} - \bar{a} - \gamma_t + \bar{u}_{..} + \bar{\gamma} + \bar{a} = (u_{it} - \bar{u}_{i.} - \bar{u}_{.t} + \bar{u}_{..})$$

Thus, the time and individual effects are 'swept away' and the $\boldsymbol{\beta}$-estimators can be found by OLS (Baltagi, 2005, p. 34).

4.5 Heteroskedasticity and serial correlation

Working with pooled cross-sectional data, heteroskedasticity can be an issue, since it is not the same individuals that are tracked in the different time periods. The assumption of homoskedasticity fails when the conditional variance of y changes with the explanatory variables. Thus, presence of heteroskedasticity will bias the estimated variance of the variables, and as a result the normal test statistics are inappropriate (Wooldridge, 2013, p. 258).

Therefore, in all POLS regressions we have used the Breusch and Pagan (1979) test for heteroskedasticity. Note that this test is distinct from the Breusch and Pagan (1980) test described in the previous subsection. To perform the test, one finds the estimated squared POLS residuals, $\hat{u}_i^2$, and regress them on the explanatory variables:

$$\hat{u}_i^2 = \delta_0 + \delta_1 x_1 + \cdots + \delta_m x_m + \epsilon \tag{11}$$

where ϵ is the error term and δ the coefficient on the explanatory variable x. From this the Lagrange-Multiplier (LM) statistic is computed from the number of observations multiplied by the R^2 of the regression in Eq. (11):

$$LM = nR^2_{\hat{u}^2} \overset{a}{\sim} \chi^2$$

which is asymptotically χ^2 distributed. The null hypothesis is:

$$H_0 : \delta_1 = \delta_2 = \cdots = \delta_m = 0$$

which states that the coefficients Eq. (11) are all equal to zero and therefore that the variance of y conditional on the explanatory variables is zero, which implies homogeneity. Rejecting H_0 indicates heteroskedasticity. One can correct for heterogeneity using White (1980) standard errors (see Appendix D for more detail).

Further, when working with panel data, serial correlation can be an issue that occurs when one observation's error term is correlated over time (Wooldridge, 2013, p. 376). This is only an issue in the pseudo panel data, since the pooled cross-sectional data are independently distributed. We test for the presence of serial correlation in the pseudo panel data using the Breusch-Godfrey test for autoregressive correlation of order q (Breusch, 1978; Godfrey, 1978). The intuition is similar to the Breusch and Pagan (1979). First, one finds the estimated time-demeaned idiosyncratic error, $\hat{\ddot{u}}_{it}$ it, by simple OLS for each time period and regresses these residuals on the explanatory variables and lagged estimated residuals for the last q time periods (Wooldridge (2010, p. 311), Wooldridge (2013, p. 376)):

$$\hat{\ddot{u}}_{it} = \delta_0 + \delta_1 x_{t,1} + \delta_2 x_{t,2} + \cdots + \delta_m x_{t,m} + \rho_1 \hat{\ddot{u}}_{t-1} + \rho_2 \hat{\ddot{u}}_{t-2} + \cdots + \rho_q \hat{\ddot{u}}_{t-q} \, for \, all \, t = (q+1), \ldots, T \tag{12}$$

Taking the R^2 from this regression, the LM statistic is computed as:

$$LM = (T - q)R_{\ddot{u}} \overset{a}{\sim} \chi^2_q$$

which is again asymptotically χ^2_q distributed. The null hypothesis states that there is no serial correlation: $H_0 : \rho_1 = \rho_2 = \cdots = \rho_T = 0$, Rejecting the null hypothesis therefore indicates that the data contains some degree of serial correlation. To correct for serial correlation, the Arellano (1987) robust standard errors can be used (see Appendix D for more detail). By applying these robust standard errors will we also account for heteroskedasticity ((Wooldridge, 2010, p. 311), Arellano (1987)).

In the pseudo panel data, we rejected H_0 at the 1% level in both tests and find evidence that the data has both serial correlation and heteroskedasticity. We therefore use the Arellano (1987) robust standard errors. In the POLS regressions, we report White (1980) heteroskedastic-robust standard errors, since we detected heteroskedasticity in all country specific regressions. Further, in the structural change POLS regressions, we also report White (1980) heteroskedastic-robust standard errors due to the presence of heteroskedasticity.

4.6 The implications of weighted data

As we have previously described, the nature of the survey data necessitates the use of the design weights. Applying the design weights will affect all the models present in this study.

The difference in population sizes of countries and the fact that the number of observations sampled in each country is approximately the same makes smaller countries have a larger impact on average effects than the country's 'true' impact. Solon et al. (2015) suggests that if some cohorts in a data set are over/underrepresented, and it is possible to create dummy variables for each cohort, one can correct for this heteroskedasticity by simply including these dummy variables in the regressions. Heteroskedasticity arises since the error term is correlated with the sampling criteria and including dummy variables will therefore capture these country specific correlations. It is obvious that correcting for population sizes is not necessary in all of the methods described in this section. It is only meaningful when more than one country is included in the regression. This applies to our panel data regressions, however since we have constructed our pseudo panel dataset from regions as the cohorts, this factor already takes into account regional and hence country differences.

The design weight is applied to each individual in the survey. It is designed to be the inverse of the probability of the individual being sampled. This weight can therefore be used in all our regressions. In the pseudo panel data, the design weights are averaged across individuals in every region and will therefore measure the inverse of the average probability that the individuals in the region were sampled.

The design weights are applied by weighting some observations more than others, and thereby increasing their impact on the estimates. We use two different approaches to weighting the data. For the panel data we apply weighted FE, which can be computed as (Imai and Kim, 2019):

$$\hat{\boldsymbol{\beta}}_{WFE} = \arg\min_{\boldsymbol{\beta}} \sum_{t=1}^{T} w_{it}[(y_{it} - \bar{y}_i) - \boldsymbol{\beta}(\boldsymbol{x}_{it} - \bar{\boldsymbol{x}}_i)]^2 \tag{13}$$

where w_{it} denotes the weight on each observation i at time period t. For the POLS regressions the weighting is performed by using a pooled weighted least sqaures regression, in which the standard POLS optimization function is altered to:

$$\hat{\boldsymbol{\beta}}_{PWLS} = \arg\min_{\boldsymbol{\beta}} \sum_{i=1}^{n} w_i(y_i - \boldsymbol{x}_i\boldsymbol{\beta})^2 \tag{14}$$

Except for the weights, the optimization function is equal to the usual OLS minimization problem. According to Solon et al. (2015), this weighting is necessary to ensure consistency of the estimated coefficients. Further, the authors recommend using White (1980) heteroskedasticity-robust standard errors in linear regression models, because including the weights in the estimation process introduces heteroskedasticity. In the rest of our study we will refer to the models used as Pooled Weighted Least Squares (PWLS) and Weighted Fixed Effects (WFE). Further, when referring to the WFE regression, we mean the two-ways weighted fixed effects regression.

4.7 Variable selection methods

The variable selection methods used in this study originate from the data science literature and have typically been used to reduce the variance of the OLS model. In the models we will describe here, this is being done by coefficient shrinkage, and thereby variable selection. We are mainly interested in the variable selection properties of the methods.

The original idea behind these methods was that the OLS can produce quite different coefficient estimates if estimated on different samples. Especially in cases of high multicollinearity of the explanatory variables, the OLS minimization function would produce too large coefficient estimates. This is a significant problem when trying to predict future or unseen data, as the OLS will have overfitted the model to known data. Further, in large datasets with many explanatory variables, OLS will include all variables, which can make it difficult to interpret the results. The shrinkage methods (as they are called in the data science literature), try to fix these issues by adding constraints on the sizes of the coefficient estimates. Thereby the loss function is told that the coefficients cannot exceed a certain size and the model is therefore less likely to overfit the data. This, however, entails a tradeoff between variance and bias in the model. Bias means that taking the expectations of the coefficient estimates would equal the true population coefficient. Under certain assumptions, this is said to be true for the OLS estimates. However, by imposing constraints on the coefficients, it becomes obvious that taking the expectation will no longer lead to true coefficient. On the other hand, by imposing the constraints, the coefficient estimates are likely to be similar, independent of the data used to optimize the model. This is due to the constraint setting a maximum on the value that the coefficients can take and therefore, regardless of the data, the coefficients will be bound by this constraint, and therefore be very similar across different datasets. If the constraint is very restricting, the variance will approach zero as all coefficients approach zero independent of what data is used to fit the model.

In the following subsections we will discuss three interrelated methods to reduce model complexity; the ridge (Hoerl and Kennard, 1970), lasso (Tibshirani, 1996) and elastic net (Zou and Hastie, 2005) regressions. In all three methods the variables are standardized so they have the same scale, mean zero and standard deviation one.

4.7.1 The ridge regression

If the explanatory variables in OLS are highly correlated, OLS can produce coefficient estimates that are too large in absolute value and even have the wrong sign of the estimated coefficients compared to the 'true' model (Hoerl and Kennard, 1970). By setting a constraint on the sizes of the coefficients, the authors argue that the coefficient estimates will be more equal to the true coefficients. As mentioned, this will introduce some bias to the model but lower the variance of the coefficient estimates. Mathematically, this is done by adding a term to the OLS loss function, which incentivizes lower coefficients than in OLS:

$$L_{ridge}(\hat{\boldsymbol{\beta}}) = \sum_{i=1}^{n}(y_i - \boldsymbol{x}_i^{'}\hat{\boldsymbol{\beta}}^2) + \lambda \sum_{j=1}^{m} \hat{\beta}_j^2 = \|\boldsymbol{y} - \boldsymbol{X}^{'}\hat{\boldsymbol{\beta}}^2\| + \lambda\|\hat{\boldsymbol{\beta}}\|^2 \tag{15}$$

The first part of Eq. (15) is the usual OLS estimation where the residual sum of squares (RSS) are minimized. The second part sets a constraint on the coefficients. This can be seen as the loss function (which we try to minimize) becomes larger for larger values of $\hat{\boldsymbol{\beta}}$. The penalization parameter, λ, is a nonnegative number, and larger values of λ will increase the shrinkage of the coefficients. The regularization parameter, λ, has the properties:

$$\lambda \to 0 \Rightarrow \hat{\boldsymbol{\beta}}_{Ridge} \to \hat{\boldsymbol{\beta}}_{OLS}$$

and

$$\lambda \to \infty \Rightarrow \hat{\boldsymbol{\beta}}_{Ridge} \to 0$$

In a ridge regression all explanatory variables will be kept in the model. This description of the ridge regression is somewhat brief, the reason being that we are not using the ridge in the following analysis. As we are interested in reducing the number of explanatory variables, and not just reducing the absolute value of the coefficients, there are methods more suited for this task, namely the lasso and elastic net. However, both of these methods are developed based on the idea of the ridge, and a short explanation is therefore suitable for our further approach. In fact, the ridge never reduces coefficients to zero, which we will discuss in more detail soon.

4.7.2 The lasso regression

The 'least absolute shrinkage and selection operator' (lasso) was first proposed by Tibshirani (1996). The lasso 'minimizes the residual sum of squares subject to the sum of the absolute value of the coefficients being less than a constant' (Tibshirani, 1996, p. 267). This constraint leads the model to produce coefficients that are exactly 0 and therefore works as a method for variable selection. Mathematically, the lasso estimators are found by the loss function of OLS with an added term containing the absolute value of the coefficients multiplied by the regularization parameter:

$$L_{lasso}(\hat{\boldsymbol{\beta}}) = \sum_{i=1}^{n}(y_i - \boldsymbol{x}_i^{'}\hat{\boldsymbol{\beta}}^2) + \lambda\sum_{j=1}^{m}\hat{\beta}_j^2 = \|\boldsymbol{y} - \boldsymbol{X}^{'}\hat{\boldsymbol{\beta}}^2\| + \lambda\|\hat{\boldsymbol{\beta}}\| \tag{16}$$

Note here that the regression is almost identical to Eq. (15), the only difference being that the penalization is now taking place on the absolute value of the coefficient estimates rather than the squared coefficient estimates. This difference is subtle but important. To see why, it is easier to rewrite Eq. (15) and Eq. (16) to a binding constraint problem:

$$\min_{\boldsymbol{\beta}}\left[\sum_{i=1}^{n}(y_i - \boldsymbol{x}_i^{'}\boldsymbol{\beta})^2\right] \textit{subject to} \sum_{j=1}^{m}\hat{\beta}_j^2 \leqslant s \tag{17}$$

and

$$\min_{\boldsymbol{\beta}}\left[\sum_{i=1}^{n}(y_i - \boldsymbol{x}_i^{'}\boldsymbol{\beta})^2\right] \textit{subject to} \sum_{j=1}^{m}|\hat{\beta_j}| \leqslant s \tag{18}$$

where s denotes the constraints on the coefficients. It can be shown that the lasso and ridge coefficients solve the problems in Eq. (17) and Eq. (18). There exists a λ and s, such that the coefficients in Eq. (17) and Eq. (18) are equal to the coefficients from Eq. (15) and Eq. (16). This rewriting shows that a larger λ equals a smaller s. A lower value of s puts a stricter constraint on the problem, and the same is case for a large λ. To avoid confusion, note that equation Eq. (18) and Eq. (16) are the lasso optimization problems, and Eq. (17) and Eq. (15) are the ridge optimization problems.

In the case of two explanatory variables, by squaring the coefficients in the constraint, the boundary of the constraint becomes a circle when graphed geometrically, and when taking the absolute value, this gives a square. In this case, the constraint would be $\beta_1^2 + \beta_2^2 \leqslant s$ in the ridge and $|\beta_1| + |\beta_2| \leqslant s$ in the lasso. Thus, the tradeoff between the coefficients is strictly convex in the ridge regression and linear in the lasso. In Figure 1 these constraints are visualized by the square in the left panel (lasso) and the circle in right panel (ridge). The OLS coefficient estimates are visualized by the $\hat{\boldsymbol{\beta}}$ and the ellipses around it are the contours of equal RSS. The further away the contours are from the OLS estimates, the larger is the RSS. The intersect between the objects and the contours are where the constraints are satisfied while minimizing the RSS.

From the figure, one can induce why the ridge regression never sets coefficients to zero while the lasso

Figure 1: Lasso and ridge boundary conditions

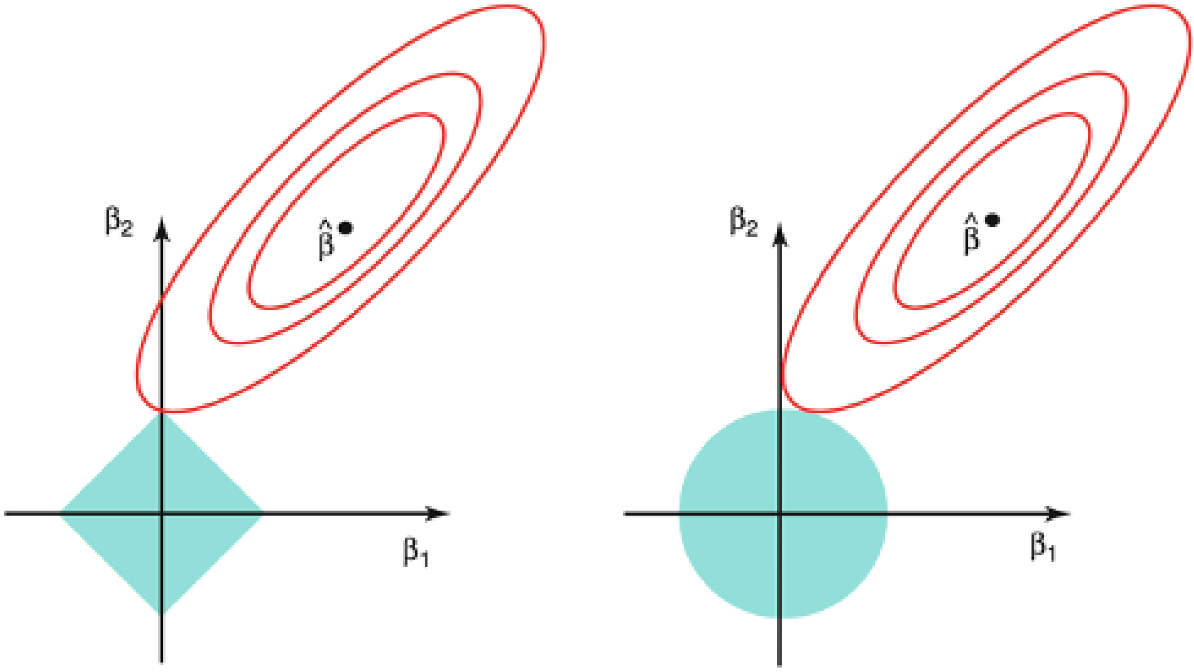


Figure 1 is taken from James et al. (2013, p. 222). The figure illustrates the boundary conditions of the lasso (the square in the left panel) and ridge (the circle in the right panel) regressions and the ellipses are the contours of equal RSS in the OLS minimization problem.

does. Unless the OLS estimate of a coefficient is already zero, the intersect will never be on one of the axes, on which a coefficient is set to zero. This can happen in the lasso due to the 'corners' of the constraint. In settings with many explanatory variables, the picture is not as easy to visualize as the one in Figure 1. In this case the lasso will almost always reduce some variables to zero, as the probability of the intersection being on one of the many axes will increase. It can further be shown that in the two explanatory variables case the ridge reduces coefficients by a proportion (and therefore never to zero) while lasso reduces the coefficients by a constant (and lower coefficients will therefore possibly be reduced to zero (James et al., 2013, pp. 214-222).

4.7.3 The elastic net regression

The ridge and lasso regressions have been combined by Zou and Hastie (2005) in what they label the elastic net. The elastic net takes advantage of the properties from both the ridge and lasso regression. As mentioned, the advantage of the ridge is that it could achieve better prediction performance than OLS through a bias-variance trade-off. However, a drawback of the ridge is that it keeps all explanatory variables in the model. The lasso removes variables by setting their coefficients equal to zero, but one drawback of the lasso is that if there is a group of explanatory variables with high pairwise correlation, the lasso tends to only select one variable from the group without care of which one is chosen. Further, it has been shown that the ridge outperforms the lasso in cases with more observations than explanatory variables (Zou and Hastie, 2005). The elastic net is introduced to correct for these problems by combining the ridge and lasso.

In the paper by Zou and Hastie (2005) the loss function for what they call the naïve elastic net is given as:

$$L_{Naive\ elastic\ net}(\hat{\boldsymbol{\beta}}) = \|\boldsymbol{y} - \hat{\boldsymbol{X}}'\hat{\boldsymbol{\beta}}\|^2 + \lambda_2\|\hat{\boldsymbol{\beta}}\|^2 + \lambda_1\|\hat{\boldsymbol{\beta}}\| \tag{19}$$

Where λ_2 refers to the penalizing term for ridge and λ_1 refers to the penalizing term for lasso. However, the authors find that it does not perform satisfactorily unless it is close to either ridge or lasso. The naïve elastic net optimizes the two λs in a two-stage procedure, first optimizing the ridge regressions coefficient and then the lasso coefficient. This two-stage procedure makes performs a sort of 'double shrinkage', which does not help to minimize the variance much, and creates extra unnecessary bias compared to pure ridge and lasso shrinkage – this is why the authors call it naïve (Zou and Hastie, 2005). To correct for this two-stage approach one of the authors, Hastie, and others have created an alternative approach, which we will use in our study (Simon et al., 2011). The adjusted loss function of the elastic net is given as (Hastie and Qian, 2016; Simon et al., 2011):

$$L_{Elastic\ net}(\hat{\boldsymbol{\beta}}) = \frac{1}{n}\|\boldsymbol{y} - \hat{\boldsymbol{X}}'\hat{\boldsymbol{\beta}}\|^2 + \lambda\left(\frac{1-\alpha}{2}\|\hat{\boldsymbol{\beta}}\|^2 + \alpha\|\hat{\boldsymbol{\beta}}\|\right) \tag{20}$$

The terms here denote the same as previously described except for α, which has the properties that $\alpha = 0$ the regression becomes the ridge and when $\alpha = 1$ it becomes the lasso. When $0 < \alpha < 1$ the regression is a combination, namely the elastic net. The difference between the naïve elastic net (Eq. (19)) and elastic net (Eq. (20)) is that elastic net optimizes over all values of α between 0 and 1 for a fixed value of λ, instead of running the above mentioned two-stage approach. We will describe this in more detail below. Zou and Hastie (2005) show, on both real and simulated data, that the elastic net often outperforms the lasso in terms of prediction accuracy while enjoying similar sparsity.

Figure 2: Elastic net and lasso boundary conditions

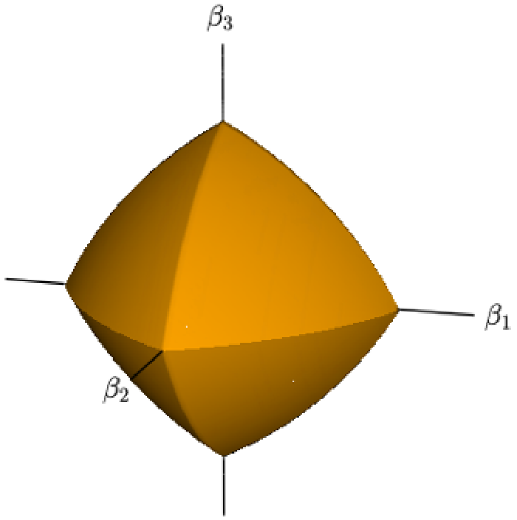


Figure 2 is taken from Tibshirani et al. (2015, p. 58). The figure illustrates the boundary conditions of the elastic net (the 'ball' in the left panel) and the lasso (the cube in the right panel) regressions and the ellipses are the contours of equal RSS in the OLS minimization problem.

By combining the ridge and lasso regressions, the elastic net enjoys the 'corners' of the lasso, while having strictly convex edges. These differences are shown in Figure 2, where the elastic net (left panel) is compared to the lasso (right panel). The strict convexity of the elastic net minimization problem ensures that highly correlated explanatory variables are either kept in the model or all dropped. This is in contrast to the lasso, where the optimization problem would choose one of the correlated variables at random (Tibshirani et al., 2015, p. 58).

4.7.4 Practical implementation of the variable selection methods

The values of λ and α are not pre-defined in the equations described above, and we therefore have to find the optimal values for both parameters (only λ in lasso). One way to do so is via cross-validation, which is an approach where the data is split into a number of folds, often denoted k. Often k is set to ten, which means that the data is split into ten random samples with approximately equal size. The folds are then categorized as either training or testing data, where the training data is used to estimate the parameters, and the test data is used to evaluate the accuracy of the models (Hyndman and Athanasopoulos, 2018, pp. 62-63). For example, if k is equal to ten, the regression (or model) is estimated on nine folds and tested on the tenth. The prediction accuracy is then computed 'out-of-sample' on the left-out fold. We will use the root mean squared error (RMSE) as our accuracy measure, as this is the default in the software we use. This procedure is done for each combination of the ten folds and tested on the left-out fold. For every combination of the tuning parameters (λ and α) a model is estimated on the training data and tested on the testing data for all combinations of training and test data. The RMSE is averaged across the different testing samples in order to find the tuning parameters that perform best across all the testing samples. To minimize the randomness in parameter optimization we repeat the process outlined above ten times with the ten folds randomly selected every time. The models with the lowest average RMSE across the ten repetitions is chosen for further analysis.

In contrast to the pooled cross-sectional data, the pseudo panel dataset has a time dimension since we have averaged across regions and the regions are included in every round of the survey. Due to the time structure of the pseudo panel dataset, we need to construct the folds ordered in time to not lose the information of time-dependence in the data. If the data are split randomly in the pseudo-panel data, we risk using the latter rounds to explain variation in the previous rounds. Since we follow the same regions over time, this would not make intuitive sense. To account for this problem, we have created the k folds based on our different rounds. Using this approach, we create 9 folds, one for each round of survey data. We then start by estimating the models on the first three rounds and test on the fourth and fifth. Afterwards, we estimate on the first four rounds and test on the fifth and sixth and so on until we have tested on round eight and nine (see e.g. Hyndman and Athanasopoulos (2018)). By adopting this approach, we can use cross-validation to find the optimal parameter values.

Friedman et al. (2010) have developed a software package for R called ‘glmnet’. The package is built around Eq. (20) where the user can define α to determine the type of regression to run, $\alpha = 0$ is the ridge regression and $\alpha = 1$ is the lasso regression. To optimize the regularization parameter, λ, we have followed the approach described by Friedman et al. (2010) about pathwise coordinate descent. The method is to find λ_{max} which is the smallest value that results in all estimated coefficients being zero ($\hat{\boldsymbol{\beta}} = 0$). λ_{max} can be computed as:

$$\lambda_{max} = \max \frac{\left| \langle \hat{\boldsymbol{X}}', \boldsymbol{y} \rangle \right|}{n} \tag{21}$$

where $\langle \hat{\boldsymbol{X}}', \boldsymbol{y} \rangle = \sum_{i=1}^{n} x_{ij} y_i$. In words $\langle \hat{\boldsymbol{X}}', \boldsymbol{y} \rangle$ finds $y_i \cdot x_{ij}$ for all observations and then takes the sum for each explanatory variable (the column sum). The absolute value of this number is then found. λ_{max} is then the largest value of these column sums divided by the number of observations and is the value that sets all coefficients to zero. The strategy to find λ in Friedman et al. (2010) is to first find λ_{min} which is equal to $\lambda_{mn} = \theta\lambda_{max}$, where θ is an arbitrary value, and secondly to construct a sequence of ψ values of λ from λ_{max} to λ_{min} on a log scale. By letting the sequence of λ decrease from λ_{max} to λ_{min}, more and more explanatory variables are included in the model. However, we believe that the optimization process should have the possibility to pick the OLS model, and therefore we have added $\lambda = 0$ in the λ-sequence. This results in $\psi + 1$ values of λ. Friedman et al. (2010) suggest the values of $\theta = 0.001$ and $\psi = 100$. After trying $\theta = 0.001$, the cross-validation approach often chose the lowest values of λ which was not 0, and due to the relatively large value of θ, this often resulted in large λs, where all variables were removed. We therefore let the approach choose smaller values of λ by setting $\theta = 0.00001$ or $\theta = 0.001$ in the PWLS and WFE regressions, respectively. With $\psi = 100$ this results in 101 different values of λ.

In the lasso regressions α is set to 1, hence the parameter tuning is only over λ. For elastic net regressions both α and λ are optimized. For this reason, we have created a sequence of α's from 0 to 1 by 0.01 intervals, which results in 101 different α values. To optimize the parameters, an optimizing grid is constructed which consists of all combinations of αs and λs resulting in $10,201$ different combinations. These combinations are used to find the optimal model by cross-validation, as outlined above. We use the R-package 'caret' developed by Kuhn et al. (2008) to find the optimal combination of the parameters. 'Caret' is necessary since 'glmnet' does not provide the possibility to optimize over the α values.

After optimizing the parameters, we use the variables selected by the elastic net and lasso regressions in our econometric regressions. The data science literature is often focused with prediction accuracy, which is why the RMSE is the default measure when cross-validating in regression settings. By letting the elastic net and lasso choose variables based on the RMSE in the 'out-of-sample' folds, we believe that they choose the most important variables in explaining the variation in the left-right scale on unseen data. Further, by identifying the most important variables in a cross-validation setting, we prevent overfitting the data, as the most important variables are tested on unseen data in the optimization process. This gives us an indication of the most important variables, which we can use for further analysis, despite our somewhat different focus on significant variables rather than high prediction accuracy. To interpret the results, we will use WFE and PWLS and thereby focus on a more econometric coefficient and significance approach. Data science and traditional econometrics have different advantages and by combining these two fields we hope to exploit benefits from both. The econometric approaches help us interpret the coefficients of the variables selected by the elastic net and lasso. We will use the elastic net regression as our main way of decreasing the number of variables and the lasso will be used as a robustness check.

4.7.5 Panel data in lasso and elastic net

The optimizing process in lasso and elastic net is built on the OLS framework as described in subsection 4.1. For panel data, we therefore need to make an adjustment to our data to account for this. The transformation that we have used is to demean the data to create a two-ways FE dataset. We have demeaned the data as described in subsubsection 4.4.3 and run the elastic net and lasso on this dataset.

4.7.6 Weights in elastic net and lasso

Weighting the data is also necessary when we run the variable selection methods. In general, the elastic net (and lasso when $\alpha = 1$) optimization function becomes:

$$L_{Elastic\,net}(\hat{\boldsymbol{\beta}}) = \frac{1}{n}\boldsymbol{w}\|\boldsymbol{y} - \hat{\boldsymbol{X}}'\hat{\boldsymbol{\beta}}\|^2 + \lambda\left(\frac{1-\alpha}{2}\|\hat{\boldsymbol{\beta}}\|^2 + \alpha\|\hat{\boldsymbol{\beta}}\|\right) \tag{22}$$

where the only difference to Eq. (20) are the weights, $\boldsymbol{w}$ which is a column vector of $n \times 1$. The weights applied to this minimization problem are the design weights. From now on, when we refer to elastic net and lasso, we mean the weighted regressions.

4.8 Robustness checks

To ensure that our results are valid, we will perform several robustness checks in the results subsection 5.1 and subsection 5.2. We have already described the lasso regression, which we use as a robustness check for the elastic net. In this way we ensure that both approaches have the same variables included and we are not missing important variables in our regression due to variable selection method. Further, in subsection 3.5 we found the correlation to be 56% between political self-placement and the position of the party the individual voted for in the last election. We can further use this scale based on the party the individual voted for as a left-right scale (party-based left-right scale) to check the validity of our results. Lastly, we will compare the pseudo panel dataset with the full pooled cross-sectional dataset. The pseudo panel data is created from the full cross-sectional dataset and therefore it is interesting to see if we lose some information in this transformation. Here we will use a PWLS regression instead of the WFE regression used on the pseudo panel data. For the robustness checks using the party-based left-right scale and the pooled cross-sectional dataset, we use the elastic net to select the variables as previously described.

4.9 Summary

In this section we have described how we have tested for serial correlation and heteroskedasticity. Please note that these tests were performed on the variables selected by the elastic net and lasso rather than on all the variables.

In order to avoid confusion, we will give an outline of the methodological approach of this study in chronological order. First, in subsection 5.1, we use the elastic net on the pseudo panel data, which contains all observations grouped by region. We then run a WFE regression on these explanatory variables and interpret the results on a broader cross-country level. This will help us find the most important variables across countries. Second, we turn to the cross-sectional data split by country in subsection 5.2. Again, we first use the elastic net to identify important variables, which we use to estimate PWLS regressions. This allows us to interpret the results on a country specific level and to compare the countries and welfare regimes. Finally, in subsection 5.3, we create interaction variables for each round dummy and the most important variables found in subsection 5.2 and include them in the PWLS regressions also used in subsection 5.2. Thereby, we can compare the coefficients for round one and nine to see the evolution in coefficients across time. We end subsection 5.1 and subsection 5.2 with a discussion of the implications of the robustness checks. In subsection 5.4 we conclude on the most important findings.

5 Results

In the following section, we seek to describe the most important findings in our regressions. We start by describing the findings of the analysis using the WFE method. Afterwards, we move the focus to the results of the country specific PWLS regressions and lastly, we focus on the structural changes in the slopes of the most important variables identified in the PWLS regressions. All regressions mentioned in this section use the elastic net variables. We supplement subsection 5.1 and subsection 5.2 by a discussion of robustness checks and their implications. We will try to give a brief explanation of the variables when we comment upon them. However, due to the large number of variables and sometimes lengthy descriptions, we refer to Table C1 in Appendix C for the full descriptions. When we describe variables as being significant, we mean at the 5% level or higher. Finally, when we describe the findings, we will refer to variables being negatively or positively correlated with self-placement. As the left-right scale is measured between 0 and 10, a negative correlation is equivalent to saying left self-placement, as a higher value of a negatively correlated variable would indicate placement further to the left (closer to 0) on the scale.

5.1 Pseudo panel data

In this section we describe the main findings on the pseudo panel data using the WFE model. First, we discuss the main results of the elastic net. We then interpret the post-elastic net WFE regression. We divide the following section into the variable groups in the order described in the theoretical framework. Before diving into the results, please note that the coefficients of the variables can be difficult to interpret, especially for dummy variables, as described in section 3. The focus in the following sections is to a larger degree on the direction and significance of variables rather than the magnitude of the coefficients.

5.1.1 Post-elastic net WFE regression

In Table 6, we have included the variables which are significant at the 5% level or higher in the post-elastic net WFE regression. The table further shows the number of observations, optimal values for λ and α, number of variables left in the regression, and the adjusted R^2. In Table E1 in Appendix E all variables are included regardless of whether they are significant or not.

Table 6: Post-elastic net WFE regression

Group	Sub-group	Variable	Coefficient
			Dependent variable: lrscale
Politics	Interest in politics and political activism	sgnptit	-0.567^{***} (0.171)
	Trust in institutions	trstprl	-0.086^{**} (0.034)
	Satisfaction with society	stfdem	0.152^{***} (0.036)
	Immigration	imdfetn	-0.385^{***} (0.132)
		imwbcnt	0.108^{**} (0.051)
	Wealth redistribution	gincdif	-0.215^{***} (0.058)
	Tolerance for homosexuals	freehms	-0.199^{***} (0.059)
Subjective well-being, social exclusion, religion, national and ethnic identity	Social activity	sclmeet	0.133^{***} (0.050)
	Religion	pray	0.158^{***} (0.049)
Gender and age	Gender	gndr	0.515^{***} (0.158)
Socio-demographics	Education	eduisced2	0.907^{***} (0.345)
		eduisced6	1.066^{***} (0.375)
		eduisced7	0.869^{**} (0.383)
	Employment	atncrse	-0.442^{**} (0.193)
Human values	Universalism	ipeqopt	-0.365^{***} (0.089)
		ipudrst	0.178^{**} (0.081)
		impenv	-0.274^{***} (0.076)
	Tradition	imptrad	0.152^{**} (0.063)
Observations			1,197
Variables			62
α			0.04
λ			0.162
Adjusted R^2			0.683

*p<0.1; **p<0.05; ***p<0.01

Note: Table 6 is a snippet of Table E1 showing the full results of the WFE regression using the elastic net variables. This table only includes the significant variables. The variables are grouped in the same manner as described in the theoretical framework. The standard errors are Arellano (1987) heteroskedasticity and serial correlation robust standard errors.

The adjusted R^2 for the WFE regression using the elastic net variables was 0.683. The optimal α is found to be 0.04 for the elastic net, and the optimal λ is found to be 0.162. There are 62 variables left in the elastic net out of 84 variables. We had hoped for more variables to be removed. However, the low value for α indicates that the regression is close to the ridge regression, and with a relatively low value of λ, the coefficients are not greatly penalized. This could indicate that many variables are significant in explaining the left-right scale but there are only 18 significant variables in the WFE regression. We tested different combinations of α and λ in the cross-validation, and Figure 3 shows the 'out-of-sample' RMSE for these combinations. It seems that the cross-validation results are similar for different combinations of λ and α in a matter where higher α means lower λ. In general, our results do not seem to be an odd case but are rather similar to other combinations of λ and α. This could be a result of the properties of the elastic net, which, in contrast to the lasso, keeps groups of highly correlated variables rather than picking one variable at random and disregarding the others. This can be seen in Table E1 in Appendix E, where the lasso has dropped most immigration variables, but the elastic net has kept all, despite them not being significant in the WFE regression.

Figure 3: RMSE for different combinations of α and λ

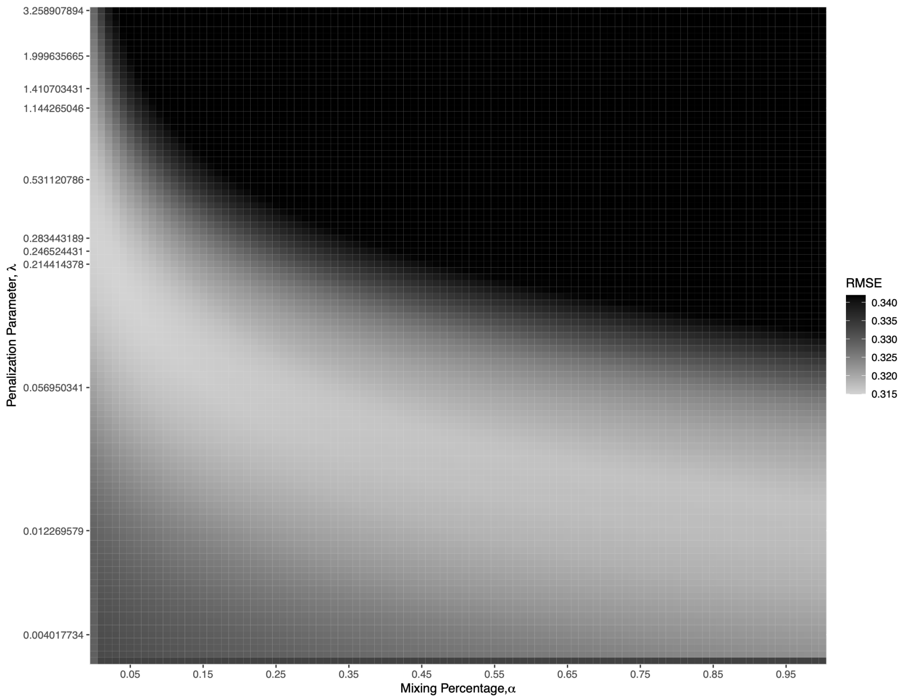


Figure 3 shows the RMSE over ten repeats of ten-fold cross-validation. The x-axis shows different values of the mixing percentage, α, and the y-axis shows different values of the penalizing parameter, λ, in decreasing order from λ_{max} to λ_{min} on a log-scale. Light gray boxes indicate lower RMSEs and darker colors indicate higher RMSEs. There seems to be a tradeoff between higher αs and lower λs indicated by the white area.

Politics

In the political activity group, only the variable for signing petitions (sgnptit) is significant. The variable is significant at the 1% level and has a negative coefficient, indicating that political activity is negatively correlated with self-placement. We did not expect any relationships for this group of variables.

In the variable group measuring trust in institutions, trust in parliament is significant at the 1% level, and with a negative coefficient. It seems that individuals trusting the institutions of society tend to associate more with the left. This is the opposite of what we expected, since Devos et al. (2002) found that trust in institutions was correlated with the political right.

Being satisfied with democracy (stfdem) is significant at the 1% level and positive. The other variables in the satisfied with society group are insignificant or dropped. The positive coefficients indicate that respondents that are more satisfied with society tend to associate more with the political right. We did not expect any relationships for these variables.

Two immigration variables are significant in the WFE regression. Imdfetn measures whether the individual believes more immigrants that are not from the same ethnic majority as in the country should be allowed in, and imwbcnt measures whether the respondent believes the country is made a better place to live by immigrants. The first mentioned is negative with a coefficient of -0.395 and significant at the 1% level. The latter is significant at the 5% level and with a coefficient of 0.108. It seems odds that the coefficients are of opposite sign, but they sum to a negative coefficient, and it seems that being positive towards immigration is correlated with left self-placement.

The variable gincdif, measuring how much the respondent agrees with a statement on increased wealth redistribution, is significant at the 1% level with a negative coefficient. This indicates, that on a broader level, distribution politics are still important in defining left and right. It indicates that old politics issues, such as redistribution of wealth, are still important. This gives support for the pluralization theory stating that new political values are added to the old instead of replacing them.

Further, the tolerance for homosexuality variable, freehms, is found to be significant at the 1% level and with a negative coefficient. Therefore, higher tolerance indicates more left self-placement. Based on the arguments made by Reynolds (2013), we expected equal rights issues to matter less as they become taken for granted in developed countries.

Subjective well-being, social exclusion, religion, national and ethnic identity

Being socially active, measured by the variable sclmeet, is significant and with a positive coefficient, indicating that people who believe they are more socially active than their peers tend to associate with the right.

One variable related to religion was significant at the 1% level and with a positive coefficient. The variable measures how often the individual prays. This indicates that religious people associate more with the right of the political spectrum. Knutsen (1995b) found that religion had a decreasing impact on left-right placement, which we will later test. No other variables in this group were found significant.

Gender and age

The variable gender is highly significant (1% level) and with a positive coefficient. In other words, on a general cross-country level, men tend to associate more with the right and women more with the left of the political spectrum. The coefficient is 0.515 indicating that if the proportion of men in a region increases with 0.10, the average left-right self-placement of the region would increase with 0.0515. Age has been dropped by the elastic net.

Socio-demographics

There seems to be some correlation between education and right self-placement as the ISCED 2, 6 and 7 dummies are significant and with positive coefficients. This could indicate that education in the range of ISCED 2 to 7 makes the individual lean more to the right and education levels above that will move the individual to the left making the relationship insignificant once again compared to the base dummy. However, the relationship seems to fluctuate between dummies, and we do not find any obvious correlations.

Atncrse, which measures whether the individual seeks to improve their own knowledge and/or skills for work, is significant at the 5% level with a negative coefficient. Individuals that tend to do so are associating more with the political left. None of the other variables in this variable group were found significant, and we had no expectations for this variable or for the other variables in the employment status group.

Human values

Two of the three universalism variables, ipeqopt and impenv, are significant at the 1% level and have negative coefficients. The variables measure whether the individual believes people should have equal opportunities and whether the environment should be protected, respectively. The last universalism variable, ipudrst, is significant at the 5% level but has a positive coefficient. The variable measures whether it is important for the respondent to listen to people different from oneself. In sum the coefficients for the universalism variables are negative, which indicates that the human value universalism is associated with the political left. On the other hand, the human value tradition is found to be correlated with the right, as measured by the imptrad variable, which is significant at the 1% level with a positive coefficient. The variable measures whether tradition is important to the respondent. No other human value variables are significant at the 5% level or higher. Since the majority of the countries in our sample are classified as 'liberal' in Piurko et al. (2011), we compare with their findings for this group. We find the same correlations as the authors when it comes to universalism and tradition. However, we do not find any correlation for conformity, security, or power and right self-placement or benevolence and left self-placement.

5.1.2 Robustness checks

In the following subsection we will describe the results of our robustness checks. We start with the lasso regression. Second, we discuss the regression where we used the party-based left-right scale as dependent variable, as described in section 4. Finally, we discuss the main differences of using a PWLS regression on the full pooled cross-sectional dataset containing all countries and all rounds instead of our WFE regression. All regression results can be found in Table E1 in Appendix E along with the WFE regression using the elastic net variables.

The lasso regression

For the lasso regression, the optimal λ is found to be 0.016 and thus way lower than in the elastic net, where λ was 0.162. Despite the lower α, the lasso removes more variables than the elastic net – there are just 29 variables left in the lasso and 62 left in the elastic net – but all the variables removed by the elastic net are also removed by the lasso. It seems that higher values of α (α=1 in lasso) offset the lower λ in the lasso and therefore remove more variables. This gives some certainty that the elastic net has not removed important variables from the regression that would have otherwise been included in the lasso. The adjusted R^2 using the lasso variables in the WFE regression is 0.666 and thus slightly lower than using the elastic net variable, where it was 0.683.

The main differences in the lasso variables are that trust in parliament, tolerance for homosexuality, the immigration variable imwbcnt, and the education dummies ISCED 2 and 7 have been dropped by lasso. Further, some variables that were insignificant or only significant at the 10% level using the elastic net variables are now significant at the 5% or 10% level. Despite these differences, the main conclusions of the WFE regression are the same, and our results seem fairly robust.

The party-based left-right scale

The adjusted R^2 using the party-based left-right scale is 0.674 and is therefore almost identical to using the usual left-right scale. For most variable groups, the correlation is similar to using the usual left-right scale.

For the political activity variables, we do not find the same variable sgnptit, measuring whether the individual has signed a petition over the last twelve months, to be significant. However, we find that two other variables in this group are significant at least at the 5% level and negative. Our conclusions are therefore the same but based on different variables. The same is the case for immigration, where the significance has moved to other variables, but the correlations remain the same.

Some variables, such as gender and tolerance for homosexuality are no longer significant. Other variables have become significant such as whether the individual or their family has been a victim of a burglary (crmvct), which predicts left self-placement, and health, which predicts right self-placement. Further, being unemployed and being a member of a trade union are now correlated with left self-placement.

The main variable groups described in both regressions have the same direction of coefficients and are still significant. Despite the differences mentioned here, the results seem robust.

PWLS on the full dataset

Since the pseudo panel dataset is created by taking the means over regions, we will use a PWLS regression with round and country dummies on all cross-sectional data as a robustness check for the validity of our approach. The adjusted R^2 in this regression is 0.196 and therefore way lower than in the WFE regression. This indicates that there could be a fixed effect in the data, which the PWLS does not account for, even though we have added country dummies to account for some of the individual effect. The elastic net regression has only removed 7 variables and the PWLS regression has many significant variables (61 excluding round and country dummies). With the education variables being the only exception, all coefficients that are significant in the WFE regression are also significant in PWLS except for sclmeet, measuring the social activity of the respondent, and atncrse, measuring whether the individual has attended courses or conferences or similar. However, trust in parliament and ipudrst (one of the universalism variables) have opposite signs in the two regressions. Again, the few differences indicate that our results are robust to different econometric approaches.

5.2 Country specific regressions

We now move the focus to the country specific regressions. To refresh, the approach used is to run weighted elastic net regressions for each country using all rounds. We then use the selected variables in PWLS regressions. Table E2 in Appendix E shows the full regression results. We split the full table into the variable groups defined in the theoretical framework. Lastly, we summarize and discuss the main findings across all four welfare regimes.

5.2.1 Post-elastic net PWLS regressions

Table 7 below shows the optimal parameters for the elastic net, the adjusted R^2, the number of observations in each PWLS regression, and the number of variables left in the regressions. The maximum number of variables that can be included in a regression is 92, which is the original 84 explanatory variables plus eight round dummies. Note that all eight round dummies are forced into the model so that the elastic net cannot drop them.

The average adjusted R^2 was found to be highest in the social democratic countries. We found the average adjusted R^2 to be 0.213, 0.223, 0.28, and 0.167 in conservative, liberal, social democratic, and post-communist countries, respectively. Further, the lowest number of variables in any of the regressions is 73 in Poland followed by 80 in Hungary. In general, not a lot of variables have been dropped. The case is similar to that of the WFE regression, and it seems that higher values of α are simply compensated by lower values of λ and vice versa. We had hoped for the models to drop more variables, and we will describe this issue in more detail in the discussion section. For now, we focus on the significance and direction of the remaining variables.

Social trust

Table 8 shows the social trust variables for all three welfare regimes. Only in the social democratic welfare regime does social trust seem to correlate with self-placement. The variable measuring trust in people is significant in all three countries and negative, indicating left self-placement. The variable is only significant at the 10% level in Finland, however.

Table 7: Model statistics

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Observations	12,201	18,568	12,341	9,030	13,384	11,051	13,036	12,324	11,335	7,255	8,053	6,389
Variables	92	87	90	83	81	92	90	88	81	80	73	87
α	0	0.03	0.01	0.04	0.09	0	0.47	0.02	0.19	0.06	0.1	0.03
λ	0.163	0.052	0.183	0.095	0.050	0.340	0.002	0.125	0.022	0.156	0.111	0.191
Adjusted R^2	0.14	0.2	0.3	0.34	0.19	0.14	0.26	0.29	0.29	0.15	0.14	0.21

Note: Table 7 reports the model statistics of the elastic net regressions on pooled cross-sectional data for the four welfare regimes. The table includes observations, variables kept by the model, the optimal cross-validated values for α and λ and the adjusted R^2 of the PWLS regressions using the variables identified by the elastic net.

Table 8: Social trust

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ppltrst	−0.009	−0.011	−0.004	−0.049***	−0.019*	0.001	−0.022*	−0.033***	−0.034**	−0.005	−0.021	−0.012
	(0.011)	(0.008)	(0.012)	(0.010)	(0.010)	(0.010)	(0.012)	(0.012)	(0.013)	(0.017)	(0.013)	(0.015)
pplfair	0.023**	−0.012	−0.006		−0.010	−0.008	0.013	0.010	−0.028**	−0.014	0.014	−0.003
	(0.012)	(0.008)	(0.013)		(0.011)	(0.013)	(0.013)	(0.014)	(0.014)	(0.017)	(0.014)	(0.016)
pplhlp	0.032***	−0.006			0.022*	−0.006	0.005	0.011	0.006		0.023*	0.010
	(0.010)	(0.008)			(0.011)	(0.012)	(0.010)	(0.011)	(0.011)		(0.013)	(0.015)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 8 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the social trust variables, measuring whether the respondent believes that most people are trustworthy (ppltrst), fair (pplfair), and helpful (pplhlp). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 9: Politics: Interest in politics and political activism

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
polintr	0.093***	−0.012	0.113***	0.037	0.084***	0.034	0.028	0.061**	0.036	0.074*		0.035
	(0.024)	(0.019)	(0.028)	(0.027)	(0.022)	(0.022)	(0.025)	(0.028)	(0.028)	(0.040)		(0.038)
vote	0.077		−0.086*	0.076*	0.060	0.093*	0.088**	0.062	0.207***	0.078	0.144***	−0.151**
	(0.062)		(0.049)	(0.046)	(0.041)	(0.050)	(0.044)	(0.051)	(0.054)	(0.069)	(0.055)	(0.065)
contplt	0.068	0.033	0.185***	0.144***	−0.043	0.055	0.042	0.072	0.083*			−0.176**
	(0.048)	(0.036)	(0.061)	(0.051)	(0.042)	(0.047)	(0.040)	(0.046)	(0.044)			(0.080)
wrkprty	−0.199**	0.140**	−0.222*	0.017	−0.165	0.061	−0.248***	−0.125	−0.160**	−0.444	−0.106	0.305**
	(0.095)	(0.065)	(0.126)	(0.072)	(0.109)	(0.100)	(0.093)	(0.089)	(0.070)	(0.294)	(0.158)	(0.150)
badge	−0.150**	−0.245***	−0.061	−0.234***	−0.214***	−0.121*	−0.019	−0.174**		0.506**	0.096	−0.186
	(0.071)	(0.060)	(0.068)	(0.072)	(0.065)	(0.073)	(0.043)	(0.086)		(0.218)	(0.108)	(0.182)
sgnptit	−0.028	−0.114***	−0.168***	−0.046	0.057*	−0.045	−0.090**	−0.161***	−0.031	0.163	0.190**	0.109
	(0.042)	(0.029)	(0.048)	(0.040)	(0.034)	(0.047)	(0.036)	(0.041)	(0.037)	(0.140)	(0.080)	(0.082)
pbldmn	−0.422***	−0.309***	−0.581***	−0.315***	−0.226***	−0.134**	−0.776***	−0.403***	−0.549***	0.655***		−0.213
	(0.072)	(0.045)	(0.063)	(0.081)	(0.081)	(0.067)	(0.114)	(0.099)	(0.061)	(0.186)		(0.152)
bctprd	−0.265***	−0.057**	−0.086*	−0.184***		−0.284***	−0.172***	−0.335***	−0.215***	0.161	0.332***	
	(0.057)	(0.029)	(0.048)	(0.042)		(0.057)	(0.036)	(0.053)	(0.043)	(0.156)	(0.106)	
clsprty	−0.010	−0.073***	0.061	0.099**		0.065*	0.040	0.016		0.523***	0.510***	
	(0.035)	(0.028)	(0.043)	(0.039)		(0.039)	(0.032)	(0.035)		(0.063)	(0.060)	

*p<0.1; **p<0.05; ***p<0.01

Note: Table 9 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet shows the social interest in politics and political activism variables, measuring whether the respondent has voted in the last election (vote), contacted a politician (contplt), worked for a party (wrkprty), worn a political campaign badge (badge), signed a petition (sgnptit), participated in a demonstration (pbldmn), or whether they feel closer to any given party (clsprty). The standard errors are White (1980) heteroskedasticity robust standard errors.

Politics

In Table 9 the variables related to political interest and activism are shown. Across the conservative, liberal, and social democratic welfare regimes, it seems that being more politically active is associated with left self-placement. This can be seen from the many significant and negative coefficients across all three welfare regimes, only with very few positive and significant variables. In Poland and Hungary, the relationship seems to be the opposite. In Slovenia it is difficult to judge the relationship as there are significant variables with different signs without dominance in one direction.

In terms of trust in institutions, it seems that trust in the legal system (trstlgl) is negatively correlated with self-placement in many countries. However, the tendency is only consistent for the conservative welfare regime. On the other hand, trust in the police (trstplc) is positively correlated with self-placement in the conservative and liberal welfare regimes. In total, the relationship is not clear, due to the conflicting direction of the coefficients. The results can be seen from Table 10.

Another variable group is measuring satisfaction with society. The results can be seen from **??**. Looking at the magnitude and significance of the variables in this group, it seems that being satisfied with society is positively correlated with self-placement in all welfare regimes.

When looking at the immigration variable group in Table 12, there seems to be a clear tendency across all welfare regimes that being positive towards immigration is associated with left self-placement. This is evident as all significant variables have negative coefficients except imsmetn in general and imbgeco in Finland. There is an interesting distinction here, as imsmetn measures whether the respondent believes that immigrants from the same ethnicity as the majority in the country should be let into the country. Oppositely, imdfetn measures the same but for immigrants of different ethnicity than the majority. Imsmetn is positive and significant in six countries. The relationship seems to be that people who are positive towards immigrants of the same ethnicity leans towards the right whereas individuals who believe immigrants from other ethnicities should be allowed in are leaning to the left. The remaining variable definitions can be read in the note to Table 12, but in general they measure whether the respondent is positive towards immigration.

Table 10: Politics: Trust in institutions

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
trstprl	0.005	0.025^{***}	0.011	0.034^{**}	0.023^{**}	0.019	0.015	0.040^{**}		0.066^{***}	0.039^{**}	-0.024
	(0.013)	(0.009)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)	(0.016)		(0.020)	(0.017)	(0.018)
trstlgl	-0.023^{**}	-0.028^{***}	-0.073^{***}	-0.049^{***}		0.001	-0.023^{*}	-0.076^{***}	0.006	0.030	-0.034^{**}	-0.076^{***}
	(0.011)	(0.008)	(0.013)	(0.014)		(0.011)	(0.012)	(0.013)	(0.013)	(0.020)	(0.017)	(0.017)
trstplc	0.027^{**}	0.039^{***}	0.114^{***}	0.061^{***}	0.024^{**}	0.029^{***}	0.014	0.025^{*}	0.038^{***}	-0.079^{***}	-0.040^{***}	-0.010
	(0.011)	(0.009)	(0.013)	(0.014)	(0.009)	(0.010)	(0.014)	(0.014)	(0.013)	(0.017)	(0.014)	(0.015)
trstplt	-0.005	-0.014	0.014	0.009	0.007	0.013	0.007	0.022	-0.022^{*}	0.005	0.019	0.071^{***}
	(0.013)	(0.010)	(0.015)	(0.014)	(0.012)	(0.012)	(0.013)	(0.016)	(0.012)	(0.020)	(0.018)	(0.020)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 10 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the trust in institutions variable group, measuring whether the respondent trust the parliament (trstprl), the legal system (trstlgl), the police (trstplc) and the politicians (trstplt). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 11: Politics: Satisfaction with society

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
stflife	0.042^{***}	0.036^{***}	0.069^{***}	0.031^{*}	0.047^{***}	0.054^{***}	0.116^{***}	0.079^{***}	0.041^{**}	0.012	0.068^{***}	0.056^{***}
	(0.016)	(0.010)	(0.014)	(0.017)	(0.014)	(0.014)	(0.018)	(0.020)	(0.017)	(0.016)	(0.017)	(0.016)
stfeco	0.067^{***}	0.034^{***}	0.078^{***}	0.031^{**}	0.051^{***}	0.018	0.044^{***}	0.051^{***}	0.034^{***}	0.035^{*}	0.010	0.022
	(0.012)	(0.008)	(0.014)	(0.012)	(0.011)	(0.011)	(0.011)	(0.013)	(0.011)	(0.021)	(0.016)	(0.018)
stfdem	-0.011	0.020^{**}	0.073^{***}	0.026^{**}	0.068^{***}	0.069^{***}	0.090^{***}	0.022	0.025^{**}	0.072^{***}	0.108^{***}	0.068^{***}
	(0.012)	(0.008)	(0.012)	(0.013)	(0.010)	(0.011)	(0.012)	(0.013)	(0.012)	(0.018)	(0.015)	(0.018)
stfedu	-0.009	0.025^{***}	-0.051^{***}	-0.015	-0.025^{**}	0.012	0.024^{*}	0.015		0.007	0.011	
	(0.011)	(0.008)	(0.012)	(0.011)	(0.010)	(0.011)	(0.014)	(0.013)		(0.016)	(0.013)	
stfhlth	0.055^{***}	0.017^{**}	0.052^{***}	0.015	-0.018^{**}	0.015	0.002	0.020^{*}	-0.051^{***}			0.007
	(0.014)	(0.007)	(0.012)	(0.011)	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)			(0.014)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 11 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the satisfaction with society group, measuring whether the individual is satisfied with life in general (stflife), the economy (stfeco), the democracy (stfdem), the education system (stfedu), and the health system (stfhlth). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 12: Politics: Immigration

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imsmetn	0.125***	0.066***	−0.007	−0.010	0.056	0.053	0.120***		0.108***	0.275***	0.081	−0.046
	(0.033)	(0.026)	(0.047)	(0.040)	(0.037)	(0.037)	(0.032)		(0.036)	(0.035)	(0.053)	(0.057)
imdfetn	−0.212***	−0.200***	−0.164***	−0.207***	−0.049	−0.097**	−0.128***	−0.148***	−0.110**	−0.141***	−0.116**	−0.053
	(0.039)	(0.030)	(0.051)	(0.044)	(0.043)	(0.044)	(0.037)	(0.036)	(0.049)	(0.053)	(0.058)	(0.059)
impcntr	−0.092***	−0.111***	−0.175***	−0.229***	−0.140***	−0.060	−0.244***	−0.143***	−0.235***	−0.196***	−0.067	−0.145***
	(0.033)	(0.026)	(0.041)	(0.040)	(0.033)	(0.037)	(0.033)	(0.033)	(0.043)	(0.051)	(0.053)	(0.051)
imbgeco	−0.004		−0.001	0.030**	0.012	0.016	0.048***	−0.017		−0.038*	0.023	0.033*
	(0.011)		(0.015)	(0.012)	(0.011)	(0.013)	(0.011)	(0.013)		(0.020)	(0.015)	(0.017)
imueclt	−0.060***	−0.065***	−0.098***	−0.083***	−0.040***	−0.006	−0.017	−0.090***	−0.070***	−0.023	−0.027*	−0.046**
	(0.012)	(0.009)	(0.014)	(0.012)	(0.011)	(0.014)	(0.012)	(0.012)	(0.011)	(0.018)	(0.015)	(0.018)
imwbcnt	−0.035***	−0.038***	−0.091***	−0.091***	−0.041***	0.005		−0.040***	−0.051***	−0.002		−0.066***
	(0.012)	(0.010)	(0.017)	(0.014)	(0.013)	(0.016)		(0.013)	(0.013)	(0.022)		(0.021)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 12 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the immigration variable group, measuring whether the individual believe more immigrants should be let in from the same ethnicity as the majority in the country (imsmetn), not from the same ethnicity as the majority (imdfetn) whether immigrants from poorer countries should be let in (impcntr), whether immigrants are good for the economy (imbgeco), the culture (imueclt), and whether immigrants in general are good for the country (imwbcnt). The standard errors are White (1980) heteroskedasticity robust standard errors.

The last variables in the politics group measure whether the respondent prefers greater wealth redistribution (gincdif) and has higher tolerance for homosexuality (freehms). The results can be found in Table 13. Gincdif is significant in all welfare regimes excluding the post-communist. It is always negative indicating that people who believe the government should do more to reduce differences in income associate more with the political left. Of the post-communist countries, this is only significant in Hungary. Based on the coefficients, this relationship seems to be the strongest in the social democratic countries.

Freehms is also significant in all welfare regimes except the conservative. However, this is only due to the variable being insignificant in Belgium. Again, the relationship is negative indicating that higher tolerance for homosexuality is associated with left self-placement. Looking at the coefficients the relationship seems to be the strongest in the post-communist countries.

Subjective well-being, social exclusion, religion, national and ethnic identity

In this category, a lot of variables are related to happiness, social activity, health and ethnicity. The results for these variables can be found in Table 14. There are not many relationships to be found across the welfare regimes. The variable crmvct, measuring whether the individual or a family member has been victim to burglary, is significant and positive in the conservative countries. Except for this variable, there are no consistencies across any welfare regime, and we will therefore not put more emphasis on these variables.

The other variables in this group relate to religion, and their results can be found in Table 15. By looking at the variables, it quickly becomes evident that religion is highly correlated with right self-placement in all welfare regimes. The variable rlgdgr, measuring religiosity, is significant in all countries at the 1% level and always with a positive coefficient. Further, the variable rlgatnd, measuring religious attendance, is significant in nine out of twelve countries. The last variable, measuring the amount of praying, is significant in four countries. All significant coefficients are positive in all countries, underlining the importance of religiosity and right self-placement.

Table 13: Politics: Wealth redistribution and tolerance for homosexuality

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
gincdif	−0.188***	−0.204***	−0.340***	−0.304***	−0.296***	−0.114***	−0.447***	−0.425***	−0.535***	−0.120***	−0.042	−0.037
	(0.018)	(0.014)	(0.020)	(0.019)	(0.017)	(0.019)	(0.017)	(0.017)	(0.019)	(0.035)	(0.027)	(0.033)
freehms	0.031	−0.081***	−0.075***	−0.130***	−0.045**	−0.074***	−0.110***	−0.119***	−0.072***	−0.154***	−0.144***	−0.166***
	(0.021)	(0.017)	(0.024)	(0.024)	(0.023)	(0.025)	(0.017)	(0.028)	(0.023)	(0.026)	(0.024)	(0.031)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 13 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the variables measuring whether the respondent believes the government should do more to reduce differences in income levels (gincdif) and whether the respondent believes homosexuals should be free to live life as they wish (freehms). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 14: Subjective well-being, social exclusion, religion national and ethnic identity:
Happiness, Social activity, Security, Health, and Ethnicity

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
happy	−0.013	−0.010	−0.025	0.044**	−0.017	0.004	−0.035*	0.011	0.078***		−0.032	
	(0.018)	(0.012)	(0.018)	(0.019)	(0.015)	(0.015)	(0.019)	(0.022)	(0.018)		(0.020)	
sclmeet	−0.031**	0.045***	−0.016	0.021	−0.009	−0.009	0.010	−0.033**	−0.012	0.015	−0.011	0.012
	(0.014)	(0.011)	(0.016)	(0.017)	(0.012)	(0.013)	(0.013)	(0.015)	(0.015)	(0.023)	(0.020)	(0.021)
sclact	−0.023	−0.051***	0.011	−0.022	0.038*	0.034	0.009	0.008	−0.032	0.008	−0.044	−0.046
	(0.019)	(0.017)	(0.029)	(0.023)	(0.020)	(0.024)	(0.019)	(0.021)	(0.026)	(0.040)	(0.031)	(0.034)
crmvct	0.176***	0.117***	0.131***	0.128***	0.056	0.045	0.047	0.118***	0.097**	0.249**		0.092
	(0.041)	(0.042)	(0.048)	(0.049)	(0.040)	(0.049)	(0.035)	(0.045)	(0.043)	(0.100)		(0.081)
aesfdrk	−0.080***	0.012	−0.073***	−0.067**		−0.027	0.024	0.042	−0.027	0.168***	0.021	0.030
	(0.029)	(0.020)	(0.027)	(0.030)		(0.025)	(0.028)	(0.030)	(0.030)	(0.046)	(0.040)	(0.048)
health	0.067**	0.019	0.020		0.047**	0.049*	0.078***	0.041	0.046*	0.058		−0.020
	(0.029)	(0.020)	(0.030)		(0.023)	(0.028)	(0.026)	(0.030)	(0.026)	(0.042)		(0.040)
hlthhmp	0.063	−0.045	0.037		−0.011	0.056	0.010	0.052	0.093*		−0.050	0.024
	(0.051)	(0.035)	(0.057)		(0.046)	(0.059)	(0.040)	(0.047)	(0.049)		(0.069)	(0.072)

Continued on next page

Table 14: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
brncntr	0.120	0.007	0.161	0.037	−0.101	0.079	0.141			−0.340		0.393***
	(0.095)	(0.077)	(0.108)	(0.090)	(0.077)	(0.085)	(0.127)			(0.296)		(0.129)
blgetmg	−0.143	−0.310***	−0.238*	−0.302***	−0.149*	0.030	0.098	−0.367***	−0.270**	−0.214	−0.162	0.062
	(0.127)	(0.090)	(0.130)	(0.110)	(0.086)	(0.176)	(0.149)	(0.126)	(0.107)	(0.154)	(0.159)	(0.197)
facntr	0.192**	0.195***	0.276***	0.197***	0.059	0.043	0.331**	0.313***	0.207**	−0.138	0.071	0.173
	(0.077)	(0.057)	(0.078)	(0.067)	(0.061)	(0.097)	(0.145)	(0.093)	(0.090)	(0.198)	(0.178)	(0.115)
mocntr	0.156**	0.047	0.075	−0.074		0.076	−0.114	0.066		0.395	0.081	0.033
	(0.077)	(0.062)	(0.085)	(0.063)		(0.093)	(0.142)	(0.084)		(0.258)	(0.181)	(0.122)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 14 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports a large range of variables measuring the respondents happiness (happy), social activity (sclmeet), if he/she believes he is more or less socially active than people his age (sclact), whether the respondent or a family member has been a victim to crime (crmvct), how safe the respondent feel walking alone after dark (aesfdrk), their subjective assessment of health (health), if they has been hampered by illness or similar (hlthhmp), if they are born in the country (brncntr), if they belong to a minority ethnic group (blgetmg), and if their father or mother is born in the country (facntr and mocntr, respectively). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 15: Subjective well-being, social exclusion, religion national and ethnic identity: Religion

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
rlgdgr	0.047***	0.054***	0.080***	0.035***	0.029***	0.040***	0.053***	0.025***	0.040***	0.069***	0.135***	0.086***
	(0.008)	(0.007)	(0.010)	(0.008)	(0.008)	(0.011)	(0.009)	(0.008)	(0.010)	(0.015)	(0.017)	(0.013)
rlgatnd	0.077***	0.043***	0.117***	0.001	0.009	0.043***	0.076***	0.098***	0.025	0.095***	0.150***	0.339***
	(0.017)	(0.014)	(0.022)	(0.018)	(0.015)	(0.016)	(0.019)	(0.016)	(0.020)	(0.031)	(0.031)	(0.028)
pray	−0.001	0.015*	0.015			0.022*	0.025***	0.026***	0.026**	0.013	0.032*	0.050***
	(0.011)	(0.009)	(0.014)			(0.011)	(0.010)	(0.010)	(0.012)	(0.020)	(0.018)	(0.018)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 15 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the religion variable group, measuring the respondent's religiosity (rlgdgr), religious attendance apart from funerals, weddings and other special occasions (rlgatnd), and how often the respondent prays (pray). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 16: Gender and Age

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
gender	0.245^{***}	0.167^{***}	0.104^{**}	0.328^{***}	0.030	0.014	-0.011	0.223^{***}	0.187^{***}	0.071	0.152^{***}	0.243^{***}
	(0.038)	(0.030)	(0.046)	(0.042)	(0.036)	(0.042)	(0.038)	(0.039)	(0.042)	(0.061)	(0.055)	(0.062)
age	0.0003	0.004^{***}	0.004	0.003^{**}	0.008^{***}	0.007^{***}	0.017^{***}	0.0002	0.007^{***}	-0.019^{***}	-0.005^{*}	-0.009^{***}
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 16 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports variables gender and age. The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 17: Socio-demographics: Education

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
eduisced1	0.170	-0.196^{**}	-0.205	0.096	-0.176	-0.645^{*}	0.348		-0.661^{***}			-0.430^{**}
	(0.160)	(0.089)	(0.141)	(0.083)	(0.229)	(0.371)	(0.218)		(0.099)			(0.200)
eduisced2	0.373^{**}	0.037	-0.039	0.131^{***}	-0.199	-0.635^{*}	0.747^{***}	0.079	-0.177^{***}	0.117	0.045	-0.461^{**}
	(0.152)	(0.048)	(0.136)	(0.047)	(0.172)	(0.365)	(0.216)	(0.078)	(0.062)	(0.105)	(0.108)	(0.195)
eduisced3	0.491^{***}	0.026	0.089		-0.012	-0.504	0.996^{***}	0.119	-0.004	0.031	-0.110	-0.622^{***}
	(0.148)	(0.035)	(0.137)		(0.172)	(0.363)	(0.217)	(0.079)	(0.050)	(0.105)	(0.112)	(0.192)
eduisced6	0.414^{***}		0.075	-0.079	-0.106	-0.499	1.221^{***}	0.017		-0.240^{**}	0.032	-0.643^{***}
	(0.151)		(0.144)	(0.073)	(0.174)	(0.365)	(0.219)	(0.084)		(0.122)	(0.131)	(0.202)
eduisced7	0.429^{***}	-0.024	-0.005	-0.116^{*}	-0.176	-0.474	1.220^{***}	-0.017	-0.186^{***}	-0.256^{*}	-0.120	-0.734^{***}
	(0.154)	(0.041)	(0.145)	(0.068)	(0.174)	(0.365)	(0.221)	(0.089)	(0.052)	(0.134)	(0.129)	(0.206)
eduisced8	0.503^{***}	-0.099^{*}	0.107	0.033	-0.216	-0.659^{*}	1.006^{***}	-0.089	-0.356^{***}	-0.164	-0.115	-0.716^{***}
	(0.168)	(0.051)	(0.160)	(0.109)	(0.179)	(0.368)	(0.224)	(0.094)	(0.078)	(0.173)	(0.187)	(0.242)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 17 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the education dummies as described in the data section. The variables follow the ISCED classification where a higher ISCED level means more education years. The standard errors are White (1980) heteroskedasticity robust standard errors.

Gender and age

In Table 16 we report the variables gender and age for all welfare regimes. Gender is only found significant in all countries in the conservative welfare regime. It further shows up as significant in some of the other countries, for example being significant in two countries in the social democratic and post-communist welfare regimes. When the variable is significant, it is always with a positive coefficient, indicating that men tend to associate more with the right than women.

Age is only found consistently significant in the liberal welfare regime, where it has a positive coefficient, indicating that older individuals tend to associate more with the political right. The same relationship is found in some countries in the conservative and social democratic welfare regime, but not consistently across all countries. In the post-communist welfare regime, the variable is significant in all countries, however only at the 10% level in Poland. Interestingly, the relationship here is the inverse of that in the other welfare regimes as age is negatively correlated with self-placement. This indicates that older individuals tend to associate more with the political left than younger.

Socio-demographics

Education is not found to show any clear patterns across the four welfare regimes in Table 17. In some countries, such as Belgium and Finland, more education seems to lead to more right self-placement. In Ireland, Norway, and Slovenia, the relationship seems to be the opposite, as more education is correlated with more left self-placement. The results are therefore very mixed and have to be interpreted in relationship to the base dummy. We will discuss this more in the discussion section.

The variables measuring domicile and trade union membership and their correlations can be seen in Table 18. Domicile indicates how close the respondent lives to a big city, with higher values indicating the respondent living closer to a big city. In most countries the variable is significant and negatively correlated with self-placement. However, the relationship is only consistent in the conservative welfare regime. In the liberal welfare regime, the variable is not significant in Ireland, and in the social democratic welfare regime, the variable has the opposite sign in Norway. The variable is also positive in Poland, indicating that respondents living closer to big cities tend to associate more with the right.

Table 18: Socio-demographics: Domicile and trade union membership

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
domicil	-0.042^{**}	-0.035^{***}	-0.081^{***}	-0.083^{***}	-0.085^{***}	-0.020	-0.042^{***}	-0.073^{***}	0.058^{***}		0.058^{***}	-0.030
	(0.016)	(0.012)	(0.018)	(0.020)	(0.018)	(0.014)	(0.013)	(0.014)	(0.014)		(0.022)	(0.025)
mbtru	-0.224^{***}	-0.376^{***}	-0.336^{***}	-0.335^{***}	-0.268^{***}	-0.126^{***}	-0.461^{***}	-0.270^{***}	-0.410^{***}	-0.206^{***}	-0.050	-0.085
	(0.036)	(0.028)	(0.054)	(0.044)	(0.033)	(0.038)	(0.039)	(0.037)	(0.041)	(0.068)	(0.066)	(0.063)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 18 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the variables measuring how close the respondent lives to a big city (domicil), and whether the respondent is or has previously been a member of a trade union or not (mbtru). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 19: Socio-demographics: Employment

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pdwrk	0.109^{*}	0.067^{*}	-0.244^{**}	0.048		-0.040	0.155^{***}	-0.035	0.064	0.115	0.075	-0.089
	(0.060)	(0.040)	(0.104)	(0.050)		(0.069)	(0.047)	(0.054)	(0.067)	(0.103)	(0.074)	(0.084)
edctn	-0.078	-0.173^{***}	-0.300^{**}	-0.247^{***}	-0.186^{**}	-0.119	-0.013	-0.207^{***}	-0.329^{***}	-0.365^{***}	0.098	-0.132
	(0.074)	(0.056)	(0.128)	(0.089)	(0.084)	(0.098)	(0.069)	(0.074)	(0.072)	(0.132)	(0.087)	(0.086)
uempla	-0.191^{*}		-0.316^{**}	-0.160	-0.048	-0.055	0.150		0.157	0.055	0.093	-0.177
	(0.114)		(0.141)	(0.187)	(0.105)	(0.098)	(0.092)		(0.136)	(0.170)	(0.123)	(0.145)
uempli	0.007	0.196^{*}	-0.343^{**}	0.263	0.206	-0.036	0.081	0.216	-0.417^{**}	0.207		
	(0.124)	(0.118)	(0.166)	(0.262)	(0.144)	(0.152)	(0.117)	(0.145)	(0.165)	(0.212)		
dsbld	0.082	0.106	-0.098	-0.109	-0.063	-0.065	0.252^{*}	-0.171^{*}	-0.109	0.406^{**}	-0.199	0.177
	(0.105)	(0.079)	(0.180)	(0.137)	(0.087)	(0.128)	(0.147)	(0.094)	(0.104)	(0.180)	(0.202)	(0.268)
rtrd	0.110	0.102^{*}	-0.282^{**}		0.034	-0.103		0.056	0.053	-0.201	-0.077	-0.183
	(0.078)	(0.055)	(0.122)		(0.054)	(0.083)		(0.069)	(0.089)	(0.137)	(0.108)	(0.119)
hswrk	0.052	0.096^{***}	-0.069		-0.039	-0.085	0.047	-0.019	0.034	-0.030	-0.025	-0.029
	(0.042)	(0.031)	(0.107)		(0.045)	(0.060)	(0.086)	(0.038)	(0.042)	(0.078)	(0.071)	(0.060)
uemp3m	-0.040	-0.097^{***}	-0.089^{**}	-0.130^{**}	-0.010	-0.142^{***}	-0.256^{***}	-0.089^{**}	0.054	0.008	0.040	0.063
	(0.042)	(0.030)	(0.045)	(0.056)	(0.039)	(0.045)	(0.035)	(0.044)	(0.045)	(0.069)	(0.056)	(0.062)
atncrse	0.081^{**}	0.036	0.168^{***}	-0.033		0.047	-0.021	-0.045	-0.050	-0.117		0.096
	(0.040)	(0.030)	(0.049)	(0.043)		(0.045)	(0.037)	(0.039)	(0.040)	(0.083)		(0.063)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 19 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the employment status variables. The first many variables relates to what the respondent has mainly been doing over the last seven days: paid work (pdwrk), undergoing education (edctn), being unemployed and actively looking for work (uempla), being unemployed and not actively looking for work (uempli), being disabled (dsbld), retired (rtrd), doing housework (hswrk). The last two variable measures whether the respondent has been unemployed for more than three months at any given point in his life (uemp3m) and whether the respondent has taken courses or attended conferences or similar to improve their knowledge/skills for work (atncrse). The standard errors are White (1980) heteroskedasticity robust standard errors.

Table 20: Human values

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Self-Direction:												
ipcrtiv	−0.008	0.016	0.046***	−0.029	0.031**	−0.035**	0.053***	−0.029	0.059***		−0.025	0.037
	(0.017)	(0.013)	(0.018)	(0.019)	(0.014)	(0.016)	(0.016)	(0.018)	(0.017)		(0.023)	(0.032)
impfree	0.083***	0.052***	0.040**	0.082***	0.027*	0.041**	0.038**	0.018	0.010	0.030		0.035
	(0.020)	(0.016)	(0.017)	(0.024)	(0.017)	(0.020)	(0.017)	(0.023)	(0.017)	(0.033)		(0.037)
Universalism:												
ipeqopt	−0.240***	−0.148***	−0.178***	−0.169***	−0.172***	−0.099***	−0.172***	−0.182***	−0.158***	−0.030	−0.056*	0.058
	(0.024)	(0.015)	(0.023)	(0.021)	(0.017)	(0.021)	(0.019)	(0.024)	(0.019)	(0.029)	(0.031)	(0.037)
ipudrst	−0.049**	−0.016	−0.025	−0.031	−0.005	−0.043**	−0.026	−0.046**		−0.029	−0.034	−0.037
	(0.023)	(0.017)	(0.023)	(0.024)	(0.019)	(0.021)	(0.021)	(0.023)		(0.030)	(0.029)	(0.034)
impenv	−0.058**	−0.092***	−0.061***	−0.250***	−0.045**	−0.034	−0.121***	−0.100***	−0.186***	0.028	−0.053	−0.080**
	(0.023)	(0.016)	(0.021)	(0.025)	(0.018)	(0.021)	(0.020)	(0.023)	(0.018)	(0.039)	(0.033)	(0.038)
Benevolence:												
iphlppl	−0.033	−0.032*	−0.030	−0.077***	−0.054***	0.015	−0.002	−0.060**	0.024	−0.055	−0.031	−0.079*
	(0.026)	(0.017)	(0.023)	(0.025)	(0.020)	(0.023)	(0.022)	(0.024)	(0.021)	(0.035)	(0.034)	(0.042)
iplylfr	0.105***	0.027	0.054**	0.113***		−0.008	0.053**	0.059**	0.129***	−0.025		−0.083**
	(0.030)	(0.022)	(0.025)	(0.031)		(0.024)	(0.023)	(0.026)	(0.024)	(0.039)		(0.036)
Tradition:												
ipmodst	−0.045**		−0.013	0.024		0.003	−0.012	−0.036**		−0.018		0.071*
	(0.019)		(0.020)	(0.018)		(0.017)	(0.015)	(0.016)		(0.030)		(0.036)
imptrad	0.039**	0.072***	0.025	0.133***	0.105***	0.023	0.114***	0.089***	0.070***	0.086***	0.137***	0.063**
	(0.017)	(0.012)	(0.017)	(0.017)	(0.013)	(0.018)	(0.015)	(0.017)	(0.016)	(0.029)	(0.031)	(0.027)
Conformity:												
ipfrule	0.021	0.003	−0.0002	0.017	0.022*	0.030*	0.054***	0.034**	0.015	−0.007		−0.020
	(0.015)	(0.011)	(0.017)	(0.015)	(0.014)	(0.016)	(0.015)	(0.018)	(0.018)	(0.023)		(0.022)
ipbhprp	−0.033*	−0.003	0.050***	0.030*	0.021	0.049**	0.047***	0.042**	0.033*	0.032	−0.070**	0.020
	(0.019)	(0.013)	(0.018)	(0.017)	(0.015)	(0.020)	(0.017)	(0.020)	(0.018)	(0.030)	(0.029)	(0.031)

Continued on next page

Table 20: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Security												
impsafe	0.056***	0.019	0.033*	0.014	−0.019	−0.012	0.021	−0.007	0.011		0.066**	0.012
	(0.019)	(0.013)	(0.018)	(0.018)	(0.015)	(0.020)	(0.017)	(0.018)	(0.016)		(0.028)	(0.032)
ipstrgv	0.122***	0.107***	0.127***	0.077***	0.142***	0.072***	−0.034**	0.158***	−0.054***	0.026		0.076**
	(0.019)	(0.013)	(0.018)	(0.019)	(0.016)	(0.019)	(0.015)	(0.019)	(0.017)	(0.030)		(0.032)
Power:												
imprich	0.084***	0.036***	0.097***	0.080***	0.097***	0.068***	0.130***	0.104***	0.235***	0.061**	0.050**	0.017
	(0.018)	(0.013)	(0.022)	(0.019)	(0.016)	(0.017)	(0.017)	(0.019)	(0.020)	(0.026)	(0.023)	(0.025)
iprspot	−0.013	−0.025**	−0.019	−0.051***	−0.036**	−0.023	0.007	−0.040**	−0.032*		0.021	−0.008
	(0.017)	(0.012)	(0.017)	(0.017)	(0.014)	(0.017)	(0.016)	(0.018)	(0.018)		(0.022)	(0.028)
Achievement:												
ipshabt	−0.038**	−0.006	0.034*	−0.034**	−0.026*	0.022	−0.099***	−0.058***	−0.072***		−0.029	−0.024
	(0.017)	(0.012)	(0.018)	(0.017)	(0.014)	(0.018)	(0.016)	(0.019)	(0.018)		(0.024)	(0.028)
ipsuces	−0.020	0.027**	−0.053***	0.019		0.015	0.055***	0.041**	0.039**	−0.091***	−0.060**	−0.010
	(0.018)	(0.013)	(0.020)	(0.018)		(0.018)	(0.018)	(0.020)	(0.019)	(0.029)	(0.028)	(0.032)
Hedonism:												
ipgdtim	−0.012	0.012	−0.044**	0.037	−0.015	−0.033*	0.007	−0.007	−0.016			−0.031
	(0.019)	(0.015)	(0.022)	(0.024)	(0.015)	(0.017)	(0.017)	(0.019)	(0.017)			(0.028)
impfun	0.047**	−0.020	−0.012	0.025	−0.037**	0.025	0.004	0.019		0.019	−0.027	0.009
	(0.020)	(0.013)	(0.019)	(0.018)	(0.016)	(0.018)	(0.018)	(0.021)		(0.032)	(0.021)	(0.029)
Stimulation:												
impdiff	0.004	−0.005		0.012	−0.007	0.038**	0.025	0.025	0.025	0.022		0.007
	(0.018)	(0.012)		(0.017)	(0.015)	(0.017)	(0.017)	(0.019)	(0.018)	(0.027)		(0.029)
ipadvnt	0.013	0.028**	0.042**		0.029*	−0.046***	0.015	0.039**	0.025	0.025		0.032
	(0.017)	(0.013)	(0.018)		(0.016)	(0.016)	(0.017)	(0.019)	(0.019)	(0.025)		(0.023)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 20 is a snippet of Table E2 in Appendix E reports the full results of the PWLS regressions for each country. This snippet reports the human value group. We refer to Table C1 in Appendix C for a full description of each variable if not given in the main text. The standard errors are White (1980) heteroskedasticity robust standard errors.

Further, being a member of a trade union is negatively correlated with self-placement in all welfare regimes except the post-communist. The dummy variable is significant at the 1% level in all countries in the conservative, liberal, and social democratic welfare regimes, indicating that members of trade unions tend to associate more with the political left. The coefficients are largest in Finland and Norway, two of the social democratic countries. In the post-communist welfare regime, the variable is only significant in Hungary, again with a negative coefficient.

The remaining variables in the socio-demographics group relate to the employment status of the respondent, and the results can be seen in Table 19. No variables are consistently significant across any welfare regime. However, the variable edctn, measuring whether the respondent is undergoing education, is significant and negative in seven countries. The variable is significant in two out of three countries in both the social democratic and liberal welfare regimes. This indicates that students tend to associate more with the political left.

Human values

Lastly, we cover the results of the human values variables, which can be found in Table 20. First, the human value self-direction is found to be significant and positively correlated with self-placement in the conservative welfare regime, but only in some countries in the other welfare regimes. In all welfare regimes except the post-communist, the value universalism is negatively correlated with self-placement, and often measured by two or three of the variables being significant. Of the post-communist countries, this relationship is only evident in Slovenia. The human value tradition is found to be significant and positively related to self-placement in all social democratic and post-communist countries, but only in some countries in the other welfare regimes. Security is significant and positively correlated with self-placement in the conservative and liberal welfare regimes, and in two out of three countries in the post-communist. In the social democratic countries, the relationship is negative for two countries. Power is positively correlated with self-placement in all countries except Slovenia, mainly measured by the imprich variable. In Germany, Switzerland, the Netherlands and Norway, the relationship is offset by the other power variable iprspot, which is negative and significant. However, the magnitude of the coefficient is smaller, and we therefore conclude that power is positively correlated with self-placement.

5.2.2 Robustness checks

In this subsection we describe the two robustness checks we performed to confirm the validity of our results. First, we describe the results of the lasso regression and second we describe the findings of using a party-based left-right scale as the dependent variable. Both robustness check regressions can be seen in Table E3 and Table E4 in Appendix E.

The lasso regression

The lasso in general removes more variables than the elastic net, the only exception being in the Netherlands, where the elastic net removes one more variable than the lasso. In Slovenia, the lasso removes ten more variables than the elastic net and seven more in France. Otherwise the remaining number of variables are very similar in the two regressions. The adjusted R2 in the two regressions are almost identical and only deviate on the third decimal. Using the lasso does not change our conclusions from the PWLS regressions using the elastic net.

The party-based left-right scale

The regression using the party-based left-right scale was performed as described in subsection 3.5. First, the average adjusted R^2 across the twelve countries in the PWLS regressions using the usual left-right scale as dependent variable is 22%. Using the party-based left-right scale the average adjusted R^2 is 23.9%. This gives an initial indication that the results of the two regressions are not far from each other. We will only describe the main differences using this approach and our findings in the previous subsection.

For political activity and satisfaction with society, the results are mostly the same as in the main regression. In Finland, political activity is now associated with the political right, and in Hungary political activity is associated with the left, where it previously was associated with the political right.

The relationships found for wealth redistribution are mostly the same, but the gincdif variable is no longer significant in Finland but is instead in Slovenia. The coefficient is always negative. Tolerance for homosexuality has become insignificant in the Netherlands, dropped by the lasso in Ireland and become positive and significant in Belgium, where it was previously insignificant.

Religion is no longer significant in Ireland but otherwise maintains importance across all countries. Domicile has become significant in Ireland and switched direction of coefficient in Norway. We first found it to be positive, and using the new dependent variable, the coefficient is negative in line with most other countries.

The human value power, measured by the imprich variable, becomes insignificant in France, the Netherlands and Norway. The universalism variable ipeqopt is no longer significant in the Netherlands.

Summary

Despite these differences in using the lasso and the party-based left-right scale, the results are in line with what we previously found, and our results seem fairly robust. These findings further indicate that even though the correlation between self-placement and the political left-right position of the party the individual voted for was rather low (56%), the direction of the coefficients in the regressions were largely the same.

5.3 Structural changes over time

As we discussed in the method section, we will now look at the most important variables as defined in subsection 5.2 and interpret how they have evolved over time. When doing so, we have created interaction variables for all round dummies and the most important variables. We then look at whether the interaction variable in round nine is significant. Finding a significant variable would indicate that the variable's coefficient has changed compared to round one. In doing so we need to compare to the PWLS regressions in subsection 5.2 to find the coefficients' directions – if we find a significant interaction variable in round nine with a negative sign, and the sign was negative in the PWLS in subsection 5.2, we interpret this as an increase in importance over time. On the other hand, a positive coefficient in the PWLS regression and a negative coefficient in the round nine interaction variable would indicate that the variables are becoming less important.

The most important variables or variable groups that we found in subsection 5.2 were political activism, satisfaction with society, immigration, wealth redistribution and tolerance for homosexuality in the politics groups. We further found religion, trade union membership and the human values power and universalism to be important. All these variables were significant in at least ten countries. For each variable group we have only included one variable, which was chosen to be the one variable significant in most countries in the PWLS regressions in subsection 5.2. Table 21 shows the coefficients and their significance in round one and round nine, and in the notes we have described which variables measure what category. The full regression results including all round interactions can be found in Table E5. We will only describe the most interesting findings over time in this subsection.

For the political activity group, the only evolution from round one to round nine is found in Great Britain, Ireland, and Hungary. In Great Britain, political activism seems to have increased in importance since round one, whereas in Ireland it seems to have decreased. The variable group was in general positively correlated with self-placement in Hungary. The coefficient in round one is positive and in round nine it is negative. This could indicate that the country is becoming more like the other three welfare regimes, where political activism in general is correlated with left self-placement.

In most countries, we found satisfaction with society to be correlated with right self-placement. Only in Great Britain and Hungary the round nine interaction variable is significant and positive, indicating that the issue is becoming more important in these countries compared to round one.

On immigration, the coefficients were mostly negative in the PWLS regressions. In Belgium, France and Poland, this relationship seems to have become more important over time, as the interactions in round nine are negative and significant. It is interesting that the relationship is becoming more important in one of the post-communist countries, as the relationship seemed weaker in those countries in subsection 5.2. This indicates some convergence of these countries towards the others.

Table 21: Structural changes over time

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Politics:												
Interest in politics and political activism:												
Round 1	−0.124	−0.451***	−0.674***	−0.223	0.235	−0.830***	−0.667*	−0.197	−0.789***	1.473***		0.208
	(0.217)	(0.126)	(0.219)	(0.202)	(0.230)	(0.184)	(0.399)	(0.242)	(0.160)	(0.373)		(0.350)
Round 9	−0.152	0.225	0.321	−0.037	−0.700**	0.526**	−0.447	0.211	0.011	−1.864***		−0.571
	(0.309)	(0.190)	(0.271)	(0.304)	(0.304)	(0.254)	(0.468)	(0.390)	(0.239)	(0.613)		(0.477)
Satisfaction with society:												
Round 1	0.015	0.054***	0.033	0.050	0.020	−0.012	0.123***	0.047	0.055*	−0.028	0.064*	0.046
	(0.037)	(0.021)	(0.039)	(0.037)	(0.034)	(0.041)	(0.033)	(0.039)	(0.031)	(0.040)	(0.033)	(0.038)
Round 9	0.054	−0.012	−0.005	−0.015	0.088**	0.058	−0.065	0.036	−0.011	0.155***	0.085	0.003
	(0.051)	(0.031)	(0.048)	(0.054)	(0.043)	(0.048)	(0.046)	(0.053)	(0.049)	(0.057)	(0.053)	(0.057)
Immigration:												
Round 1	−0.112	−0.295***	0.217	−0.131	−0.067	−0.109	−0.051	−0.175**	−0.037	−0.237*	0.051	0.025
	(0.077)	(0.062)	(0.136)	(0.087)	(0.078)	(0.093)	(0.076)	(0.078)	(0.078)	(0.139)	(0.112)	(0.115)
Round 9	−0.298***	0.038	−0.503***	−0.076	0.019	0.027	−0.057	−0.002	−0.193*	0.044	−0.336**	−0.263*
	(0.105)	(0.082)	(0.147)	(0.113)	(0.096)	(0.105)	(0.100)	(0.097)	(0.113)	(0.168)	(0.150)	(0.156)
Wealth redistribution:												
Round 1	−0.176***	−0.184***	−0.402***	−0.264***	−0.273***	−0.131**	−0.322***	−0.329***	−0.458***	−0.154	−0.276***	0.019
	(0.058)	(0.038)	(0.080)	(0.050)	(0.053)	(0.065)	(0.048)	(0.043)	(0.050)	(0.096)	(0.078)	(0.094)
Round 9	−0.090	0.041	0.106	−0.053	0.011	0.052	−0.229***	−0.116*	−0.379***	−0.324**	0.329***	−0.235*
	(0.082)	(0.056)	(0.097)	(0.076)	(0.081)	(0.083)	(0.073)	(0.066)	(0.086)	(0.139)	(0.121)	(0.126)
Tolerance for homosexuals:												
Round 1	−0.099	−0.115***	−0.208***	−0.261***	−0.035	−0.090	−0.123***	−0.176***	−0.072	−0.008	−0.140*	−0.153**
	(0.065)	(0.042)	(0.074)	(0.058)	(0.059)	(0.079)	(0.042)	(0.064)	(0.048)	(0.078)	(0.072)	(0.076)
Round 9	0.138	0.123*	0.181	0.138	−0.102	−0.001	−0.056	0.081	0.059	−0.229**	−0.196*	0.084
	(0.097)	(0.070)	(0.121)	(0.099)	(0.090)	(0.102)	(0.076)	(0.097)	(0.111)	(0.109)	(0.103)	(0.123)

Continued on next page

Table 21: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Subjective well-being, social exclusion, religion national and ethnic identity												
Religion:												
Round 1	0.115***	0.040***	0.095***	0.058***	0.043**	0.035	0.044*	0.028	0.023	0.113***	0.112***	0.066**
	(0.022)	(0.015)	(0.032)	(0.022)	(0.020)	(0.029)	(0.023)	(0.018)	(0.019)	(0.033)	(0.035)	(0.028)
Round 9	−0.078***	0.002	−0.041	−0.061**	−0.045*	0.016	−0.014	−0.007	0.010	−0.082**	0.046	0.008
	(0.028)	(0.020)	(0.036)	(0.029)	(0.026)	(0.033)	(0.029)	(0.024)	(0.028)	(0.042)	(0.048)	(0.036)
Socio-demographics												
Trade union membership:												
Round 1	−0.166	−0.323***	−0.515***	−0.206*	−0.232**	−0.119	−0.598***	−0.281***	−0.324***	−0.076	−0.161	−0.119
	(0.115)	(0.082)	(0.187)	(0.119)	(0.099)	(0.116)	(0.107)	(0.095)	(0.102)	(0.175)	(0.164)	(0.148)
Round 9	−0.043	0.008	0.270	−0.200	−0.130	−0.017	0.034	0.045	0.007	0.211	0.309	0.023
	(0.151)	(0.116)	(0.235)	(0.181)	(0.136)	(0.154)	(0.156)	(0.140)	(0.169)	(0.240)	(0.272)	(0.210)
Human values												
Universalism:												
Round 1	−0.366***	−0.133***	−0.144*	−0.156***	−0.115**	−0.155**	−0.257***	−0.165***	−0.148***	−0.088	0.028	0.006
	(0.077)	(0.039)	(0.074)	(0.059)	(0.046)	(0.063)	(0.058)	(0.054)	(0.045)	(0.072)	(0.081)	(0.078)
Round 9	0.169*	−0.123**	−0.074	0.049	−0.121*	0.093	0.156**	0.028	−0.038	0.107	−0.072	0.358***
	(0.101)	(0.059)	(0.091)	(0.081)	(0.063)	(0.080)	(0.079)	(0.081)	(0.073)	(0.097)	(0.118)	(0.137)
Power:												
Round 1	0.097*	−0.027	0.130*	0.075	0.082*	0.082*	0.089**	0.071*	0.206***	0.149**	0.017	0.109*
	(0.055)	(0.035)	(0.071)	(0.048)	(0.045)	(0.045)	(0.044)	(0.043)	(0.044)	(0.068)	(0.058)	(0.060)
Round 9	−0.033	0.099*	−0.036	0.002	0.051	0.013	0.082	0.097	−0.019	−0.235**	0.076	−0.118
	(0.075)	(0.051)	(0.089)	(0.071)	(0.069)	(0.060)	(0.065)	(0.063)	(0.074)	(0.094)	(0.087)	(0.092)

*p<0.1; **p<0.05; ***p<0.01

Note: Table 21 reports the round nine dummy variable interacted with the most important variables identified in subsection 5.2. Interest in politics and political activity is measured by the variable pbldmn (whether the respondent has participated in a demonstration), satisfaction with society is measured by stflife (satisfaction with life), immigration is measured by imdfetn (believes the country should accept more immigrants from other ethnicities than the majority in the country), wealth redistribution is measured by gincdif, tolerance for homosexuality is measured by freehms, religion is measured by the variable rlgdgr (religiosity), trade union membership is measured by mbtru, the human value universalism is measured by the variable ipeqopt (believing people should have equal opportunities), and the human value power is measured by the variable imprich (it is important to be rich). The standard errors are White (1980) heteroskedasticity robust standard errors. The full regression results including all interaction variables can be found in Table E5

Wealth redistribution is negative and significant in most countries in round one, and only a few of the round nine interaction variables are significant. This is the case in Finland, Norway and Hungary, where the coefficients are negative, indicating that the topic of wealth redistribution has become more important in the later rounds. In Poland the coefficient is positive, indicating that the topic matters less in round nine.

The last variable in the politics group is tolerance for homosexuality, which does not show any time patterns. The only exception is Hungary, where the topic has increased in importance over time, indicated by the negative coefficient.

Religion was found to be positively correlated with self-placement in most countries. In Belgium, Switzerland and Hungary the relationship seems to have become less important, based on the negative coefficients on the round nine dummies.

Trade union membership does not show any time patterns from round one to round nine and therefore seems to be stable across time.

Lastly, for the human values, universalism seems to have increased in importance in Germany and decreased in importance in Finland. The variable was not significant in the PWLS regression for Slovenia, and the positive coefficient for the round nine interaction indicates that the variable is actually becoming correlated with the political right in the latter rounds, which is the opposite of the findings in most other countries. Lastly, the human value power only shows time tendencies in Hungary, where it switches coefficient from being positively correlated to being negatively correlated with self-placement.

5.4 Sub conclusion

We will now give a summary of the most important findings outlined in the subsections above. We will compare the findings of the WFE regression, the PWLS regressions and the structural changes over time. This section is divided in the usual variable groupings. In Table 27 we have included an overview of our findings and stated whether the variables were found to be significant and the direction of the coefficients.

Media and social trust

In the social democratic countries we found social trust to be negatively correlated with self-placement. We did not find these relationships for the other welfare regimes or in the WFE regression. Except for the social democratic countries, this was in line with our expectations, as we did not expect to find any clear relationship. We did not look into this variable's evolution over time, due to its low significance in the previous regressions.

Politics

In the WFE regression, we only found one variable, sgnptit, measuring whether the individual has signed a petition in the last twelve months, to be significant and correlated with the political left. In the conservative, liberal, and social democratic countries, almost all the variables measuring some aspect of political activity were significant and with negative coefficients. The relationship is not evident in the post-communist countries. There is only a slight indication of political activity being positively correlated with self-placement in Poland and Hungary. In Hungary, the relationship seems to have switched direction in later rounds, and political activity seems to be more correlated with left self-placement than previously. The WFE regression seems to capture the tendencies in the three first mentioned welfare regimes. We did not expect to find any relationships for these variables, as we did not identify previous literature on the topic. It is therefore interesting that the findings are this uniform across the conservative, liberal, and social democratic welfare regimes.

Trust in institutions generally showed mixed correlations with self-placement across welfare regimes and variables. We did not find any clear patterns within any of the welfare regimes. The picture is generally blurred as the variables often have coefficients of opposite direction. This is therefore in conflict with the findings of Devos et al. (2002) and our expectations of trust in institutions being correlated with the right.

We found that being satisfied with society was associated with right self-placement in the WFE regression. This was however only for one variable. We also found this relationship in every country in the PWLS regressions, but the relationship was weaker in the post-communist countries. However, in

Hungary the relationship seems to become more important over time. This could indicate that Hungary is converging towards the tendencies in the other countries. It also shows that in general being satisfied with society is a strong predictor of political right self-placement. This is contrasting to our expectations since we, based on the findings of Radcliff (2001) expected that satisfaction with society would depend on national factors and vary across countries without being correlated with any political wings.

In the WFE regression, one immigration variable was found significant. Further, when splitting the regressions on a per country level, being positive towards immigration from other ethnicities than the majority is negatively correlated with self-placement in all welfare regimes. Interestingly, immigration is either constant or increasing in importance. It seems that immigration is an important topic in dividing the political spectrum across all twelve countries. There further seems to be an important distinction between the variable imsmetn and the other immigration variables. Imsmetn measures whether the respondent believes immigrants from the same ethnic race as the majority in the country should be allowed in and is often associated with right self-placement. These results are in line with our expectations and Thränhardt (1995), since we found that left-wing voters are generally pro-immigration.

Gincdif, measuring attitudes towards wealth redistribution, was significant in the WFE regression and all countries except Poland and Slovenia in the PWLS regressions and always with a negative coefficient. Gincdif is either constant or increasing in importance. Expect for Poland and Slovenia, these findings are in line with our expectations of a negative relationship, which we based on the findings of Knutsen (1995b). The findings further provide evidence for the pluralization theory, stating that new values get added to the old instead of replacing them. Further, the findings are conflicting with the transformation theory, which predicts that old materialist left-right semantics are getting replaced by post-materialist values on the left and materialist values on the right. Finally, we expected the relationship to increase in importance due to the increasing income gap documented across many western countries (Brady & Leicht, 2005). The importance was increasing in two countries, and the findings are therefore not completely in line with our expectations.

Further, freehms, measuring tolerance for homosexuality, was significant in the WFE regression and correlated with left self-placement. The variable was significant in all countries but Belgium in the PWLS regressions. This makes intuitive sense as the variable is a measure of tolerance for homosexuality, a value which is often associated with more progressive left-wing parties. It is however strange that this relationship is not found in Belgium. The variable is either constantly important or increasing in importance over time. This is partly in line with our expectations since we expected the variable to be associated with the left wing and in line with Reynolds (2013), who argues that being against equal rights has typically been a right wing value. This gives some indication that the equal rights values are still important today, conflicting with the results of Reynolds (2013), who found that the value become less salient over time as these values becomes the norm.

Subjective well-being, social exclusion, religion, national and ethnic identity

For the happiness, social activity, security, health, and ethnicity variable groups we found no clear patterns. This is in line with our expectations for social activity, security, and health, but conflicting with our expectations for happiness and ethnicity, where we expected voters to associate with the right and left wing, respectively.

In the WFE regression, we found that religion was strongly correlated with the right wing. Religion was significant in all countries after splitting the data per country. Religion has lost importance over the rounds in Belgium, Switzerland, and Hungary. However, religion must be said to have a strong correlation with the political right across all countries and welfare regimes. This is in line with our expectations and the previously mentioned findings by the Pew Research Center (Doherty et al., 2016), which finds that Republicans in the US tend to be more religious than Democrats. We further expected the importance of religion to decrease over time (as found in Knutsen (1995b)), which was only the case in three countries, indicating the variables' consistent importance. The persistence of religion in the remaining nine countries is in line with Knutsen (2017).

Gender and age

Gender was strongly correlated with the right wing in the WFE regression and significant in many countries in the PWLS regressions – the relationship held in all conservative, one liberal country and two countries in both the social democratic and post-communist groups. For these countries, our findings are in line with our expectations and the Pew Research Center report (Doherty et al., 2016). However, it seems that gender is not a universally important variable.

We further found a relationship between age and right self-placement in some of the countries but not for specific regimes, indicating that the variables' importance is country specific. Age was removed from the WFE regression. Since the post-communist countries had the opposite effect for age, this is possibly averaged out in the weighted FE regression. These findings are in contrast to our expectations since we expected a positive correlation between age and self-placement.

Socio demographics

Three education dummies were significant in the WFE regression; ISCED 2, 6 and 7. In the regressions split per country, we did not find any clear patterns for education in any welfare regimes. In Belgium and Finland, it seemed that higher education levels are associated with the right wing compared to the base dummy. In Finland, the last two dummies for education have smaller coefficients than the previous, indicating that education predicts right self-placement up to a given level and after that it decreases again. In Norway and Slovenia, most education dummies are significant but with negative coefficients. There does in general not seem to be any clear patterns for education, and only in certain countries does it seem to matter. Further, there were no interesting findings across time. We did not expect any clear correlations for education and self-placement, which indeed seems to be the case. This is possibly due to the nature of the dummy variables or our linear econometric approach, which we will describe in more detail in the discussion section.

Domicile was not significant in the WFE regressions. In all welfare regimes except the post-communist countries, Norway, and Ireland, the variable was found to be negatively correlated with self-placement. Therefore, for most countries, our findings are in line with our expectations and the findings of Chen and Rodden (2013).

We found some correlation between undergoing education and left self-placement, however only in a few countries. In the WFE we found that individuals who attend courses or conferences or similar to improve their skills for work tend to associate with the left, but we did not find this in the PWLS regression. For the remaining variables in this group we did not find any consistent relationships which is in line with our expectations of no correlations in this group.

Interestingly, being a member of a trade union was significant and correlated with the left in ten of twelve countries (only excluding Poland and Slovenia) but insignificant in the WFE regression. The variable is consistent over time in all countries. This is in line with our expectations and the literature, which indicates that old politics values and class structure still play a large role in defining the left and right in politics (Inglehart and Baker, 2000; Knutsen, 1995b, 2017).

Human values

In the WFE regression, we found universalism to be correlated with the left and tradition to be correlated with the right. When we split the regression on the per country level, we found that universalism was correlated with the left in all welfare regimes except the post-communist. This relationship was stable when we tested it across time, however seemingly increasing in importance in Germany and decreasing in importance in Finland. Tradition was correlated with the right in the social democratic and post-communist welfare regimes and in a few countries in the conservative and liberal welfare regimes. We did not test this relationship over time.

Despite not being significant in the WFE regression, the human value power was significant in eleven out of twelve countries only excluding Slovenia. This relationship was stable in most countries, with the only exception being Hungary, where the relationship seems to matter less in the later rounds.

Further, the security human value was found significant and positively correlated with self-placement in the conservative and liberal countries but was insignificant in the WFE regression. Lastly, self-direction was found positive in all conservative countries, but the relationship was not found in other welfare regimes or the WFE regression. We did not test these relationships over time.

For the conservative, liberal, and social democratic countries the results are somewhat aligned with our expectations and Piurko et al. (2011), since we expected universalism to be negatively correlated with self-placement and power and tradition to be positively correlated with self-placement. However, we did not find evidence for benevolence, conformity, and security human values as the authors find. For the post-communist countries our results are almost in line with our expectations. The only difference was the tradition value, which we found significant in all three countries in the PWLS regressions.

In Piurko et al. (2011) the authors define both Ireland and Poland as traditional countries and find that tradition and conformity human values are correlated with right self-placement and that universalism and benevolence are correlated with the left. For these two countries, we find the human values power and security to be correlated with right self-placement. Our findings are therefore conflicting with the authors. However, it seems that Poland resembles Ireland more than Slovenia despite being categorized in the same welfare regime.

The brief outline of the findings on the human values above highlights some interesting findings. First, the WFE seems to have captured the broader tendencies in the conservative, liberal, and social democratic countries. However, tradition was significant in the WFE, something that we only found in the social democratic and post-communist countries. When looking at each country by itself, we found again that the three first mentioned welfare regimes share the universalism and power values as defining the two ends of the spectrum. However, there still exists some differences across the welfare regimes, which outlines the necessity to split them in smaller groups than done in e.g. Piurko et al. (2011).

5.4.1 Summary

We have now described the findings across the four welfare regimes and compared the similarities and highlighted the differences. We will use this summary to give a better overview of the similarities across all welfare regimes, and the most important variables in each. We start by discussing the findings of the WFE regression followed by the findings in the PWLS regressions.

The findings of the WFE regression are summarized in Figure 4. A variable or variable group indicated on the left in the figure indicates a negative coefficient in the regression. Therefore, individuals who associate more with these values tend to place themselves further to the left.

Figure 4: Variable correlations with self-placement in the WFE regression

More politically active	
Higher trust in institutions	
Being pro-immigration	
Believes in greater wealth redistrubution	Being satisfied with society
More socially active	Being religious
Is attending workshops etc.	Is male (gender)
Shares the human value universalism	Shares the human value tradition

Left ⟵⟶ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the WFE regression across all twelve countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

The conservative welfare regime

We found a range of variables to be related with either the left or the right end of the political spectrum in the conservative countries, and they can best be illustrated as in Figure 5. In total, eleven variables were significant in explaining the individuals' self-placement, with five having significant negative coefficients and six having significant and positive coefficients.

Figure 5: Variable correlations with self-placement in the conservative countries

	Being satisfied with society
More politically active	Being religious
Being pro-immigration	Is male (gender)
Believes in greater wealth redistrubution	Shares the human value security
Is a member of trade union	Shares the human value self-direction
Shares the human value universalism	Shares the human value power

Left ⟵⟶ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in the conservative countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

The liberal welfare regime

We have illustrated the main findings in the liberal welfare regime in the same manner as for the conservative countries, and they can be seen in Figure 6. Again, eleven variables help define the political spectrum, with many overlaps to the conservative welfare regime.

Figure 6: Variable correlations with self-placement in the liberal countries

Left	Right
More politically active	
Being pro-immigration	Being satisfied with society
Believes in greater wealth redistrubution	Being religious
Higher tolerance for homosexuality	Age
Is a member of trade union	Shares the human value security
Shares the human value universalism	Shares the human value power

Left ⟵⟶ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in the liberal countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

The social democratic welfare regime

Again, we refer to Figure 7 for an overview of the findings. This time ten variables are defining the political spectrum. The variables correlated with left self-placement are identical to those of the liberal welfare regime, which in turn are almost identical to those of the conservative. With a few exceptions, the values correlated with right self-placement are also very similar across the three welfare regimes.

Figure 7: Variable correlations with self-placement in the social democratic countries

Left	Right
More politically active	
Being pro-immigration	
Believes in greater wealth redistrubution	Being satisfied with society
Is a member of trade union	Being religious
Higher tolerance for homosexuality	Shares the human value tradition
Shares the human value universalism	Shares the human value power

Left ⟵⟶ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in the social democratic countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

The post-communist welfare regime

The few variables defining the political spectrum in the post-communist countries can be found in Figure 8. Only four variables or variable groups were significant in all three countries while having the same direction of coefficients. The few variables that the countries have in common highlight both the differences between this welfare regime and the other three, and the heterogeneity within the welfare regime. We will discuss this in more detail later.

Figure 8: Variable correlations with self-placement in the post-communist countries

Left	Right
Being pro-immigration Higher tolerance for homosexuality	Being satisfied with society Being religious

Left $\longleftrightarrow$ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in the post-communist countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

Generalities

First, the adjusted average R^2 was found to be highest in the social democratic countries. We found the adjusted average R^2 to be 0.213, 0.223, 0.28, and 0.167 in conservative, liberal, social democratic, and post-communist countries, respectively. This could indicate that the left-right scale is better defined in the social democratic countries, and that the scale has a clearer definition in the mind of the public. Opposite, the average adjusted R^2 is the lowest in the post-communist countries, indicating that the political left and right is not well defined.

Looking at the variables or variable groups that were similar across all the welfare regimes, we find that being positive towards immigration, is the only variable correlated with left self-placement. On the other hand, being satisfied with society and being religious were the only variable groups correlated with right self-placement. We have illustrated this in Figure 9. It is interesting that so few variables are found significant across all countries, and we will discuss this in more detail in the discussion section later.

Figure 9: Variable correlations with self-placement in all twelve countries

Left	Right
Being positive towards immigration	Being satisfied with society Being religious

Left $\longleftrightarrow$ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in all twelve countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

Table 27: Variable significance and direction of coefficients

	Social trust	Political activity	Statisfaction with society	Immigration	Gincdif	Freehms	Religion	Gender
Weighted FE	✗	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
Conservative:								
Belgium	✓(+)	✓(-)	✓(+)	✓(-)	✓(-)	✗	✓(+)	✓(+)
Germany	✗	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
France	✗	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
Liberal:								
Switzerland	✓(-)	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
Great Britain	✗	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✗
Ireland	✗	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✗
Social democratic:								
Finland	✓(-)	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✗
Netherlands	✓(-)	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
Norway	✓(-)	✓(-)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✓(+)
Post-communist:								
Hungary	✗	✓(+)	✓(+)	✓(-)	✓(-)	✓(-)	✓(+)	✗
Poland	✗	✓(+)	✓(+)	✓(-)	✗	✓(-)	✓(+)	✓(+)
Slovenia	✗	✗	✓(+)	✓(-)	✗	✓(-)	✓(+)	✓(+)

Continued on next page

Table 27: – continued from previous page

	Age	Domicile	Trade union membership	Self-direction	Universalism	Tradition	Security	Power
Weighted FE	✗	✗	✗	✗	✓(-)	✓(+)	✗	✗
Conservative:								
Belgium	✗	✓(-)	✓(-)	✓(+)	✓(-)	✗	✓(+)	✓(+)
Germany	✓(+)	✓(-)	✓(-)	✓(+)	✓(-)	✓(+)	✓(+)	✓(+)
France	✗	✓(-)	✓(-)	✓(+)	✓(-)	✗	✓(+)	✓(+)
Liberal:								
Switzerland	✓(+)	✓(-)	✓(-)	✓(+)	✓(-)	✓(+)	✓(+)	✓(+)
Great Britain	✓(+)	✓(-)	✓(-)	✓(+)	✓(-)	✓(+)	✓(+)	✓(+)
Ireland	✓(+)	✗	✓(-)	✗	✓(-)	✗	✓(+)	✓(+)
Social democratic:								
Finland	✓(+)	✓(-)	✓(-)	✓(+)	✓(-)	✓(+)	✓(-)	✓(+)
Nethersland	✗	✓(-)	✓(-)	✗	✓(-)	✓(+)	✓(+)	✓(+)
Norway	✓(+)	✓(+)	✓(-)	✓(+)	✓(-)	✓(+)	✓(-)	✓(+)
Post-communist:								
Hungary	✓(-)	✗	✓(-)	✗	✗	✓(+)	✗	✓(+)
Poland	✗	✓(+)	✗	✗	✗	✓(+)	✓(+)	✓(+)
Slovenia	✓(-)	✗	✗	✗	✓(-)	✓(+)	✓(+)	✗

Note: Table 27 reports the variables and variable groups and whether they were found significant or insignificant and the direction of the coefficient, if the variable was significant. We have only included the variables that were significant in at least all three countries in a welfare regime. The variables highlighted in grey are significant in all three countries in a given welfare regime. A check mark indicates significance at the 5% level or higher and a cross indicates insignificance. A plus sign in paranthese indicates positive correlation and a minus sign indicates negative correlation with self-placement.

6 Discussion

In the following section we will discuss the main results and implications of our study and what economic consequences it might have. We will then discuss the main limitations to our study and end by a range of suggestions for future research.

6.1 Implications

First, our study has shown that across twelve European countries, some with very different historical backgrounds and characteristics today, there exist some general variables that define the political spectrum. We ended the previous section by describing the three variables defining the political left and right scale in all twelve countries (Figure 9). We found that being positive towards immigration from other ethnicities than the majority in the country is negatively correlated with self-placement in all country specific regressions and the WFE regression. On the other hand, in the WFE regression and in all country specific PWLS regressions, we found that religion and the satisfaction with society variables were significant and positively correlated with right placement. If we slack on these restrictions and include all variables that were significant in at least eleven (rather than twelve) countries, we get the picture shown in Figure 10. In this case, we find that having higher tolerance for homosexuality was significant and correlated with left self-placement in the WFE regression and all countries except Belgium. Further, the human value power was significant and positive in all countries except Slovenia but was not significant in the WFE regression.

Figure 10: The broader tendencies in variable correlations with the left-right scale

Left	Right
Being pro-immigration	Being satisfied with society
Higher tolerance for homosexuality	Being religious
	Shares the human value power

Left ⟵⟶ Right

Note: The values included on the left are the ones found significant with negative coefficients and vice versa. These variables are all significant at the 5% level or higher in the PWLS regressions and share the same direction of coefficients in at least eleven countries. Having higher tolerance towards homosexuals was not significant in Belgium, and the power human value was not significant in Slovenia and the WFE regression. The remaining variables were significant in all countries and the WFE regression.

Further, we find that the post-communist countries are very different both compared to the other welfare regimes, but also compared to each other, similar to the findings in the literature (Castles and Obinger, 2008; Fenger, 2007). For example, where the variables on wealth redistribution, trade union membership, the political activity group, and the human value universalism have the same direction of the coefficient and is significant in all the other welfare regimes, this is not the case in the post-communist countries. Further, it is only rarely that the three post-communist countries share the same significant variables and especially Slovenia stands out. These findings could potentially mean two different things. First, they could indicate that the post-communist countries, despite sharing a history of communism, are not at all that similar when it comes to politics and defining different ends of the political spectrum, as found by Fenger (2007). Second, these findings could underline the findings of Piurko et al. (2011), as they indicate that the political spectrum in the post-communist countries is not yet defined, and therefore random variables show up as significant. As discussed in Piurko et al. (2011), the swift opening of the post-communist countries to the west has been found to have triggered a rise of strong traditional and right-wing nationalist and religious sentiments. On the other hand, being conservative, often associated with right self-placement, can mean preserving previous systems. If these systems include the communist, this conservativism would, paradoxically, be associated with left self-placement. This makes the left-right scale arbitrary, which could result in the low adjusted R^2 in the post-communist countries and be the reason why so few variables are significant across all three post-communist countries. An interesting example of this in our data is the age variable, which was found significant and negatively correlated with self-placement in Hungary and Slovenia. In all other countries where the variable was significant, it was positively correlated with self-placement. This could indicate that older people have a preference for preserving the society they are used to. Under this assumption, the direction of the coefficient of age in Hungary and Slovenia indicates that older people would prefer the old systems of communism and therefore place themselves further towards the left.

Due to the differences between the post-communist welfare regime and the others, we compared the values of the three other welfare regimes. Figure 11 shows the values defining the political spectrum across the conservative, liberal, and social democratic welfare regimes. If we compare Figure 8 to Figure 11, it is striking that when including the post-communist countries, only three values are shared across all welfare regimes, but when excluding these countries eight variables are shared across all countries in the three welfare regimes. Interestingly, the variables that differentiate the three other welfare regimes from the post-communist in Figure 11 are almost all associated with left self-placement. These variables are wealth redistribution, trade union membership, the political activity group, and the human value universalism. The values associated with right self-placement that the conservative, liberal and social democratic welfare regime have in common are also shared by the post-communist welfare regime except for the human value power.

Figure 11: The broader tendencies in variable correlations with the left-right scale excluding the post-communist countries

More politically active	
Being pro-immigration	
Believes in greater wealth redistrubution	Being satisfied with society
Is a member of trade union	Being religious
Shares the human value universalism	Shares the human value power

Left ⟷ Right

Note: The variables or variable groups included here are the ones found significant at the 5% level or higher in the PWLS regressions in the PWLS regression in all welfare regimes excluding the post-communist countries. The values included on the left are the ones found significant with negative coefficients and vice versa.

Despite the similarities between the conservative, liberal, and social democratic welfare regimes, there exist some differences between them. The conservative welfare regime was the only regime where gender and the human value self-direction were found significant (and both positive) in all three countries. The liberal welfare regime was the only one where age was significant (and positive) in all three countries, and the social democratic welfare regime was the only one where the human value tradition was significant in all three countries. Further, the conservative and liberal welfare regimes share the human value security being correlated with the right, and the liberal and social democratic welfare regimes share tolerance for homosexuality being correlated with the left. Interestingly, the social democratic and conservative welfare regimes do not share any correlations, that are not simultaneously shared by the liberal welfare regime. This could indicate that the social democratic and conservative welfare regimes are more different from each other than they are compared to the liberal welfare regime. For a clearer picture of the differences between these countries, we refer to the figures in subsection 5.4.

We further looked into the most important variables' evolutions over time. First, we find that most of the variables showed stable relationships over time. Political activism, satisfaction with society, tolerance for homosexuality, trade union membership and the human values universalism and power all showed stable relationships over time, with only a few exceptions across the countries. However, the variable measuring views on wealth redistribution actually increased in importance in all social democratic and post-communist countries (the round nine interaction variable was only significant at the 10% level in the Netherlands and Slovenia). These findings contrast the irrelevance theory, stating that old left-right semantics are becoming increasingly irrelevant. Further, the transformation theory suggested that the political conflicts were shifting and increasingly becoming between materialist values on the right and post-materialist values on the left, which does not seem to be the case. Despite tolerance for homosexuality being stable in most countries, the variable increased in importance in Hungary and Poland (significant at the 10% level). Further, this variable was one of the only significant variables across all three post-communist countries who rarely share variables in defining the political spectrum, and the coefficients on this variable were larger in absolute value in the post-communist countries compared to the other welfare regimes. These findings are interesting, and somewhat in line with Reynolds (2013), indicating that the topic of homosexuality has a larger influence in the post-communist countries.

Additionally, Hungary proved to be an interesting case when looking at the variables over time. It was the country with the most variables becoming more important over time (six, when including the 10% significance level). Further, some of these variables were converging towards the other welfare regimes. For example, political activism was found to be correlated with right self-placement in the PWLS regression for Hungary, but in round nine the interaction variable was significant and negative. This indicates that the value to a larger degree is becoming associated with left self-placement, as found in the other welfare regimes. Finally, the variable measuring attitude towards immigration has increased in importance in five countries (when including the 10% significance level). This could be due to the recent immigration waves to Europe, which we will describe in more detail in the future research section.

The findings outlined above give some interesting implications for theory on the political battlefield and left-right self-placement. Looking at Figure 11, it is clear how old politics issues still define the political landscape today in the conservative, liberal, and social democratic welfare regimes. Being a member of a trade union is seen as a good proxy for class structure (Piurko et al., 2011) and is associated with left self-placement. Believing in greater wealth redistribution is also correlated with left self-placement, indicating that old left-right economic debates still matter today. Further, religion is associated with right self-placement in those welfare regimes, and was only showing decreasing importance in Belgium, Switzerland, and Hungary. These findings are thus contrasting to the theories of Marx and Nietzsche who predicted the decline of religion, but in line with Knutsen (2017), who finds that religion still matters in party choice. We further find that many new politics values help define the political spectrum, such as the human value universalism, giving a good indication of general tolerance, the variable measuring tolerance for homosexuality, and immigration topics in Figure 11. The presence of both old and new politics issues provides evidence for the pluralization theory, which states that the political spectrum instead of letting new issues replace the old, incorporates them. These findings are in line with those of Knutsen (1995b), who also found new values to add to the old religious and materialist debates. Similar to the pluralization theory, the persistence theory states that new values only matter because they are coupled with the old values. However, we find that even when controlling for the old values in our study, the new values have importance.

Further, the modernization theory states that as countries develop, they tend to become more similar. Inglehart and Baker (2000) proposed modifications to this theory arguing that economic development indeed leads to increasing similarities, but that many developments are path dependent and depends on the history and religion of the country. Therefore, even as countries become more similar, they still have significant dissimilarities. Our study has shown that although many of the countries share similarities, they still have important differences and as mentioned, especially the post-communist countries stand out. This could be due to the post-communist countries being less developed, but also due to their different backgrounds. Further, we saw some indications that especially Hungary was converging towards the other welfare regimes, and that being tolerant towards homosexuality was a bigger issue in the post-communist countries. This gives further evidence for a modification of the modernization theory, underlining that countries indeed are path dependent but still converge on many aspects.

Finally, we believe to be the first to find strong relationships between political activity, satisfaction with society and political self-placement. We did not find any previous research that investigated these two variable groups, and therefore we did not expect to find any correlations. However, these two variable groups showed an interesting relationship. In the WFE regression and in all welfare regimes but the post-communist, these two variable groups were highly significant and of opposite sign. Satisfaction with society is positively correlated with political self-placement, while political activity is negatively correlated with self-placement. Further, the importance of political activity and left self-placement seems to either increase (Belgium and Ireland) or be constant over time (the remaining countries). Logically, these two variable groups are related by their attitude towards the current state of society – one measures a satisfaction with society while the other measures a will to change it, namely by being politically active (demonstrating, boycotting etc.). This gives the interesting implication that individuals that are satisfied with society are both less politically active and tend to associate with the political right, typically more conservative parties.

6.2 Economic consequences

Our study has shown that several economically related variables are important in defining the political left and right. The clearest example is on the one hand the human value power variable imprich, measuring whether the individual believes it is important to be rich, which is significant in most countries and correlated with right self-placement. On the other hand, gincdif, which measures whether the respondent believes the government should do more to reduce income differences is significant and correlated with left self-placement in ten countries. We further found that individuals associating with the left tend to be more politically active, and that individuals who are satisfied with society tend to associate with the political right. One could expect the case to be the opposite when a left-wing party is in power – namely that the right-wing supporters would protest against the left-wing parties in power – however this does not seem to be the case. Under the assumption that political activity shows some degree of dissatisfaction with society, this relationship could be explained by the well-documented increasing income gap in western societies (Brady and Leicht, 2008; Piketty, 2014). This could indicate that left-wing voters become more frustrated as they see the gap deepening. Coupled with the conflict between left-wing voters believing the income gap should be lowered and right-wing voters believing it is important to be rich, these findings clearly underline the importance of economic distribution policies in the mind of the public.

We found that the countries in the conservative, liberal, and social democratic welfare regimes were similar in many respects, and that especially the post-communist countries deviated from the others. Further, we found some implications of convergence of the post-communist countries towards the others, which implies that economic development leads to convergence of many aspects of society. An implication of this modernization theory is that as countries become more homogenous in some political respects, their abilities to cooperate might increase which can lead to more international trade and promote diplomacy. This seems to be highlighted by the cases of the opposite – namely that when countries elect state leaders, often populists, that deviate from the norms in their allied countries they tend to get into conflicts with previous allies, which has hampered trade. Take the election of Donald Trump in the US as an example. However, our findings imply that the development of countries can lead to larger similarities which, despite the persisting cultural and historical differences, potentially could lead to increased international trade. This relationship would be interesting to look into but is out of scope for this study, and we therefore leave this for further research. This could be done by creating indexes for similarities between countries based on our findings and looking into the evolution of trade between the countries as explained by these indexes.

6.3 Limitations

We will in this subsection describe the main issues in our study and how they possibly affect the results. First, the variable of interest in our study, the left-right scale self-placement, is a measure of the person's beliefs of his or her own political orientation. This makes our study a study of how the person associates with the political spectrum and therefore what values and characteristics people have and how these factors are associated with personal beliefs of political orientation. Our study is therefore not a study of what kind of individual that votes for e.g. the political right, but what kind of individual associates with the right. In order to check the robustness of our results, we tested the correlation between the respondents' position on the left-right scale and the position of the party for which they voted in the last election. This was found to be 56%, which seems somewhat low. One explanation for the low correlation could be that the parties' positions are not updated in the ParlGov database, on which the parties' political positions are based. This raises the issue that even if a voter has moved his perception of his/her own placement but still votes for the same party, this will lower the correlation between the two scales. Further, Adams et al. (2011) have shown that voters tend to vote for the same party even if they change their policies. If the parties change their policies and the database is not updated, this will lower the correlation. Nevertheless, the low correlation makes it obvious that our study focuses on associations, and that we cannot make claims on voter behavior based on our study.

A second limitation relates to our variable selection methods as we encountered a large degree of randomness when running the lasso and elastic net regressions. Before using the search grid of λ and α values mentioned in the method section, we used the default function in the 'caret' package to find the optimal values. This function takes random values for each parameter and takes the best combination of these. Even for a large range of random values, many folds and many repeats in the cross-validation, and even after running the same code several times, we ended up with completely different results that sometimes removed all variables and sometimes kept all variables. We therefore decided to use the predefined λ grid using the methodology of Friedman et al. (2010) and a predefined range for the α values. This entails that for the many different combinations of λ and α, the RMSEs were likely very similar, and in terms of out-of-sample predictions it seems that many combinations of λ and α would produce similar results. This implies that our α and λ values could have been very different if another approach had been chosen, and slight changes in our approach could possibly have produced very different results. We have tried to minimize the randomness in our study by specifying our approaches to enable replication of our results. However, it is obvious that despite our machine learning approach, the results are sensitive to subjective inputs. Further, we were hoping to reduce the number of variables in our regressions by far more than what was the case. However, by reducing the randomness in the models, we probably lost some of the benefits of the elastic net, which could possibly have resulted in a smaller number of variables left in the final models. When using the lasso on the WFE data it removed notably more variables than the elastic net. This is most likely due to the elastic nets ability to contain correlated values in the regression, whereas the lasso would drop all but one at random. Using the lasso could potentially have reduced the number of variables even further. Nevertheless, we believe that our approach is logically and methodologically sound. Further, we argue that our robustness checks prove that our findings are quite similar using e.g. the lasso and the elastic net. The main findings of these different approaches are similar, and we believe that we have captured the most important findings in the data.

Related to the limitations of the machine learning approaches outlined above, our study is limited in terms of the capacity limits to our computational power. Our methods for variable selection require a lot of computational power. Especially, when the number of folds, repeats and values for λ and α become large, the computations can take significant amounts of time. Some of our regression took more than ten hours to run with the specifications we mentioned in section 4. It is possible that better hardware could have produced different optimal values for λ and α and combined with the initial randomness of our results just described, it could produce quite different results.

Further, our approach to finding the evolutions over time of the different variables proved less fruitful than what we had hoped for. We tried different approaches such as running weighted least squares regressions for all rounds in each country. In this case, the variables' significance from round to round varied substantially and did not, as we had hoped for, show clear time trends in magnitude of coefficients or significance. This gives some indication of large randomness from survey round to survey round and made it difficult to track the time trends in the data. We therefore decided on the approach of creating interaction variables with the most important variables found in subsection 5.2 and the round dummies. Further, we only looked at the coefficient of the interaction dummies with round nine. This gave a more comprehensive picture than the nine regressions for all twelve countries, but it is possible that we have lost some information by not focusing on the middle rounds. Further, we handpicked the most important variables from subsection 5.2 based on how many countries a variable was significant in. This could also result in some information loss. We reached some insights into the evolutions over time, but more comprehensive studies of the time trends in the data would be interesting. Possibly, indexing the variables would increase interpretability over time, but we need to leave this for future research and will describe it in more detail in the next subsection.

The use of welfare regimes in our study has made it easier to compare countries across and between different groups. On the other hand, the classifications are not perfect, and we might have lost some interesting patterns between countries that could in other ways be clustered. For example, we could have used the classification in Piurko et al. (2011), which could possibly have changed the results of our study. We do, however, believe that the classification used in our study has provided more benefits than caveats, and as we found, our classification approach highlighted some important findings within each welfare regime, that would have been lost by the classification used in Piurko et al. (2011).

We have already described the education variables and the issues related to the dummy variables to some degree throughout the study. The main issue arises from the base dummy, which is the dummy for almost no education (0-5 years). Due to the nature of the dummy, this variable often contains very few individuals, which may cause the mean left-right self-placement of this group to vary a lot in the PWLS regressions in subsection 5.2. This may have caused the signs of the other dummies to shift and influenced their significance over time. We have tested this hypothesis on the country level and actually found the means to be fairly similar across the countries as they range from 4.4 in Belgium to 5.6 in Poland. Further, the standard deviations of the left-right scale for these individuals are close to the full sample standard deviation, and the group seems representative despite the low sample size for this dummy variable (see Table C4 in Appendix C). However, it might give a wrong picture of the effects of education for some of the dummy variables since they compare to the base. If the base dummy's mean is, for example, five and the same is the case for the ISCED 8 dummy (for PhD level), the ISCED 8 will not show up as significant, since it does not differ from the base. By not being significant in our regressions, we did not put a great emphasis on the variable, and a different base dummy might have changed our interpretations. However, there is likely a non-linear relationship between self-placement and education, as found in Stubager (2013). He finds that education leads to association with more libertarian values in contrast to authoritarian values, and therefore a greater association with the center parties rather than the right-wing parties. Further, if low educated voters tend to vote for populist parties, and these parties are present at both ends of the scale (Guiso et al., 2017), this could indicate arbitrary self-placement. This indicates a non-linear relationship. We discuss this further in the suggestions for future research.

6.4 Future research

Based on the findings and limitations of our study, there are several possibilities for future research. First, we have described several groups of variables in our study, such as immigration and religion. We included each variable to see if there were any differences between them. Sometimes we found that two variables in the same group had opposite sign while both being significant. This could be avoided by using index variables to capture the overall effect of being positive towards e.g. immigration. On the one hand, this would increase the certainty of the significance of certain groups, while on the other hand losing the information of the specific variables. For example, we found one of the immigration variables, imsmetn, to be correlated with the right in most countries. This information would be lost by indexing. Further, these indexes could be created by using principal components to capture the largest variance within each variable group. By doing so, one variable would capture a large proportion of the variance in e.g. the immigration variable group, which could be used as the index. This would greatly reduce the number of variables in the regression and make it more convenient to create interaction variables with the round dummies, and thereby investigate relationships over time. Therefore, by indexing some interesting findings might become evident, but we leave this for further research.

Further, other variable selection methods were considered. For example, the lasso was justified by Tibshirani (1996) as being a continuous rather than discrete variable selection method, and thereby an improvement compared to subset selection. In subset selection one either starts from no variables or all variables and adds/removes variables step by step. Obviously, such a procedure is very dependent on individual choice and is path dependent. Another approach is best subset selection, in which one tries all possible combinations of explanatory variables. Letting m denote the number of explanatory variables, this approach has 2^m possible combinations (James et al., 2013), and with many explanatory variables (as 84 in our case), the computational burden becomes large. The General-to-Specific (GETS) procedure provides a promising alternative to best subset selection. The idea is to start from the full model including all explanatory variables. Each insignificant variable in this regression provides a starting point for backwards selection, and each removal is tested by both t and F-tests. The procedure stops when all variables are significant. Comparing all paths, the best model is the one with the best performance on some information criterion (Pretis et al., 2018). A possible drawback of the GETS procedure is that it is optimized on a full dataset instead of utilizing cross-validation and is thus optimized with respect to an in-sample criterion rather than an out-of-sample criterion. This may introduce some overfitting in the model. However, it should be possible to use cross-validation when applying GETS, but we have not looked more into this possibility. It would be interesting to see how the GETS would compare to our approach and whether the selected variables would be similar to those of the elastic net or lasso. We have to leave this for further research.

Another interesting line of thought was proposed by Knutsen (2017) who argues that socio-demographics most likely affect the values of the individual and therefore self-placement. For example, education might not directly influence political self-placement, but only do so indirectly as higher education causes the individual to have different values. We have included all variables in the same regression, but further research could look into these effects and how socio-demographics indirectly plays a larger role by influencing the political (or human) values of the individual.

Our study has not shown the direction of influence in determining the political debate – is it shaped by voters or politicians? It has been proposed by Alonso and Fonseca (2012) that the political debate on immigration is mostly caused by politicians. We found immigration to become increasingly important in five countries in our sample. However, as the variable was stable over time in most countries, this could indicate that the debate is created by politicians. In light of the recent immigration waves to Europe, one could expect immigration to matter more in the mind of the public if the political debate was indeed caused by the voters. If this was the case, we would expect the immigration variables to have a larger influence on left-right self-placement in the recent rounds, but in most countries the relationship seems to be stable. This gives a slight indication that the immigration debate is indeed caused by the politicians (and possibly the media) rather than voters. However, this has not been the focus of this study, but it would be interesting for future research to investigate if the correlations between left and right self-placement found in our study are caused by politicians or voters.

Since we use linear econometric models, we lose the possibility of looking into values that drive individuals to associate with the political center. For example, in Stubager (2013) education is found to be correlated with libertarian values, and he further finds that these values are represented by the Social Liberals, a center party, in Denmark. Since our models are linear, they cannot capture these effects. If education above a certain level moves the individual towards the middle, this effect will rarely show up as significant as the value does not deviate a lot from the mean of the base dummy. This could be investigated further by using a three step probit model, in which e.g. factors driving the individual to the left, the middle or the right could be investigated. However, this is beyond the scope of this study and we leave it for further research.

7 Conclusion

In this study we have investigated the effects of 84 variables, measuring a large range of individual characteristics and beliefs, on political self-placement using nine rounds of the European Social Survey data across twelve countries. We tested these correlations on a broader level, including all twelve countries in a weighted two-ways fixed effects regression. Afterwards, we split the data per country and used pooled weighted least squares regressions to find the most important variables. We combined this with theory on welfare regimes to compare the countries within and across welfare regimes. Lastly, we created interaction variables for the most important variables and the round dummies to investigate the evolution over time. By applying the methods used in this study, we deviate from the approaches used by other authors within this literature. The typical approach has been to investigate a few variables and how they affect self-placement, often without controlling for other variables. Some authors, such as Piurko et al. (2011) control for a few socio-demographic variables, or, as Knutsen (2017), acknowledge the interplay between socio-demographic variables and individual values. However, by including as many variables as possibly, we let the data speak for itself and tested previous findings in the literature while controlling for a large range of variables. We further deviate from previous literature by including variable selection methods from the field of data science, which were used to identify the most important variables in the data in an unbiased fashion. This made it possible for us to focus on the most important variables in the data.

Using these empirical approaches from the fields of data science and econometrics, we provide an answer to the research question of which factors correlate with individuals' self-placement on the political left-right scale. We find that being pro-immigration was the only variable group correlated with left self-placement in all countries and in the broader cross-country regression. We further found that being pro-equal rights for homosexuals was significantly correlated with left self-placement in the WFE regression and in most countries, with the only exception being Belgium. On the other hand, being religious and satisfied with the current state of society correlated with right self-placement in all countries and the WFE regression. Further, the human value power was correlated with right self-placement in all countries except for Slovenia.

Further, we found some interesting differences between the welfare regimes. First, especially the post-communist welfare regime stands out from the conservative, liberal, and social democratic welfare regimes. The variables measuring views on wealth redistribution, trade union membership, political activity, and the human value universalism were all correlated with left self-placement in all welfare regimes but the post-communist. The human value power was correlated with right self-placement in the three other welfare regimes. Further, the left-right scale seemed to be less defined in the post-communist countries. This could indicate that the post-communist countries have yet to define the political left and right scale. We further found slight but interesting differences between the three other welfare regimes, which can best be seen in the figures in subsection 5.4.

We further looked into how the most important variables have evolved over time. Despite the aforementioned limitations to our approach, we found that most of the variables have been stable over time. Here we found tolerance for homosexuality to be an increasingly important topic in the post-communist countries, and a converge of especially Hungary towards the countries in the other three welfare regimes. The stability of most of the variables in our study provided evidence for the persistence of both old and new political values in defining the political landscape and thus provides evidence for the pluralization theory (Knutsen, 1995b).

We have further shown the importance of class structure and income redistribution topics, underlining that the economic consequences of politics are still a great topic in the mind of the public today. On the one hand, the income redistribution variable, measuring whether the individuals believe the government should do more to decrease income differences, was correlated with left self-placement. This could indicate that these individuals prefer higher taxes to increase income equality. On the other hand, the significance of one of the human value power variables, which measures whether the individuals believe it is important to be rich, was correlated with right self-placement, possibly indicating that these individuals prefer lower taxes. These findings indicate the importance of taxes in politics, underlining that old politics issues, such as the traditional economic left and right, are still important. Further, the persistence of religion in all countries indicate the importance of religious versus secular values. This provides evidence for the pluralization theory (Knutsen, 1995b), stating that new political topics gets added to the old rather than replacing them.

Our findings provide evidence for the modernization theory, but they further underline the need for modifications of the theory. As found in Inglehart and Baker (2000), we find that developed countries seem to be rather similar in values and topics in the political debate. This is underlined by the similarities across the conservative, liberal, and social democratic welfare regimes and the difference between these regimes and the post-communist. The deviance of the post-communist countries could indicate that these countries are still converging towards the other welfare regimes or simply that their significantly different history from the other welfare regimes can still be spotted in the political spectrum today. Further, our results showed that religion still matters in all twelve countries. This is the opposite of what was expected of the first modernization theorists and it further underlines the point that despite modernization and convergence of cultural values in countries, their modernizations are dependent on history and religion.

Interestingly, we identified a relationship between being politically active and associating with the political left contrasted by a correlation between being satisfied with society and associating with the political right. While we cannot conclude on the theoretical explanations for these relationships, we hypothesized that it might be due to the well-documented increasing income gap that increasingly dissatisfies left-wing voters, who typically prefer greater wealth redistribution. These findings underline the importance of distributional politics in the mind of the public.

In sum, our study provides an overview of what defines the political spectrum across twelve European countries using the ESS data. By taking an explorative approach, we found variables that consistently, across all countries, help define the political left and right. We found that across all twelve countries, being pro-immigration is associated with left self-placement while being satisfied with society and being religious is associated with right self-placement. We further highlighted differences across countries and welfare regimes, with the most mentionable case being the post-communist countries, in which the political left-right scale seems to be weakly defined in the minds of the public, which is aligned with the literature (Castles and Obinger, 2008; Ebbinghaus, 2012; Fenger, 2007; Piurko et al., 2011). By looking at the variables' evolution over time, we find that many old political values, such as redistribution of wealth and trade union membership, still plays a large role in the conservative, liberal, and social democratic countries, as these values were not decreasing over time. Combined with the importance of the new political values, such as tolerance for homosexuality, we find support for the pluralization theory, stating that new political issues are added to the old, rather than replacing them. Finally, the predictions of Marx of complete convergence of countries, the increasing size of the working class, and the end of religion and history, does not hold in our study. We find that class structure still matters, measured by trade union membership but the differences among countries indicate a need for a modification of the modernization theory, as development seems to be path dependent. History does not seem to be a clear one-way trajectory, but rather includes several interrelated dynamics that depend on history and culture.

References

Adams, J., Ezrow, L., and Somer-Topcu, Z. (2011). Is anybody listening? evidence that voters do not respond to european parties' policy statements during elections. *American Journal of Political Science*, 55(2):370–382.

Alonso, S. and Fonseca, S. C. d. (2012). Immigration, left and right. *Party Politics*, 18(6):865–884.

Arellano, M. (1987). Practitioners'corner: Computing robust standard errors for within-groups estimators. *Oxford bulletin of Economics and Statistics*, 49(4):431–434.

Arts, W. and Gelissen, J. (2002). Three worlds of welfare capitalism or more? a state-of-the-art report. *Journal of European social policy*, 12(2):137–158.

Baltagi, B. H. (2005). Econometric analysis of panel data. *West Sussex, England*.

Benoit, K. and Laver, M. (2006). *Party policy in modern democracies*. Routledge.

Bilsky, W., Janik, M., and Schwartz, S. H. (2011). The Structural Organization of Human Values-Evidence from Three Rounds of the European Social Survey (ESS). *Journal of Cross-Cultural Psychology*, 42(5):759–776.

Brady, D. and Leicht, K. T. (2008). Party to inequality: Right party power and income inequality in affluent Western democracies. *Research in Social Stratification and Mobility*, 26(1):77–106.

Breusch, T. S. (1978). Testing for autocorrelation in dynamic linear models. *Australian Economic Papers*, 17(31):334–355.

Breusch, T. S. and Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. *Econometrica*, 47(5):1287–1294.

Breusch, T. S. and Pagan, A. R. (1980). The Lagrange Multiplier Test and its Applications to Model Specification in Econometrics. *The Review of Economic Studies*, 47(1):239–253.

Castles, F. G. and Mair, P. (1984). Left-Right Political Scales: Some 'Expert' Judgments. *European Journal of Political Research*, 12(1):73–88.

Castles, F. G. and Obinger, H. (2008). Worlds, Families, Regimes: Country Clusters in European and OECD Area Public Policy. *West European Politics*, 31(1-2):321–344.

Chambers, R. L. and Skinner, C. J. (2003). *Analysis of Survey Data*. John Wiley & Sons.

Chen, J. and Rodden, J. (2013). Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures. *Quarterly Journal of Political Science*, 8:239–269.

Chow, G. C. (1960). Tests of equality between sets of coefficients in two linear regressions. *Econometrica: Journal of the Econometric Society*, pages 591–605.

Croissant, Y. and Millo, G. (2008). Panel Data Econometrics in *R* : The **plm** Package. *Journal of Statistical Software*, 27(2).

Deaton, A. (1985). Panel data from time series of cross-sections. *Journal of econometrics*, 30(1-2):109–126.

Devos, T., Spini, D., and Schwartz, S. H. (2002). Conflicts among human values and trust in institutions. *British Journal of Social Psychology*, 41(4):481–494.

Doherty, C., Kiley, J., Tyson, A., and Johnson, B. (2016). NUMBERS, FACTS AND TRENDS SHAPING THE WORLD.

Ebbinghaus, B. (2012). Comparing welfare state regimes: Are typologies an ideal or realistic strategy. *ESPAN, Edinburg, UK*, pages 1–20.

Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Princeton University Press, Princeton, NJ.

Esping-Andersen, G. (1993). The comparative macro-sociology of welfare states. In *Social exchange and welfare development*, pages 123–36.

ESS (2014). ESS weighting data˙ `https://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data_1.pdf`. Accessed: 2020-04-05.

Fenger, M. (2007). Welfare regimes in Central and Eastern Europe: Incorporating post-communist countries in a welfare regime typology. *Contemporary Issues and Ideas in Social Sciences*, 3(2):1–30.

Friedman, J., Hastie, T., and Tibshirani, R. (2010). Regularization Paths for Generalized Linear Models via Coordinate Descent. *Journal of Statistical Software*, 33(1).

Godfrey, L. G. (1978). Testing Against General Autoregressive and Moving Average Error Models when the Regressors Include Lagged Dependent Variables. *Econometrica*, 46(6):1293.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2017). Populism: Demand and Supply. *CEPR Discussion Paper*, page 63.

Hastie, T. and Qian, J. (2016). Glmnet_vignette.pdf.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the econometric society*, pages 1251–1271.

Henjak, A. (2010). Political Cleavages and Socio-economic Context: How Welfare Regimes and Historical Divisions Shape Political Cleavages. *West European Politics*, 33(3):474–504.

Hoerl, A. E. and Kennard, R. W. (1970). Ridge Regression: Biased Estimation for Nonorthogonal Problems. *Technometrics*, 12(1):55–67.

Huber, J. and Inglehart, R. (1995). Expert Interpretations of Party Space and Party Locations in 42 Societies. *Party Politics*, 1(1):73–111.

Hyndman, J, R. and Athanasopoulos, G. (2018). *Forecasting: Principles and Practice*. OTexts.

Imai, K. and Kim, I. S. (2019). When Should We Use Unit Fixed Effects Regression Models for Causal Inference with Longitudinal Data? *American Journal of Political Science*, 63(2):467–490. _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/ajps.12417.

Inglehart, R. and Baker, W. E. (2000). Modernization, Cultural Change, and the Persistence of Traditional Values. *American Sociological Review*, 65(1):19.

James, G., Witten, D., Hastie, T., and Tibshirani, R. (2013). *An Introduction to Statistical Learning*, volume 103 of *Springer Texts in Statistics*. Springer New York, New York, NY.

Knutsen, O. (1995a). Left-Right Materalist Value Orientation. In *The impact of values*, pages 160–196.

Knutsen, O. (1995b). Value orientations, political conflicts and left-right identification: A comparative study. *European Journal of Political Research*, 28(1):63–93.

Knutsen, O. (2017). *Social structure, value orientations and party choice in Western Europe*. Springer.

Koch, A., Halbherr, V., Stoop, I. A., and Kappelhof, J. W. (2014). Assessing ess sample quality by using external and internal criteria. *Mannheim: European Social Survey, GESIS*.

Kroh, M. (2007). Measuring Left-Right Political Orientation: The Choice of Response Format. *Public Opinion Quarterly*, 71(2):204–220.

Kuhn, M. et al. (2008). Building predictive models in r using the caret package. *Journal of statistical software*, 28(5):1–26.

Lena, H. F. and London, B. (1993). The Political and Economic Determinants of Health Outcomes: A Cross-National Analysis. *International Journal of Health Services*, 23(3):585–602. Publisher: SAGE Publications Inc.

Letki, N. and Evans, G. (2005). Endogenizing Social Trust: Democratization in East-Central Europe. *British Journal of Political Science*, 35(3):515–529.

Muller, E. N. and Seligson, M. A. (1994). Civic Culture and Democracy: The Question of Causal Relationships. *American Political Science Review*, 88(3):635–652.

Napier, J. L. and Jost, J. T. (2008). Why Are Conservatives Happier Than Liberals? *Psychological Science*, 19(6):565–572.

Piketty, T. (2014). *Capital in the twenty-first century.* The Belknap Press of Harvard University Press, Cambridge Massachusetts.

Piurko, Y., Schwartz, S. H., and Davidov, E. (2011). Basic personal values and the meaning of left-right political orientations in 20 countries. *Political Psychology*, 32(4):537–561.

Pretis, F., Reade, J., and Sucarrat, G. (2018). Automated general-to-specific (gets) regression modeling and indicator saturation methods for the detection of outliers and structural breaks. *Journal of Statistical Software*, 86(3).

Radcliff, B. (2001). Politics, Markets, and Life Satisfaction: The Political Economy of Human Happiness. *American Political Science Review*, 95(4):939–952.

Reynolds, A. (2013). Representation and Rights: The Impact of LGBT Legislators in Comparative Perspective. *American Political Science Review*, 107(2):259–274.

Russell, J. E. and Fraas, J. W. (2005). An application of panel regression to pseudo panel data. *Multiple linear regression viewpoints*, 31(1):1–15.

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. In *Advances in Experimental Social Psychology*, volume 25, pages 1–65. Elsevier.

Schwartz, S. H. and Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of personality and social psychology*, 53(3):550.

Simon, N., Friedman, J., Hastie, T., and Tibshirani, R. (2011). Regularization Paths for Cox's Proportional Hazards Model via Coordinate Descent. *Journal of statistical software*, 39(5):1–13.

Solon, G., Haider, S. J., and Wooldridge, J. M. (2015). WHAT ARE WE WEIGHTING FOR?.pdf. J. Human Resources March 31, 2015 50:301-316;.

Stubager, R. (2013). The Changing Basis of Party Competition: Education, Authoritarian–Libertarian Values and Voting. *Government and Opposition*, 48(3):372–397.

Taylor, P., Funk, C., and Craighill, P. (2006). Are we happy yet.

Thränhardt, D. (1995). The Political Uses of Xenophobia in England, France and Germany. *Party Politics*, 1(3):323–345. Publisher: SAGE Publications Ltd.

Tibshirani, R. (1996). Regression Shrinkage and Selection Via the Lasso. *Journal of the Royal Statistical Society: Series B (Methodological)*, 58(1):267–288.

Tibshirani, R., Wainwright, M., and Hastie, T. (2015). *Statistical Learning with Sparsity: the lasso and generalizations*. CRC press.

UNESCO Institute for Statistics (2012). *International standard classification of education: ISCED 2011*. UNESCO Institute for Statistics, Montreal, Quebec. OCLC: 879578739.

Verbeek, M. (1996). Pseudo Panel Data. In Hallet, A. J. H., Marquez, J., Mátyás, L., and Sevestre, P., editors, *The Econometrics of Panel Data*, volume 33, pages 280–292. Springer Netherlands, Dordrecht. Series Title: Advanced Studies in Theoretical and Applied Econometrics.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: journal of the Econometric Society*, pages 817–838.

Wolf, S. (2009). *Sexuality and socialism: History, politics, and theory of LGBT liberation*. Haymarket Books.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press.

Wooldridge, J. M. (2013). *Introductory Econometrics: A modern Approach*.

Zou, H. and Hastie, T. (2005). Regularization and variable selection via the elastic net. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 67(2):301–320.

Appendix

Appendix A: Abbreviations and symbols

Abbreviations

ESS: European Social Survey

Conservative welfare regime: Corporatist-conservative welfare regime OLS: Ordinary Least Squares

WLS: Weighted Least Squares

POLS: Pooled OLS

PWLS: Pooled Weighted Least Squares

FE: Fixed Effects

WFE: Weighted Fixed Effects (used to also denoted the weighted two-ways fixed effects method)

RE: Random Effects

RMSE: Root Mean Squared Error

LM: The Lagrange Multiplier

Notation

m denotes the number of explanatory variables

h denotes the number of time-varying explanatory variables

n denotes denote number of observations

y_i or $\boldsymbol{y}$ denotes an observation or a column vector of dimension $n \times 1$ vector of observations for the dependent variable

$\boldsymbol{x_i}$ or $\boldsymbol{X}$ denotes a row vector of dimension $1 \times (m+1)$ or a matrix of dimension $n \times (m+1)$ containing the explanatory variables

$\boldsymbol{\beta}$ denotes a row vector of dimension $1 \times (m+1)$ row vector containing regression coefficients and the regression intercept

$\hat{\boldsymbol{V}}$ denotes an estimated covariance matrix

R^2 denotes the explained variance of the dependent variable conditional on the explanatory variables

σ^2 denotes the variance of a variable

u_i denotes the error terms of the regressions

a_i denotes the individual fixed effects in the panel data models

γ_t denotes the time fixed effects in the panel data models

v denotes a composite error term including the individual and time fixed effects and the error term, i.e. $v = a_i + \gamma_t + u_i$

δ denotes regression coefficient in the statistical tests used to distinguish the coefficients from the β estimates

ρ denotes regression coefficient in the statistical tests used to distinguish the coefficients from the β estimates

w denotes the weights used in the weighted regressions

χ^2_{df} denotes the χ^2 distribution with df degrees of freedom

$| \, |$ denotes the absolute value/magnitude of a scalar

$|| \, ||$ denotes the norm (or length) of a vector

$\bar{}$ (a bar above a variable) denotes the mean of the variable

$\hat{}$ (a hat above a variable) denotes that the variable is estimated rather than given

$\ddot{}$ (two dots above a variable) denotes that the variable has been time demeaned, i.e. the mean of the variable over time has been substracted from all values of the variable

$\bar{}_{i.}$ (a bar above a variable with subscript i.) denotes a variable that has been averaged across time.

$\bar{}_{.t}$ (a bar above a variable with subscript .t) denotes a variable that has been averaged across individuals.

$\bar{}_{..}$ (a bar above a variable with subscript ..) denotes a variable that has been averaged across time and individuals

λ denotes the penalization term used in the ridge, lasso and elastic net regressions

α denotes the tradeoff between the lasso and ridge regression in the elastic net

s denotes the budget constraints in the rewritten lasso and ridge optimization problems

θ used to denote the factor multiplied to the λ_{max} in order to find λ_{min} used to create the λ-sequence over which to find the optimal value for λ in cross-validation ψ denotes the length of the λ-sequence

Appendix B: Theoretical framework

Table B1: Welfare regime classification

Welfare regimes	Country	Main source	Consistency
Conservative	Belgium	Esping-Andersen (1990)	59%
	Germany	Esping-Andersen (1990)	77%
	France	Esping-Andersen (1990)	100%
Liberal	Ireland	Esping-Andersen (1990)	45%
	Switzerland	Esping-Andersen (1990)	56%
	Great Britain	Esping-Andersen (1990)	58%
Social democratic	Finland	Esping-Andersen (1990)	54%
	Netherlands	Esping-Andersen (1990)	42%
	Norway	Esping-Andersen (1990)	100%
Post-communist	Hungary	Castles and Obinger (2008)	100%
	Poland	Castles and Obinger (2008)	100%
	Slovenia	Castles and Obinger (2008)	100%

Source: Own table based on the categorisation in Ebbinghaus (2012).
Note: The consistency measure shows the percentage of studies that assigned the respective country to the corresponding welfare state. Ebbinghaus clasifies the countries into welfare regimes in which they have the largest consistency. Despite the low consistencies for some countries, this is where they have the highest.

Table B2: Welfare regime comparison between
Esping-Andersen (1990) and Piurko et. al (2011)

Country	Classification in our study, based on Esping-Andersen (1990)	Classification in Piurko et al. (2011)
Belgium Germany France	Conservative	Liberal
Ireland	Liberal	Traditional
Switzerland Great Britain	Liberal	Liberal
Finland Netherlands Norway	Social democratic	Liberal
Hungary Slovenia	Post-communist	Post-communist
Poland	Post-communist	Post-communist/Traditional

Source: Own table based on the categorisation in Esping-Andersen (1990) and Piurko et. al (2011).

Appendix C: Data

Table C1: Variable descriptions

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Social trust	Social trust	1	ppltrst	Using this card, generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted.	0-10	0 = You can't be too careful. 10 = Most people can be trusted	
		2	pplfair	Using this card, do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?	0-10	0 = Most people try to take advantage of me. 10= Most people try to be fair	
		3	pplhlp	Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?	0-10	0 = People mostly look out for themselves. 10 = People mostly try to be helpful	
Politics	Interested in politics and Political activism	4	polintr	How interested would you say you are in politics - are you...	1-4	4 = Very interested. 1 = Not at all interested	Scale inverted from original
		5	vote	Some people don't vote nowadays for one reason or another. Did you vote in the last [country] national election in [month/year]?	0-1	1 yes, 2 no, 3 not eligble	2 = no changed to 0 = no. 3 = not eligible merged with 0 = no

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Politics	Interest in politics and political activism	6	contplt	There are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...contacted a politician, government or local government official?	0-1		Value for 'no' changed to 0 from 2
		7	wrkprty	There are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...worked in a political party or action group?	0-1		Value for 'no' changed to 0 from 2
		8	badge	There are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...worn or displayed a campaign badge/sticker?	0-1		Value for 'no' changed to 0 from 2
		9	sgnptit	There are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...signed a petition?	0-1		Value for 'no' changed to 0 from 2

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
		10	pbldmn	here are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...taken part in a lawful public demonstration?	0-1		Value for 'no' changed to 0 from 2
Politics	Interest in politics and political activism	11	bctprd	There are different ways of trying to improve things in [country] or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you... ...boycotted certain products?	0-1		Value for 'no' changed to 0 from 2
		12	clsprty	Is there a particular political party you feel closer to than all the other parties?	0-1		Value for 'no' changed to 0 from 2
		13	lrscale	In politics people sometimes talk of 'left' and 'right'. Using this card, where would you place yourself on this scale, where 0 means the left and 10 means the right?	0-10	0 = the left. 10 = the right	

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Politics	Trust in institutions	14	trstprl	Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...[country]'s parliament?	0-10	0 = you do not trust an institution at all. 10 = you have complete trust.	
		15	trstlgl	Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...the legal system?	0-10	0 = you do not trust an institution at all. 10 = you have complete trust.	
		16	trstplc	Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...the police?	0-10	0 = you do not trust an institution at all. 10 = you have complete trust.	
		17	trstplt	Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...politicians?	0-10	0 = you do not trust an institution at all. 10 = you have complete trust.	

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Politics	Satisfaction with society	18	stflife	All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied.	0-10	0 = extremely dissatisfied. 10 = extremely satisfied.	
		19	stfeco	On the whole how satisfied are you with the present state of the economy in [country]?	0-10	0= Exttremely dissatisfied. 10 = Extremely satisfied	
		20	stfdem	And on the whole, how satisfied are you with the way democracy works in [country]?	0-10	0= Exttremely dissatisfied. 10 = Extremely satisfied	
		21	stfedu	Now, using this card, please say what you think overall about the state of education in [country] nowadays?	0-10	0= Exttremely bad. 10 = Extremely good	
		22	stfhlth	Still using this card, please say what you think overall about the state of health services in [country] nowadays?	0-10	0= Exttremely bad. 10 = Extremely good	

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Politics	Immigration	23	imsmetn	Now, using this card, to what extent do you think [country] should allow people of the same race or ethnic group as most [country]'s people to come and live here?	1-4	4 = Allow many to come and live here. 1 = Allow none	Scale inverted from original
		24	imdfetn	How about people of a different race or ethnic group from most [country] people?	1-4	4 = Allow many to come and live here. 1 = Allow none	Scale inverted from original
		25	impcntr	How about people from the poorer countries outside Europe?	1-4	4 = Allow many to come and live here. 1 = Allow none	Scale inverted from original
		26	imbgeco	Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?	0-10	0 = Bad for the economy. 10 = Good for the economy	
		27	imueclt	And, using this card, would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?	0-10	0 = Cultural life undermined. 10 = Cultural life enriched	
		28	imwbcnt	Is [country] made a worse or a better place to live by people coming to live here from other countries?	0-10	0 = Worse place to live. 10 = Better place to live	

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Politics	Wealth redistribution	29	gincdif	Using this card, please say to what extent you agree or disagree with each of the following statements. The government should take measures to reduce differences in income levels.	1-5	5 = Agree strongly. 1 = Disagree strongly	Scale inverted from original
	Tolerance for homosexuals	30	freehms	Using this card, please say to what extent you agree or disagree with each of the following statements. Gay men and lesbians should be free to live their own life as they wish.	1-5	5 = Agree strongly. 1 = Disagree strongly	Scale inverted from original
Subjective well-being, social exclusion, religion, national and ethnic identity	Happiness	31	happy	Taking all things together, how happy would you say you are?	0-10	0 = Extremely unhappy. 10 = Extremely happy	
	Social activity	32	sclmeet	Using this card, how often do you meet socially with friends, relatives or work colleagues?	1-7	1 = Never. 7 = Every day	
		33	sclact	Compared to other people of your age, how often would you say you take part in social activities?	1-5	1 = Much less than most. 5= Much more than most	
	Security	34	crmvct	Have you or a member of your household been the victim of a burglary or assault in the last 5 years?	0-1		Value for 'no' changed to 0 from 2
		35	asefdrk	How safe do you - or would you - feel walking alone in this area after dark? Do - or would - you feel...	1-4	4 = Very safe. 1 = Very unsafe	Scale inverted from original

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Subjective well-being, social exclusion, religion, national and ethnic identity	Health	36	health	How is your health in general? Would you say it is ...	1-5	5 = Very good. 1 = Very bad	Scale inverted from original
		37	hlthhmp	Are you hampered in your daily activities in any way by any longstanding illness, or disability, infirmity or mental health problem? If yes, is that a lot or to some extent?	0-1		3 = no changed to 0 = no. 2 = to some extent merged with 1 = yes
	Religion	38	rlgdgr	Regardless of whether you belong to a particular religion, how religious would you say you are?	0-10	0 = Not at all religios. 10 = Very religious	
		39	rlgatnd	Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?	1-7	1 = Never. 7 = Every day	Scale inverted from original
		40	pray	Apart from when you are at religious services, how often, if at all, do you pray?	1-7	1 = Never. 7 = Every day	Scale inverted from original
	Ethnicity	41	brncntr	Were you born in [country]?	0-1		'no' changed to 0 from 2
		42	blgetmg	Do you belong to a minority ethnic group in [country]?	0-1		'no' changed to 0 from 2
		43	facntr	Was your father born in [country]?	0-1		'no' changed to 0 from 2
		44	mocntr	Was your mother born in [country]?	0-1		'no' changed to 0 from 2

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Gender and age	Gender	45	gndr	CODE SEX, respondent	0-1		Value for 'no' changed to 0 from 2
	Age	46	agea	Age of respondent, calculated	15-90		
Socio-demographics	Education	47	eduisced0	Less than primary education	Base		Created from education years
		48	eduisced1	Primary education	0-1		Created from education years
		49	eduisced2	Lower secondary education	0-1		Created from education years
		50	eduisced3	Upper secondary education	0-1		Created from education years
		51	eduisced6	Bachelor or equivalent level	0-1		Created from education years
		52	eduisced7	Master or equivalent level	0-1		Created from education years
		53	eduisced8	Doctoral or equivalent level	0-1		Created from education years

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
	Domicile	54	domicil	Which phrase on this card best describes the area where you live?	1-5	5 = A big city. 1 = Farm or home in countryside	Scale inverted from original
		55	pdwrk	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? In paid work (or away temporarily) (employee, self-employed, working for your family business)	0-1	0 = Not marked. 1 = Marked	
		56	edctn	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? In education (not paid for by employer) even if on vacation	0-1	0 = Not marked. 1 = Marked	
Socio-demographics		57	uempla	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Unemployed and actively looking for a job	0-1	0 = Not marked. 1 = Marked	
	Employment	58	uempli	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Unemployed, wanting a job but not actively looking for a job	0-1	0 = Not marked. 1 = Marked	
		59	dsbld	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Permanently sick or disabled	0-1	0 = Not marked. 1 = Marked	
		60	rtrd	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Retired	0-1	0 = Not marked. 1 = Marked	

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
		61	hswrk	Using this card, which of these descriptions applies to what you have been doing for the last 7 days? Doing housework, looking after children or other persons	0-1	0 = Not marked. 1 = Marked	
	Employment	62	uemp3m	Have you ever been unemployed and seeking work for a period of more than three months?	0-1		Value for 'no' changed to 0 from 2
Socio-demographics		63	atncrse	During the last twelve months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work?	0-1		Value for 'no' changed to 0 from 2
	Trade union membership	64	mbtru	Are you or have you ever been a member of a trade union or similar organisation? IF YES, is that currently or previously?	0-1	1 = current, 2= privous, 3 = no	Value for 'no' changed to 0 from 3. 1 = currently and 2 =previously merged to 1 = yes

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Self-Direction	65	ipcrtiv	I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Thinking up new ideas and being creative is important to her/him. She/he likes to do things in her/his own original way.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and and 6 = Not like me at all
		66	impfree	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to make her/his own decisions about what she/he does. She/he likes to be free and not depend on others.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and and 6 = Not like me at all
	Universalism	67	ipeqopt	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he thinks it is important that every person in the world should be treated equally. She/he believes everyone should have equal opportunities in life.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Universalism	68	ipudrst	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to listen to people who are different from her/him. Even when she/he disagrees with them, she/he still wants to understand them.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		69	impenv	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he strongly believes that people should care for nature. Looking after the environment is important to her/him.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
	Benevolence	70	iphlppl	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It's very important to her/him to help the people around her/him. She/he wants to care for their well-being.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		71	iplylfr	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to be loyal to her/his friends. She/he wants to devote herself/himself to people close to her/him.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Tradition	72	ipmodst	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to be humble and modest. She/he tries not to draw attention to herself/himself.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		73	imptrad	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Tradition is important to her/him. She/he tries to follow the customs handed down by her/his religion or her/his family.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
	Conformity	74	ipfrule	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he believes that people should do what they're told. She/he thinks people should follow rules at all times, even when no-one is watching.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		75	ipbhprp	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him always to behave properly. She/he wants to avoid doing anything people would say is wrong.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Security	76	impsafe	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to live in secure surroundings. She/he avoids anything that might endanger her/his safety.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		77	ipstrgv	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him that the government ensures her/his safety against all threats. She/he wants the state to be strong so it can defend its citizens.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
	Power	78	imprich	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to be rich. She/he wants to have a lot of money and expensive things.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		79	iprspot	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It is important to her/him to get respect from others. She/he wants people to do what she/he says.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Achievement	80	ipshabt	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. It's important to her/him to show her/his abilities. She/he wants people to admire what she/he does.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		81	ipsuces	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Being very successful is important to her/him. She/he hopes people will recognise her/his achievements.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
	Hedonism	82	ipgdtim	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. Having a good time is important to her/him. She/he likes to 'spoil' herself/himself.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		83	impfun	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he seeks every chance she/he can to have fun. It is important to her/him to do things that give her/him pleasure.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Continued on next page

Table C1: – continued from previous page

Group	Sub-group	Variable number	Variable name	Literal question	Scale	Scale description	Comment
Human values	Stimulation	84	impdiff	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he likes surprises and is always looking for new things to do. She/he thinks it is important to do lots of different things in life.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all
		85	ipadvnt	Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer. She/he looks for adventures and likes to take risks. She/he wants to have an exciting life.	1-6	6 = Very much like me. 1 = Not like me at all	Changed from originally 1 = Very much like me and 6 = Not like me at all

Note: Table C1 reports the full variable descriptions for the variables used in our study. The scale description column reports the scales we have used and not the original scales. The variable descriptions are taken from the ESS webite: `http://nesstar.ess.nsd.uib.no/webview/index.jsp?v=2&submode=abstract&study=http%3A%2F%2F129.177.90.83%3A80%2Fobj%2FfStudy%2FESS9e01.2&mode=documentation&top=yes`

Figure C1: Histogram of the left-right scale part 1

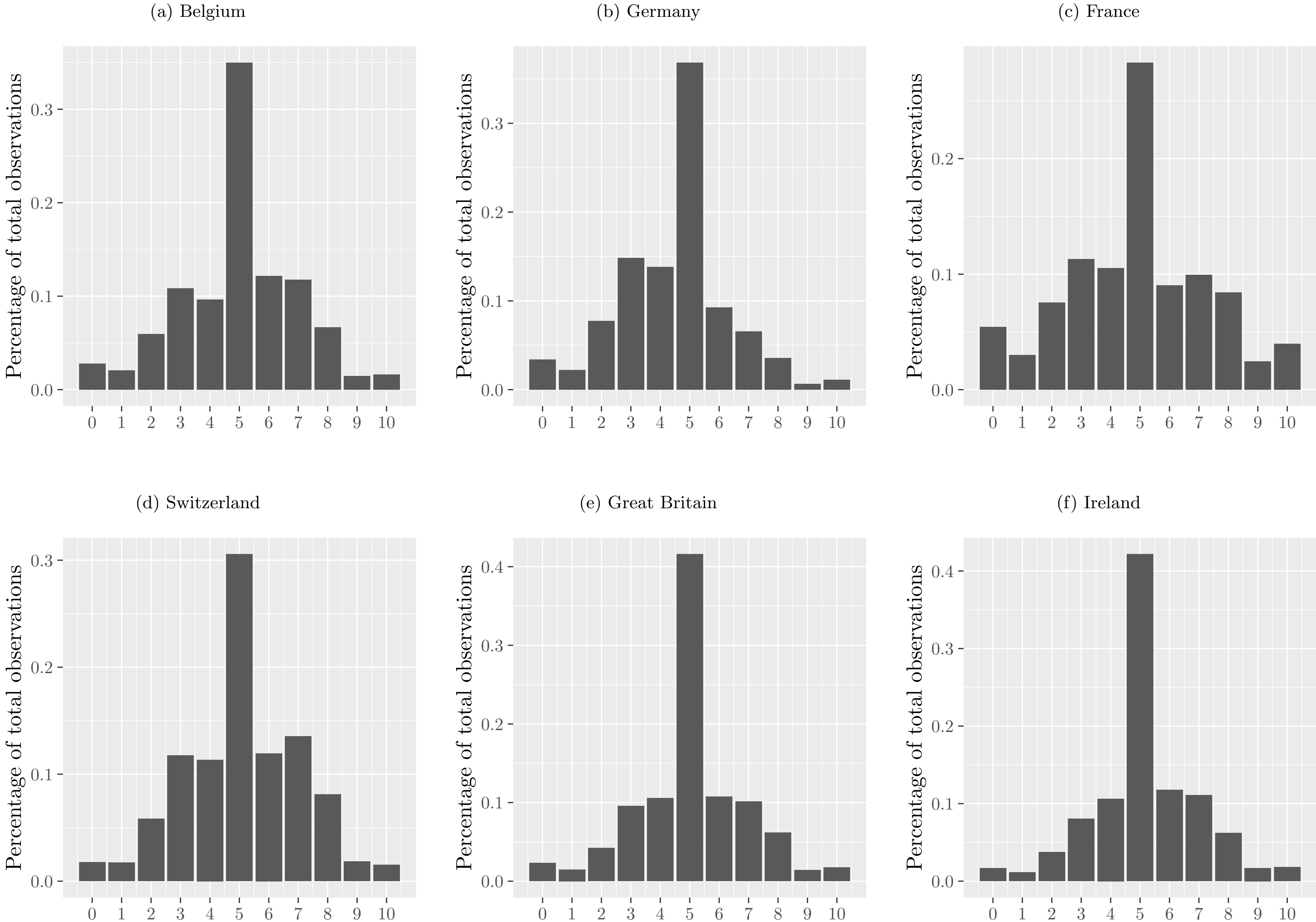
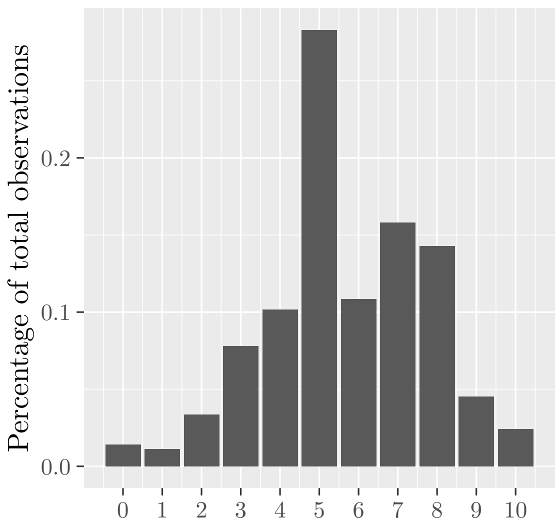
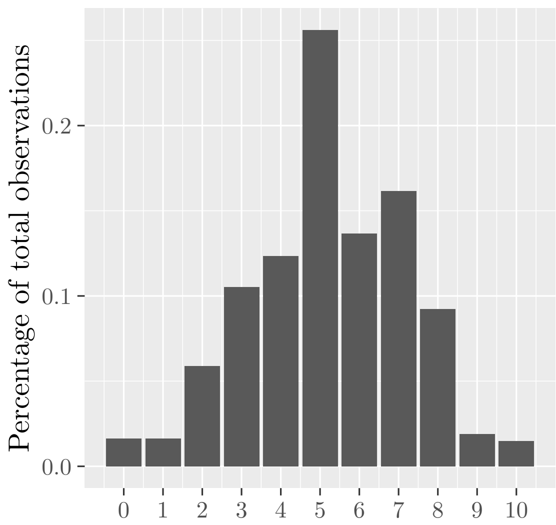


Figure C2: Histogram of the left-right scale part 2

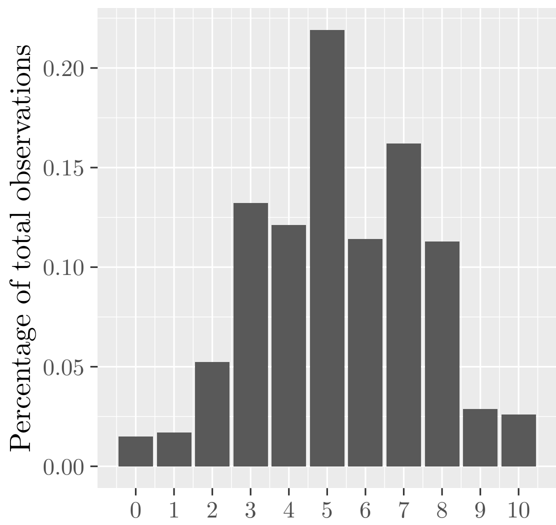
(a) Finland



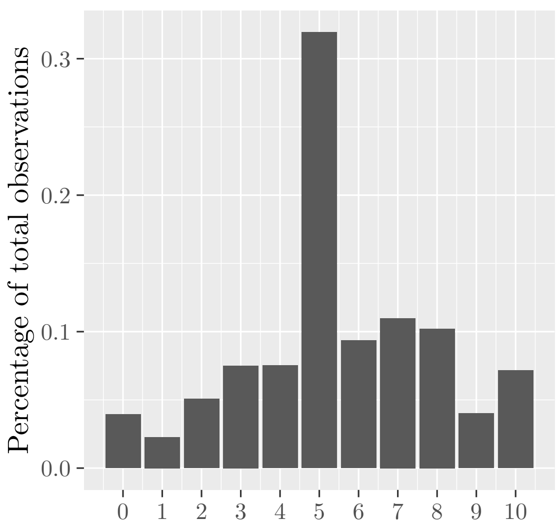
(b) Netherlands



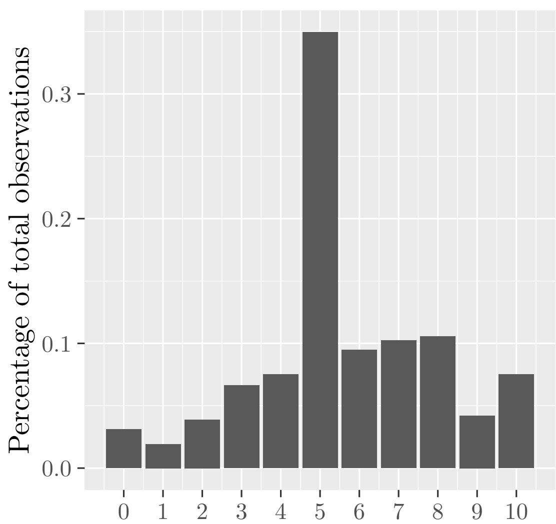
(c) Norway



(d) Hungary



(e) Poland



(f) Slovenia

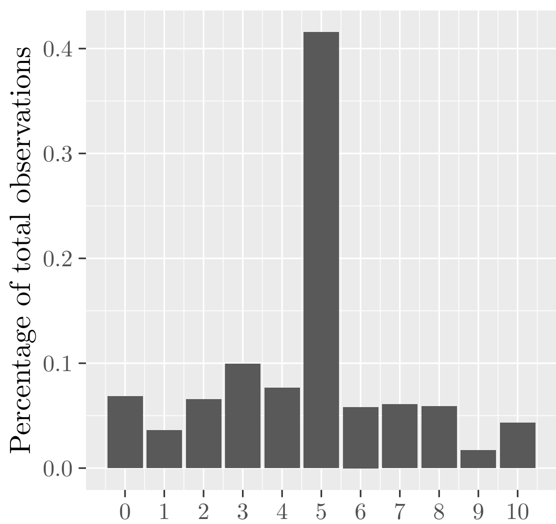


Table C2: Summary statistics: Pooled cross-sectional dataset

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
essround	5.072	2.554	1	3	7	9
dweight	0.998	0.334	0	0.9	1.1	6
ppltrst	5.404	2.285	0	4	7	10
pplfair	6.026	2.084	0	5	8	10
pplhlp	5.266	2.136	0	4	7	10
polintr	2.593	0.854	1	2	3	4
trstprl	4.798	2.395	0	3	7	10
trstlgl	5.562	2.458	0	4	8	10
trstplc	6.472	2.255	0	5	8	10
trstplt	3.954	2.247	0	2	6	10
vote	0.805	0.397	0	1	1	1
contplt	0.180	0.384	0	0	0	1
wrkprty	0.047	0.211	0	0	0	1
badge	0.099	0.299	0	0	0	1
sgnptit	0.305	0.460	0	0	1	1
pbldmn	0.070	0.256	0	0	0	1
bctprd	0.223	0.416	0	0	0	1
clsprty	0.546	0.498	0	0	1	1
lrscale	5.105	2.091	0	4	6	10
stflife	7.275	2.034	0	6	9	10
stfeco	4.996	2.399	0	3	7	10
stfdem	5.506	2.355	0	4	7	10
stfedu	5.882	2.198	0	4	8	10
stfhlth	5.654	2.410	0	4	8	10
gincdif	3.790	1.045	1	3	5	5
freehms	4.043	1.040	1	4	5	5
imsmetn	2.886	0.785	1	2	3	4
imdfetn	2.604	0.827	1	2	3	4
impcntr	2.525	0.851	1	2	3	4
imbgeco	5.133	2.315	0	4	7	10
imueclt	5.866	2.398	0	5	8	10
imwbcnt	5.089	2.161	0	4	7	10
happy	7.576	1.737	0	7	9	10
sclmeet	4.930	1.478	1	4	6	7
sclact	2.782	0.912	1	2	3	5
crmvct	0.188	0.390	0	0	0	1
aesfdrk	3.085	0.759	1	3	4	4
health	3.861	0.862	1	3	4	5
hlthhmp	0.253	0.435	0	0	1	1
rlgdgr	4.494	2.974	0	2	7	10
rlgatnd	2.412	1.485	1	1	3	7
pray	3.159	2.403	1	1	6	7
brncntr	0.948	0.221	0	1	1	1
blgetmg	0.030	0.170	0	0	0	1
facntr	0.916	0.278	0	1	1	1
mocntr	0.919	0.273	0	1	1	1
gndr	0.496	0.500	0	0	1	1
agea	48.707	17.304	18	35	62	102
domicil	2.949	1.188	1	2	4	5
pdwrk	0.576	0.494	0	0	1	1
edctn	0.076	0.264	0	0	0	1
uempla	0.038	0.191	0	0	0	1
uempli	0.018	0.133	0	0	0	1

Continued on next page

Table C2: – continued from previous page

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
dsbld	0.036	0.185	0	0	0	1
rtrd	0.248	0.432	0	0	0	1
hswrk	0.197	0.397	0	0	0	1
uemp3m	0.271	0.444	0	0	1	1
mbtru	0.451	0.498	0	0	1	1
atncrse	0.377	0.485	0	0	1	1
ipcrtiv	4.497	1.179	1	4	5	6
imprich	2.694	1.224	1	2	4	6
ipeqopt	4.964	0.998	1	5	6	6
ipshabt	3.739	1.357	1	3	5	6
impsafe	4.543	1.233	1	4	5	6
impdiff	4.086	1.308	1	3	5	6
ipfrule	3.762	1.393	1	3	5	6
ipudrst	4.720	0.991	1	4	5	6
ipmodst	4.264	1.236	1	3	5	6
ipgdtim	4.122	1.301	1	3	5	6
impfree	4.878	1.057	1	4	6	6
iphlppl	4.848	0.937	1	4	5	6
ipsuces	3.726	1.320	1	3	5	6
ipstrgv	4.574	1.182	1	4	5	6
ipadvnt	3.079	1.393	1	2	4	6
ipbhprp	4.321	1.230	1	4	5	6
iprspot	3.714	1.327	1	3	5	6
iplylfr	5.131	0.845	1	5	6	6
impenv	4.911	1.002	1	4	6	6
imptrad	4.182	1.362	1	3	5	6
impfun	4.046	1.289	1	3	5	6
eduisced1	0.075	0.264	0	0	0	1
eduisced2	0.231	0.421	0	0	0	1
eduisced3	0.325	0.468	0	0	1	1
eduisced6	0.158	0.365	0	0	0	1
eduisced7	0.146	0.353	0	0	0	1
eduisced8	0.053	0.225	0	0	0	1

Note: This table provides the summary statistics for the explanatory variables in the pooled cross-sectional dataset. Each variable contains 134,967 observations. The full variable descriptions can be seen in the variable list in Appendix C Table C1.

Table C3: Summary statistics: Pseudo panel dataset

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
ppltrst	5.067	0.906	2.107	4.406	5.696	7.213
pplfair	5.798	0.742	3.357	5.308	6.294	7.505
pplhlp	4.997	0.849	2.500	4.382	5.692	6.842
polintr	2.561	0.237	1.400	2.408	2.732	3.333
trstprl	4.491	0.999	1.667	3.845	5.200	7.413
trstlgl	5.170	1.050	2.000	4.516	5.897	7.832
trstplc	6.176	0.849	3.000	5.667	6.736	8.857
trstplt	3.660	0.972	0.667	3.000	4.423	6.333
vote	0.811	0.090	0.462	0.750	0.879	1.000
contplt	0.171	0.073	0.000	0.123	0.216	0.667
wrkprty	0.046	0.036	0.000	0.023	0.064	0.333
badge	0.084	0.073	0.000	0.037	0.108	0.444
sgnptit	0.284	0.143	0.000	0.182	0.386	1.000
pbldmn	0.073	0.064	0.000	0.024	0.107	0.600
bctprd	0.204	0.135	0.000	0.086	0.301	0.667
clsprty	0.529	0.134	0.071	0.447	0.623	1.000
lrscale	5.048	0.565	1.500	4.713	5.375	7.477
stflife	7.074	0.755	4.364	6.526	7.670	9.000
stfeco	4.645	1.393	1.690	3.500	5.605	8.204
stfdem	5.184	1.044	1.286	4.448	5.943	7.636
stfedu	5.573	0.952	3.128	4.927	6.176	8.086
stfhlth	5.408	1.277	1.853	4.374	6.320	8.087
gincdif	3.856	0.324	2.483	3.628	4.107	4.750
freehms	3.972	0.472	2.136	3.667	4.333	5.000
imsmetn	2.873	0.243	2.000	2.713	3.022	3.727
imdfetn	2.596	0.286	1.488	2.452	2.779	3.400
impcntr	2.528	0.299	1.310	2.383	2.711	3.333
imbgeco	5.001	0.778	1.500	4.471	5.545	7.667
imueclt	5.722	0.794	2.944	5.168	6.250	9.000
imwbcnt	5.004	0.711	0.500	4.522	5.485	7.400
happy	7.459	0.533	4.844	7.151	7.850	9.333
sclmeet	4.852	0.536	2.876	4.552	5.230	6.269
sclact	2.776	0.189	1.750	2.662	2.895	3.857
crmvct	0.179	0.095	0.000	0.115	0.231	0.727
aesfdrk	3.062	0.226	2.000	2.914	3.212	3.737
health	3.809	0.229	3.000	3.647	3.961	4.413
hlthhmp	0.257	0.080	0.000	0.207	0.307	0.667
rlgdgr	4.567	1.050	1.467	3.905	5.185	7.740
rlgatnd	2.514	0.801	1.250	1.979	2.745	5.109
pray	3.221	1.062	1.000	2.481	3.678	6.543
brncntr	0.950	0.048	0.647	0.929	0.983	1.000
blgetmg	0.029	0.036	0.000	0.000	0.040	0.333
facntr	0.913	0.076	0.532	0.878	0.967	1.000
mocntr	0.918	0.074	0.556	0.889	0.969	1.000
gndr	0.495	0.070	0.200	0.452	0.540	0.818
agea	49.149	3.760	36.333	46.904	51.522	70.750
domicil	2.919	0.555	1.512	2.573	3.152	5.000
pdwrk	0.571	0.096	0.000	0.514	0.628	1.000
edctn	0.063	0.049	0.000	0.030	0.083	0.381
uempla	0.040	0.037	0.000	0.016	0.056	0.320
uempli	0.020	0.026	0.000	0.000	0.029	0.500
dsbld	0.035	0.029	0.000	0.013	0.050	0.200

Continued on next page

Table C3: – continued from previous page

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
rtrd	0.263	0.084	0.000	0.211	0.310	0.750
hswrk	0.200	0.148	0.000	0.081	0.286	0.929
uemp3m	0.288	0.104	0.000	0.213	0.363	0.667
mbtru	0.415	0.177	0.000	0.273	0.537	1.000
atncrse	0.348	0.119	0.000	0.268	0.431	0.889
ipcrtiv	4.491	0.242	3.511	4.346	4.642	5.714
imprich	2.690	0.409	1.400	2.442	2.909	4.667
ipeqopt	4.996	0.221	4.045	4.858	5.142	6.000
ipshabt	3.793	0.435	2.774	3.493	4.048	5.333
impsafe	4.594	0.397	3.333	4.321	4.872	6.000
impdiff	4.114	0.290	3.033	3.938	4.269	5.571
ipfrule	3.771	0.497	2.314	3.419	4.102	5.500
ipudrst	4.711	0.228	3.750	4.576	4.864	5.714
ipmodst	4.364	0.391	3.299	4.138	4.625	5.857
ipgdtim	4.138	0.545	2.333	3.705	4.584	5.500
impfree	4.871	0.295	3.812	4.709	5.069	6.000
iphlppl	4.842	0.242	3.773	4.689	5.016	5.714
ipsuces	3.735	0.515	2.351	3.462	4.070	5.333
ipstrgv	4.622	0.337	3.422	4.383	4.869	6.000
ipadvnt	3.027	0.336	1.000	2.810	3.239	4.412
ipbhprp	4.388	0.311	3.000	4.198	4.593	5.500
iprspot	3.777	0.444	2.536	3.500	4.032	5.385
iplylfr	5.107	0.225	3.667	4.969	5.262	6.000
impenv	4.936	0.262	3.333	4.784	5.083	6.000
imptrad	4.239	0.408	2.800	3.981	4.500	5.750
impfun	4.010	0.452	2.667	3.708	4.361	5.333
eduisced1	0.087	0.065	0.000	0.036	0.126	0.400
eduisced2	0.239	0.113	0.000	0.165	0.291	0.697
eduisced3	0.320	0.087	0.000	0.258	0.379	0.600
eduisced6	0.151	0.061	0.000	0.111	0.190	0.500
eduisced7	0.139	0.065	0.000	0.095	0.178	0.400
eduisced8	0.048	0.041	0.000	0.017	0.070	0.310

Note: This table provides the summary statistics for the explanatory variables in the pseudo panel dataset. Each variable contains 1,197 observations. The full variable descriptions can be seen in the variable list in Appendix C Table C1.

Table C4: Summary statistics of the left-right scale for the ISCED 0 education category

Welfare regime	Country	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Conservative	Belgium	211	4.374	2.108	0	3	5	10
	Germany	36	4.389	2.115	0	3	5.2	8
	France	345	5.386	2.439	0	4	7	10
Liberal	Switzerland	84	5.310	2.053	0	4	7	10
	Great Britain	88	5.125	1.818	0	5	6	10
	Ireland	36	5.556	2.131	2	4	7	10
Social democratic	Finland	96	5.323	2.324	0	4	7	10
	Netherlands	139	5.424	2.255	0	4	7	10
	Norway	231	5.615	2.133	0	4	7	10
Post-communist	Hungary	71	4.746	2.528	0	3	6	10
	Poland	40	5.750	2.478	0	5	7	10
	Slovenia	143	5.343	2.438	0	5	7	10

Note: This table provides the mean and standard deviation of the Left-Right scale for the individuals in the ISCED 0 education category for each country in our sample.

Table C5: Data cleaning

Statistic	N	Mean	St. Dev.	Min	Max
dscrrce	206,720	0.011	0.104	0	1
dscrntn	206,720	0.010	0.100	0	1
dscrrlg	206,720	0.011	0.107	0	1
dscrlng	206,720	0.004	0.059	0	1
dscretn	206,720	0.007	0.084	0	1
dscrage	206,720	0.007	0.086	0	1
dscrgnd	206,720	0.007	0.085	0	1
dscrsex	206,720	0.005	0.067	0	1
dscrdsb	206,720	0.006	0.076	0	1
dscroth	206,720	0.021	0.142	0	1
dscrdk	206,720	0.001	0.025	0	1
dscrref	206,720	0.007	0.083	0	1
dscrnap	206,720	0.925	0.264	0	1
dscrna	206,720	0.001	0.025	0	1
cmsrv	206,720	0.002	0.045	0	1
pdjobev	93,030	1.165	0.371	1.000	2.000
rlgdnm	112,570	1.670	1.231	1.000	8.000
wrkorg	196,663	1.817	0.386	1.000	2.000
trstep	189,042	4.493	2.371	0.000	10.000
trstun	190,919	5.408	2.388	0.000	10.000
jbspv	189,842	1.674	0.469	1.000	2.000
mnactic	205,748	3.222	2.632	1.000	9.000

Note: This table provides the summary statistics for the variables we have deleted due to no variance or number of missing observation above 10.000.

Appendix D: Method

Under the homoscedasticity assumption the asymptotic variance of the OLS estimators, $\hat{\boldsymbol{\beta}}$, is given as (White, 1980):

$$Avar(\hat{\boldsymbol{\beta}}) = \sigma^2(\boldsymbol{X}'\boldsymbol{X})^{-1} \tag{23}$$

Where σ^2 is the unbiased variance of y. If heteroskedasticity is present, a heteroskedasticity-robust variance matrix estimator of $\hat{\boldsymbol{\beta}}$ can be written as:

$$Avar(\hat{\boldsymbol{\beta}}) = (\boldsymbol{X}'\boldsymbol{X})^{-1}\boldsymbol{X}'E(\boldsymbol{u}\boldsymbol{u}')\boldsymbol{X}(\boldsymbol{X}'\boldsymbol{X})^{-1} \tag{24}$$

Note that the main difference between Eq. (23) and Eq. (24) is that the unbiased variance is known in Eq. (23). The unbiased variance can be written as:

$$E(uu') = \sigma^2 \begin{bmatrix} \sigma_1^2/\sigma^2 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \sigma_n^2/\sigma^2 \end{bmatrix} = \sigma^2\boldsymbol{\Sigma} = \boldsymbol{\Omega} \tag{25}$$

Under homoskedasticity $\Sigma = I$. However, when the variances of the observations are different from the unbiased variance then $\Sigma \neq I$, and the variance matrix in Eq. (24) needs to be estimated. The method to find the estimated covariance matrix is to first estimate an OLS model, second, obtain residuals and third, estimate covariance matrix ($\hat{\boldsymbol{\Omega}}$), where:

$$\hat{\boldsymbol{\Omega}} = \begin{bmatrix} \hat{u}_1^2 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & \hat{u}_n^2 \end{bmatrix} \tag{26}$$

By applying this estimated covariance matrix, we can estimate the variance of the OLS estimators.

$$Avar(\hat{\boldsymbol{\beta}}) = (\boldsymbol{X}'\boldsymbol{X})^{-1}\boldsymbol{X}'\hat{\boldsymbol{\Omega}}\boldsymbol{X}(\boldsymbol{X}'\boldsymbol{X})^{-1} \tag{27}$$

This is the covariance matrix proposed by White (1980).

Arellano (1987) has developed an extension of White's heteroskedasticity-robust covariance matrix, which clusters the observations to account for autocorrelation in individuals. This extention is build upon fixed effect and uses the estiamtes from Eq. (7). The Arellano robust standard error estimator is defined as:

$$Avar(\hat{\boldsymbol{\beta}})_{White-Arelleano} = (\ddot{\boldsymbol{X}}'\ddot{\boldsymbol{X}})^{-1}\sum_{i=1}^{n}\ddot{\boldsymbol{X}}_{\boldsymbol{i}}'\hat{\ddot{\boldsymbol{u}}}'\hat{\ddot{\boldsymbol{u}}}_{\boldsymbol{i}}\ddot{\boldsymbol{X}}_i(\ddot{\boldsymbol{X}}'\ddot{\boldsymbol{X}})^{-1} \tag{28}$$

The difference between the White estimator and the Arellano estimator is that instead of calculating the estimated coefficient as a stacked regression of y on x as in White, the Arellano estimator estimates the coefficients in a system of T equations with cross-equation linear restrictions.

$$\begin{gathered} \ddot{y}_{i1} = \ddot{\boldsymbol{x}}_{i1}'\boldsymbol{\beta} + \ddot{u}_{i1} \\ \vdots \\ \ddot{y}_{iT} = \ddot{\boldsymbol{x}}_{iT}'\boldsymbol{\beta} + \ddot{u}_{iT} \end{gathered} \tag{29}$$

The $\ddot{y}_{i1}$, ... , $\ddot{y}_{iT}$ and $\ddot{x}_{i1}$, ... , $\ddot{x}_{iT}$ are treated as ‘different’ variables on which n observations are available. This results in the same estimated coefficients but with robust standard errors (Arellano, 1987).

Appendix E: Results

Table E1: Full WFE regression and robustness checks

Variable	WFE elastic net	Robustness check: Lasso	Robustness check: party-based l/r-scale	Robustness check: PWLS
Constant				5.538***
				(0.092)
ppltrst	−0.035		−0.052	−0.023***
	(0.037)		(0.045)	(0.003)
pplfair	−0.038	−0.057	−0.036	−0.002
	(0.039)	(0.037)	(0.048)	(0.004)
pplhlp			0.003	0.013***
			(0.047)	(0.003)
polintr	0.084		0.175	0.058***
	(0.089)		(0.113)	(0.008)
trstprl	−0.086**		−0.009	0.018***
	(0.034)		(0.046)	(0.004)
trstlgl			0.016	−0.029***
			(0.050)	(0.004)
trstplc	0.044	0.024	−0.088*	0.027***
	(0.031)	(0.033)	(0.045)	(0.004)
vote	−0.208			0.079***
	(0.201)			(0.015)
trstplt			0.017	0.004
			(0.049)	(0.004)
contplt	0.013		−0.197	0.063***
	(0.210)		(0.238)	(0.015)
wrkprty	0.488			−0.117***
	(0.385)			(0.029)
badge	0.337			−0.061***
	(0.259)			(0.020)
sgnptit	−0.567***	−0.529***	0.158	−0.073***
	(0.171)	(0.154)	(0.178)	(0.013)
pbldmn	−0.266	−0.274	−0.615**	−0.411***
	(0.267)	(0.255)	(0.274)	(0.023)
bctprd	−0.151		−0.552**	−0.152***
	(0.177)		(0.218)	(0.014)
clsprty			−0.261	0.061***
			(0.159)	(0.012)
stflife	0.066	0.073	0.118**	0.053***
	(0.053)	(0.062)	(0.059)	(0.005)
stfeco			−0.035	0.035***
			(0.026)	(0.003)
stfdem	0.152***	0.088***	0.044	0.051***
	(0.036)	(0.026)	(0.041)	(0.004)
stfedu	−0.039		−0.085**	−0.003

Continued on next page

Table E1: – continued from previous page

Variable	WFE elastic net	Robustness check: Lasso	Robustness check: lrscale pgov	Robustness check: PWLS
	(0.029)		(0.039)	(0.004)
stfhlth	0.010		0.020	0.009***
	(0.029)		(0.035)	(0.003)
gincdif	−0.215***	−0.232***	−0.380***	−0.300***
	(0.058)	(0.064)	(0.071)	(0.006)
freehms	−0.199***		−0.071	−0.096***
	(0.059)		(0.075)	(0.007)
imsmetn				0.119***
				(0.011)
imdfetn	−0.385***	−0.357***	0.020	−0.171***
	(0.132)	(0.134)	(0.152)	(0.013)
impcntr	0.069	0.054	−0.441***	−0.171***
	(0.142)	(0.138)	(0.166)	(0.011)
imbgeco	−0.039		0.162***	0.011***
	(0.039)		(0.047)	(0.004)
imueclt	−0.001		−0.0004	−0.065***
	(0.042)		(0.052)	(0.004)
imwbcnt	0.108**		−0.034	−0.029***
	(0.051)		(0.054)	(0.004)
happy	0.040	0.049	0.106	0.002
	(0.053)	(0.061)	(0.068)	(0.005)
sclmeet	0.133***	0.146***	0.074	−0.002
	(0.050)	(0.048)	(0.069)	(0.004)
sclact	0.031		−0.217*	−0.007
	(0.086)		(0.111)	(0.007)
crmvct	−0.207	−0.347	−0.690***	0.103***
	(0.207)	(0.217)	(0.252)	(0.014)
aesfdrk	0.029		0.167	−0.023***
	(0.103)		(0.118)	(0.009)
hlthhmp	−0.336*	−0.418**		
	(0.189)	(0.200)		
health			0.238**	0.038***
			(0.120)	(0.008)
rlgdgr	0.063*	0.077**	0.095**	0.055***
	(0.032)	(0.033)	(0.040)	(0.003)
rlgatnd	0.036		0.026	0.080***
	(0.065)		(0.084)	(0.006)
pray	0.158***	0.142***	0.077	0.017***
	(0.049)	(0.050)	(0.056)	(0.003)
brncntr	0.611*		0.604	0.044
	(0.357)		(0.453)	(0.032)
blgetmg			−0.899	−0.240***
			(0.563)	(0.037)

Continued on next page

Table E1: – continued from previous page

Variable	WFE elastic net	Robustness check: Lasso	Robustness check: lrscale pgov	Robustness check: PWLS
facntr				0.224***
				(0.026)
mocntr	0.350		0.509	0.085***
	(0.248)		(0.343)	(0.027)
gndr	0.515***	0.593***	0.310	0.159***
	(0.158)	(0.167)	(0.196)	(0.012)
agea			−0.012	0.001**
			(0.008)	(0.001)
domicil	−0.079*	−0.103**	−0.122**	−0.040***
	(0.044)	(0.041)	(0.057)	(0.005)
pdwrk	0.366*		0.021	0.036**
	(0.196)		(0.236)	(0.015)
edctn	0.502		−0.408	−0.158***
	(0.359)		(0.480)	(0.024)
uempla	−0.407		−1.542***	−0.042
	(0.391)		(0.551)	(0.033)
uempli	−0.657	−0.686		0.022
	(0.586)	(0.588)		(0.043)
uemp3m	0.318*	0.305*		−0.073***
	(0.186)	(0.179)		(0.013)
dsbld			−0.817	
			(0.578)	
hswrk			0.191	
			(0.145)	
mbtru	−0.245	−0.208	−0.576***	−0.290***
	(0.159)	(0.150)	(0.161)	(0.012)
atncrse	−0.442**	−0.297	0.178	0.025*
	(0.193)	(0.200)	(0.200)	(0.013)
ipcrtiv				0.010*
				(0.005)
imprich	−0.090	−0.191**	−0.023	0.083***
	(0.077)	(0.075)	(0.075)	(0.006)
ipeqopt	−0.365***	−0.250***	−0.161	−0.160***
	(0.089)	(0.084)	(0.107)	(0.006)
ipshabt	−0.103		−0.175**	−0.020***
	(0.066)		(0.077)	(0.005)
impsafe				0.028***
				(0.006)
impdiff			−0.028	0.023***
			(0.086)	(0.005)
ipfrule				0.011**
				(0.005)

Continued on next page

Table E1: – continued from previous page

Variable	WFE elastic net	Robustness check: Lasso	Robustness check: lrscale pgov	Robustness check: PWLS
ipudrst	0.178**		0.231**	−0.027***
	(0.081)		(0.098)	(0.007)
ipmodst	0.041	0.122		−0.011**
	(0.071)	(0.076)		(0.005)
ipgdtim			−0.223***	−0.016***
			(0.077)	(0.005)
impfree	0.117		0.089	0.045***
	(0.079)		(0.078)	(0.006)
iphlppl				−0.032***
				(0.007)
ipsuces			−0.084	−0.004
			(0.081)	(0.006)
ipstrgv	0.093		0.047	0.087***
	(0.071)		(0.078)	(0.006)
ipadvnt	−0.057			0.016***
	(0.059)			(0.005)
ipbhprp			0.034	0.026***
			(0.077)	(0.006)
iprspot	−0.079		0.052	−0.024***
	(0.056)		(0.064)	(0.005)
iplylfr	0.192*			0.048***
	(0.111)			(0.008)
impenv	−0.274***	−0.222***	−0.233**	−0.104***
	(0.076)	(0.083)	(0.093)	(0.007)
imptrad	0.152**	0.162**	−0.037	0.090***
	(0.063)	(0.065)	(0.073)	(0.005)
impfun	0.092	0.153**	0.100	
	(0.063)	(0.062)	(0.074)	
eduisced1	0.206	−0.510*	0.200	−0.155***
	(0.433)	(0.305)	(0.376)	(0.026)
eduisced2	0.907***		1.036***	
	(0.345)		(0.237)	
eduisced3	0.292		0.518**	0.039**
	(0.336)		(0.254)	(0.016)
eduisced6	1.066***	0.467*	0.313	0.019
	(0.375)	(0.256)	(0.285)	(0.019)
eduisced7	0.869**			−0.032
	(0.383)			(0.020)
eduisced8	0.134		−0.274	−0.088***
	(0.469)		(0.464)	(0.026)
Round2				−0.029
				(0.024)
Round3				0.015

Continued on next page

Table E1: – continued from previous page

Variable	WFE elastic net	Robustness check: Lasso	Robustness check: lrscale pgov	Robustness check: PWLS
				(0.024)
Round4				0.120***
				(0.023)
Round5				0.145***
				(0.023)
Round6				0.172***
				(0.023)
Round7				0.130***
				(0.023)
Round8				0.135***
				(0.023)
Round9				0.115***
				(0.024)
CH				−0.127***
				(0.028)
DE				−0.398***
				(0.024)
FI				0.727***
				(0.027)
FR				0.328***
				(0.029)
GB				−0.015
				(0.026)
HU				0.333***
				(0.038)
IE				0.028
				(0.030)
NL				0.095***
				(0.026)
NO				0.347***
				(0.028)
PL				0.319***
				(0.037)
SI				−0.168***
				(0.035)
Observations	1,197	1,197	1,197	134,967
Variables	62	29	66	96
α	0.04	1	0.01	0.95
λ	0.162	0.016	0.747	0.001
Adjusted R^2	0.683	0.666	0.674	0.196

*p<0.1; **p<0.05; ***p<0.01

Note: This table provides the full WFE regression results as described in section 5.1. Further, column 2 provides the lasso results, column 3 provides the party-based left-right scale regression using the same elastic net variables as in column 1. Column 4 provides the PWLS regression on the same dataset and including time and country dummies

Table E2: Full PWLS results for each country

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ppltrst	−0.009	−0.011	−0.004	−0.049***	−0.019*	0.001	−0.022*	−0.033***	−0.034**	−0.005	−0.021	−0.012
	(0.011)	(0.008)	(0.012)	(0.010)	(0.010)	(0.010)	(0.012)	(0.012)	(0.013)	(0.017)	(0.013)	(0.015)
pplfair	0.023**	−0.012	−0.006		−0.010	−0.008	0.013	0.010	−0.028**	−0.014	0.014	−0.003
	(0.012)	(0.008)	(0.013)		(0.011)	(0.013)	(0.013)	(0.014)	(0.014)	(0.017)	(0.014)	(0.016)
pplhlp	0.032***	−0.006			0.022*	−0.006	0.005	0.011	0.006		0.023*	0.010
	(0.010)	(0.008)			(0.011)	(0.012)	(0.010)	(0.011)	(0.011)		(0.013)	(0.015)
polintr	0.093***	−0.012	0.113***	0.037	0.084***	0.034	0.028	0.061**	0.036	0.074*		0.035
	(0.024)	(0.019)	(0.028)	(0.027)	(0.022)	(0.022)	(0.025)	(0.028)	(0.028)	(0.040)		(0.038)
trstprl	0.005	0.025***	0.011	0.034**	0.023**	0.019	0.015	0.040**		0.066***	0.039**	−0.024
	(0.013)	(0.009)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)	(0.016)		(0.020)	(0.017)	(0.018)
trstlgl	−0.023**	−0.028***	−0.073***	−0.049***		0.001	−0.023*	−0.076***	0.006	0.030	−0.034**	−0.076***
	(0.011)	(0.008)	(0.013)	(0.014)		(0.011)	(0.012)	(0.013)	(0.013)	(0.020)	(0.017)	(0.017)
trstplc	0.027**	0.039***	0.114***	0.061***	0.024**	0.029***	0.014	0.025*	0.038***	−0.079***	−0.040***	−0.010
	(0.011)	(0.009)	(0.013)	(0.014)	(0.009)	(0.010)	(0.014)	(0.014)	(0.013)	(0.017)	(0.014)	(0.015)
trstplt	−0.005	−0.014	0.014	0.009	0.007	0.013	0.007	0.022	−0.022*	0.005	0.019	0.071***
	(0.013)	(0.010)	(0.015)	(0.014)	(0.012)	(0.012)	(0.013)	(0.016)	(0.012)	(0.020)	(0.018)	(0.020)
vote	0.077		−0.086*	0.076*	0.060	0.093*	0.088**	0.062	0.207***	0.078	0.144***	−0.151**
	(0.062)		(0.049)	(0.046)	(0.041)	(0.050)	(0.044)	(0.051)	(0.054)	(0.069)	(0.055)	(0.065)
contplt	0.068	0.033	0.185***	0.144***	−0.043	0.055	0.042	0.072	0.083*			−0.176**
	(0.048)	(0.036)	(0.061)	(0.051)	(0.042)	(0.047)	(0.040)	(0.046)	(0.044)			(0.080)
wrkprty	−0.199**	0.140**	−0.222*	0.017	−0.165	0.061	−0.248***	−0.125	−0.160**	−0.444	−0.106	0.305**
	(0.095)	(0.065)	(0.126)	(0.072)	(0.109)	(0.100)	(0.093)	(0.089)	(0.070)	(0.294)	(0.158)	(0.150)
badge	−0.150**	−0.245***	−0.061	−0.234***	−0.214***	−0.121*	−0.019	−0.174**		0.506**	0.096	−0.186
	(0.071)	(0.060)	(0.068)	(0.072)	(0.065)	(0.073)	(0.043)	(0.086)		(0.218)	(0.108)	(0.182)
sgnptit	−0.028	−0.114***	−0.168***	−0.046	0.057*	−0.045	−0.090**	−0.161***	−0.031	0.163	0.190**	0.109
	(0.042)	(0.029)	(0.048)	(0.040)	(0.034)	(0.047)	(0.036)	(0.041)	(0.037)	(0.140)	(0.080)	(0.082)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pbldmn	−0.422***	−0.309***	−0.581***	−0.315***	−0.226***	−0.134**	−0.776***	−0.403***	−0.549***	0.655***		−0.213
	(0.072)	(0.045)	(0.063)	(0.081)	(0.081)	(0.067)	(0.114)	(0.099)	(0.061)	(0.186)		(0.152)
bctprd	−0.265***	−0.057**	−0.086*	−0.184***		−0.284***	−0.172***	−0.335***	−0.215***	0.161	0.332***	
	(0.057)	(0.029)	(0.048)	(0.042)		(0.057)	(0.036)	(0.053)	(0.043)	(0.156)	(0.106)	
clsprty	−0.010	−0.073***	0.061	0.099**		0.065*	0.040	0.016		0.523***	0.510***	
	(0.035)	(0.028)	(0.043)	(0.039)		(0.039)	(0.032)	(0.035)		(0.063)	(0.060)	
stflife	0.042***	0.036***	0.069***	0.031*	0.047***	0.054***	0.116***	0.079***	0.041**	0.012	0.068***	0.056***
	(0.016)	(0.010)	(0.014)	(0.017)	(0.014)	(0.014)	(0.018)	(0.020)	(0.017)	(0.016)	(0.017)	(0.016)
stfeco	0.067***	0.034***	0.078***	0.031**	0.051***	0.018	0.044***	0.051***	0.034***	0.035*	0.010	0.022
	(0.012)	(0.008)	(0.014)	(0.012)	(0.011)	(0.011)	(0.011)	(0.013)	(0.011)	(0.021)	(0.016)	(0.018)
stfdem	−0.011	0.020**	0.073***	0.026**	0.068***	0.069***	0.090***	0.022	0.025**	0.072***	0.108***	0.068***
	(0.012)	(0.008)	(0.012)	(0.013)	(0.010)	(0.011)	(0.012)	(0.013)	(0.012)	(0.018)	(0.015)	(0.018)
stfedu	−0.009	0.025***	−0.051***	−0.015	−0.025**	0.012	0.024*	0.015		0.007	0.011	
	(0.011)	(0.008)	(0.012)	(0.011)	(0.010)	(0.011)	(0.014)	(0.013)		(0.016)	(0.013)	
stfhlth	0.055***	0.017**	0.052***	0.015	−0.018**	0.015	0.002	0.020*	−0.051***			0.007
	(0.014)	(0.007)	(0.012)	(0.011)	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)			(0.014)
gincdif	−0.188***	−0.204***	−0.340***	−0.304***	−0.296***	−0.114***	−0.447***	−0.425***	−0.535***	−0.120***	−0.042	−0.037
	(0.018)	(0.014)	(0.020)	(0.019)	(0.017)	(0.019)	(0.017)	(0.017)	(0.019)	(0.035)	(0.027)	(0.033)
freehms	0.031	−0.081***	−0.075***	−0.130***	−0.045**	−0.074***	−0.110***	−0.119***	−0.072***	−0.154***	−0.144***	−0.166***
	(0.021)	(0.017)	(0.024)	(0.024)	(0.023)	(0.025)	(0.017)	(0.028)	(0.023)	(0.026)	(0.024)	(0.031)
imsmetn	0.125***	0.066***	−0.007	−0.010	0.056	0.053	0.120***		0.108***	0.275***	0.081	−0.046
	(0.033)	(0.026)	(0.047)	(0.040)	(0.037)	(0.037)	(0.032)		(0.036)	(0.035)	(0.053)	(0.057)
imdfetn	−0.212***	−0.200***	−0.164***	−0.207***	−0.049	−0.097**	−0.128***	−0.148***	−0.110**	−0.141***	−0.116**	−0.053
	(0.039)	(0.030)	(0.051)	(0.044)	(0.043)	(0.044)	(0.037)	(0.036)	(0.049)	(0.053)	(0.058)	(0.059)
impcntr	−0.092***	−0.111***	−0.175***	−0.229***	−0.140***	−0.060	−0.244***	−0.143***	−0.235***	−0.196***	−0.067	−0.145***
	(0.033)	(0.026)	(0.041)	(0.040)	(0.033)	(0.037)	(0.033)	(0.033)	(0.043)	(0.051)	(0.053)	(0.051)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imbgeco	-0.004		-0.001	0.030^{**}	0.012	0.016	0.048^{***}	-0.017		-0.038^{*}	0.023	0.033^{*}
	(0.011)		(0.015)	(0.012)	(0.011)	(0.013)	(0.011)	(0.013)		(0.020)	(0.015)	(0.017)
imueclt	-0.060^{***}	-0.065^{***}	-0.098^{***}	-0.083^{***}	-0.040^{***}	-0.006	-0.017	-0.090^{***}	-0.070^{***}	-0.023	-0.027^{*}	-0.046^{**}
	(0.012)	(0.009)	(0.014)	(0.012)	(0.011)	(0.014)	(0.012)	(0.012)	(0.011)	(0.018)	(0.015)	(0.018)
imwbcnt	-0.035^{***}	-0.038^{***}	-0.091^{***}	-0.091^{***}	-0.041^{***}	0.005		-0.040^{***}	-0.051^{***}	-0.002		-0.066^{***}
	(0.012)	(0.010)	(0.017)	(0.014)	(0.013)	(0.016)		(0.013)	(0.013)	(0.022)		(0.021)
happy	-0.013	-0.010	-0.025	0.044^{**}	-0.017	0.004	-0.035^{*}	0.011	0.078^{***}		-0.032	
	(0.018)	(0.012)	(0.018)	(0.019)	(0.015)	(0.015)	(0.019)	(0.022)	(0.018)		(0.020)	
sclmeet	-0.031^{**}	0.045^{***}	-0.016	0.021	-0.009	-0.009	0.010	-0.033^{**}	-0.012	0.015	-0.011	0.012
	(0.014)	(0.011)	(0.016)	(0.017)	(0.012)	(0.013)	(0.013)	(0.015)	(0.015)	(0.023)	(0.020)	(0.021)
sclact	-0.023	-0.051^{***}	0.011	-0.022	0.038^{*}	0.034	0.009	0.008	-0.032	0.008	-0.044	-0.046
	(0.019)	(0.017)	(0.029)	(0.023)	(0.020)	(0.024)	(0.019)	(0.021)	(0.026)	(0.040)	(0.031)	(0.034)
crmvct	0.176^{***}	0.117^{***}	0.131^{***}	0.128^{***}	0.056	0.045	0.047	0.118^{***}	0.097^{**}	0.249^{**}		0.092
	(0.041)	(0.042)	(0.048)	(0.049)	(0.040)	(0.049)	(0.035)	(0.045)	(0.043)	(0.100)		(0.081)
aesfdrk	-0.080^{***}	0.012	-0.073^{***}	-0.067^{**}		-0.027	0.024	0.042	-0.027	0.168^{***}	0.021	0.030
	(0.029)	(0.020)	(0.027)	(0.030)		(0.025)	(0.028)	(0.030)	(0.030)	(0.046)	(0.040)	(0.048)
health	0.067^{**}	0.019	0.020		0.047^{**}	0.049^{*}	0.078^{***}	0.041	0.046^{*}	0.058		-0.020
	(0.029)	(0.020)	(0.030)		(0.023)	(0.028)	(0.026)	(0.030)	(0.026)	(0.042)		(0.040)
hlthhmp	0.063	-0.045	0.037		-0.011	0.056	0.010	0.052	0.093^{*}		-0.050	0.024
	(0.051)	(0.035)	(0.057)		(0.046)	(0.059)	(0.040)	(0.047)	(0.049)		(0.069)	(0.072)
rlgdgr	0.047^{***}	0.054^{***}	0.080^{***}	0.035^{***}	0.029^{***}	0.040^{***}	0.053^{***}	0.025^{***}	0.040^{***}	0.069^{***}	0.135^{***}	0.086^{***}
	(0.008)	(0.007)	(0.010)	(0.008)	(0.008)	(0.011)	(0.009)	(0.008)	(0.010)	(0.015)	(0.017)	(0.013)
rlgatnd	0.077^{***}	0.043^{***}	0.117^{***}	0.001	0.009	0.043^{***}	0.076^{***}	0.098^{***}	0.025	0.095^{***}	0.150^{***}	0.339^{***}
	(0.017)	(0.014)	(0.022)	(0.018)	(0.015)	(0.016)	(0.019)	(0.016)	(0.020)	(0.031)	(0.031)	(0.028)
pray	-0.001	0.015^{*}	0.015			0.022^{*}	0.025^{***}	0.026^{***}	0.026^{**}	0.013	0.032^{*}	0.050^{***}
	(0.011)	(0.009)	(0.014)			(0.011)	(0.010)	(0.010)	(0.012)	(0.020)	(0.018)	(0.018)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
brncntr	0.120	0.007	0.161	0.037	−0.101	0.079	0.141			−0.340		0.393***
	(0.095)	(0.077)	(0.108)	(0.090)	(0.077)	(0.085)	(0.127)			(0.296)		(0.129)
blgetmg	−0.143	−0.310***	−0.238*	−0.302***	−0.149*	0.030	0.098	−0.367***	−0.270**	−0.214	−0.162	0.062
	(0.127)	(0.090)	(0.130)	(0.110)	(0.086)	(0.176)	(0.149)	(0.126)	(0.107)	(0.154)	(0.159)	(0.197)
facntr	0.192**	0.195***	0.276***	0.197***	0.059	0.043	0.331**	0.313***	0.207**	−0.138	0.071	0.173
	(0.077)	(0.057)	(0.078)	(0.067)	(0.061)	(0.097)	(0.145)	(0.093)	(0.090)	(0.198)	(0.178)	(0.115)
mocntr	0.156**	0.047	0.075	−0.074		0.076	−0.114	0.066		0.395	0.081	0.033
	(0.077)	(0.062)	(0.085)	(0.063)		(0.093)	(0.142)	(0.084)		(0.258)	(0.181)	(0.122)
gndr	0.245***	0.167***	0.104**	0.328***	0.030	0.014	−0.011	0.223***	0.187***	0.071	0.152***	0.243***
	(0.038)	(0.030)	(0.046)	(0.042)	(0.036)	(0.042)	(0.038)	(0.039)	(0.042)	(0.061)	(0.055)	(0.062)
agea	0.0003	0.004***	0.004	0.003**	0.008***	0.007***	0.017***	0.0002	0.007***	−0.019***	−0.005*	−0.009***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
domicil	−0.042**	−0.035***	−0.081***	−0.083***	−0.085***	−0.020	−0.042***	−0.073***	0.058***		0.058***	−0.030
	(0.016)	(0.012)	(0.018)	(0.020)	(0.018)	(0.014)	(0.013)	(0.014)	(0.014)		(0.022)	(0.025)
pdwrk	0.109*	0.067*	−0.244**	0.048		−0.040	0.155***	−0.035	0.064	0.115	0.075	−0.089
	(0.060)	(0.040)	(0.104)	(0.050)		(0.069)	(0.047)	(0.054)	(0.067)	(0.103)	(0.074)	(0.084)
edctn	−0.078	−0.173***	−0.300**	−0.247***	−0.186**	−0.119	−0.013	−0.207***	−0.329***	−0.365***	0.098	−0.132
	(0.074)	(0.056)	(0.128)	(0.089)	(0.084)	(0.098)	(0.069)	(0.074)	(0.072)	(0.132)	(0.087)	(0.086)
uempla	−0.191*		−0.316**	−0.160	−0.048	−0.055	0.150		0.157	0.055	0.093	−0.177
	(0.114)		(0.141)	(0.187)	(0.105)	(0.098)	(0.092)		(0.136)	(0.170)	(0.123)	(0.145)
uempli	0.007	0.196*	−0.343**	0.263	0.206	−0.036	0.081	0.216	−0.417**	0.207		
	(0.124)	(0.118)	(0.166)	(0.262)	(0.144)	(0.152)	(0.117)	(0.145)	(0.165)	(0.212)		
dsbld	0.082	0.106	−0.098	−0.109	−0.063	−0.065	0.252*	−0.171*	−0.109	0.406**	−0.199	0.177
	(0.105)	(0.079)	(0.180)	(0.137)	(0.087)	(0.128)	(0.147)	(0.094)	(0.104)	(0.180)	(0.202)	(0.268)
rtrd	0.110	0.102*	−0.282**		0.034	−0.103		0.056	0.053	−0.201	−0.077	−0.183
	(0.078)	(0.055)	(0.122)		(0.054)	(0.083)		(0.069)	(0.089)	(0.137)	(0.108)	(0.119)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
hswrk	0.052	0.096^{***}	-0.069		-0.039	-0.085	0.047	-0.019	0.034	-0.030	-0.025	-0.029
	(0.042)	(0.031)	(0.107)		(0.045)	(0.060)	(0.086)	(0.038)	(0.042)	(0.078)	(0.071)	(0.060)
uemp3m	-0.040	-0.097^{***}	-0.089^{**}	-0.130^{**}	-0.010	-0.142^{***}	-0.256^{***}	-0.089^{**}	0.054	0.008	0.040	0.063
	(0.042)	(0.030)	(0.045)	(0.056)	(0.039)	(0.045)	(0.035)	(0.044)	(0.045)	(0.069)	(0.056)	(0.062)
mbtru	-0.224^{***}	-0.376^{***}	-0.336^{***}	-0.335^{***}	-0.268^{***}	-0.126^{***}	-0.461^{***}	-0.270^{***}	-0.410^{***}	-0.206^{***}	-0.050	-0.085
	(0.036)	(0.028)	(0.054)	(0.044)	(0.033)	(0.038)	(0.039)	(0.037)	(0.041)	(0.068)	(0.066)	(0.063)
atncrse	0.081^{**}	0.036	0.168^{***}	-0.033		0.047	-0.021	-0.045	-0.050	-0.117		0.096
	(0.040)	(0.030)	(0.049)	(0.043)		(0.045)	(0.037)	(0.039)	(0.040)	(0.083)		(0.063)
ipcrtiv	-0.008	0.016	0.046^{***}	-0.029	0.031^{**}	-0.035^{**}	0.053^{***}	-0.029	0.059^{***}		-0.025	0.037
	(0.017)	(0.013)	(0.018)	(0.019)	(0.014)	(0.016)	(0.016)	(0.018)	(0.017)		(0.023)	(0.032)
imprich	0.084^{***}	0.036^{***}	0.097^{***}	0.080^{***}	0.097^{***}	0.068^{***}	0.130^{***}	0.104^{***}	0.235^{***}	0.061^{**}	0.050^{**}	0.017
	(0.018)	(0.013)	(0.022)	(0.019)	(0.016)	(0.017)	(0.017)	(0.019)	(0.020)	(0.026)	(0.023)	(0.025)
ipeqopt	-0.240^{***}	-0.148^{***}	-0.178^{***}	-0.169^{***}	-0.172^{***}	-0.099^{***}	-0.172^{***}	-0.182^{***}	-0.158^{***}	-0.030	-0.056^{*}	0.058
	(0.024)	(0.015)	(0.023)	(0.021)	(0.017)	(0.021)	(0.019)	(0.024)	(0.019)	(0.029)	(0.031)	(0.037)
ipshabt	-0.038^{**}	-0.006	0.034^{*}	-0.034^{**}	-0.026^{*}	0.022	-0.099^{***}	-0.058^{***}	-0.072^{***}		-0.029	-0.024
	(0.017)	(0.012)	(0.018)	(0.017)	(0.014)	(0.018)	(0.016)	(0.019)	(0.018)		(0.024)	(0.028)
impsafe	0.056^{***}	0.019	0.033^{*}	0.014	-0.019	-0.012	0.021	-0.007	0.011		0.066^{**}	0.012
	(0.019)	(0.013)	(0.018)	(0.018)	(0.015)	(0.020)	(0.017)	(0.018)	(0.016)		(0.028)	(0.032)
impdiff	0.004	-0.005		0.012	-0.007	0.038^{**}	0.025	0.025	0.025	0.022		0.007
	(0.018)	(0.012)		(0.017)	(0.015)	(0.017)	(0.017)	(0.019)	(0.018)	(0.027)		(0.029)
ipfrule	0.021	0.003	-0.0002	0.017	0.022^{*}	0.030^{*}	0.054^{***}	0.034^{**}	0.015	-0.007		-0.020
	(0.015)	(0.011)	(0.017)	(0.015)	(0.014)	(0.016)	(0.015)	(0.018)	(0.018)	(0.023)		(0.022)
ipudrst	-0.049^{**}	-0.016	-0.025	-0.031	-0.005	-0.043^{**}	-0.026	-0.046^{**}		-0.029	-0.034	-0.037
	(0.023)	(0.017)	(0.023)	(0.024)	(0.019)	(0.021)	(0.021)	(0.023)		(0.030)	(0.029)	(0.034)
ipmodst	-0.045^{**}		-0.013	0.024		0.003	-0.012	-0.036^{**}		-0.018		0.071^{*}
	(0.019)		(0.020)	(0.018)		(0.017)	(0.015)	(0.016)		(0.030)		(0.036)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ipgdtim	−0.012	0.012	−0.044**	0.037	−0.015	−0.033*	0.007	−0.007	−0.016			−0.031
	(0.019)	(0.015)	(0.022)	(0.024)	(0.015)	(0.017)	(0.017)	(0.019)	(0.017)			(0.028)
impfree	0.083***	0.052***	0.040**	0.082***	0.027*	0.041**	0.038**	0.018	0.010	0.030		0.035
	(0.020)	(0.016)	(0.017)	(0.024)	(0.017)	(0.020)	(0.017)	(0.023)	(0.017)	(0.033)		(0.037)
iphlppl	−0.033	−0.032*	−0.030	−0.077***	−0.054***	0.015	−0.002	−0.060**	0.024	−0.055	−0.031	−0.079*
	(0.026)	(0.017)	(0.023)	(0.025)	(0.020)	(0.023)	(0.022)	(0.024)	(0.021)	(0.035)	(0.034)	(0.042)
ipsuces	−0.020	0.027**	−0.053***	0.019		0.015	0.055***	0.041**	0.039**	−0.091***	−0.060**	−0.010
	(0.018)	(0.013)	(0.020)	(0.018)		(0.018)	(0.018)	(0.020)	(0.019)	(0.029)	(0.028)	(0.032)
ipstrgv	0.122***	0.107***	0.127***	0.077***	0.142***	0.072***	−0.034**	0.158***	−0.054***	0.026		0.076**
	(0.019)	(0.013)	(0.018)	(0.019)	(0.016)	(0.019)	(0.015)	(0.019)	(0.017)	(0.030)		(0.032)
ipadvnt	0.013	0.028**	0.042**		0.029*	−0.046***	0.015	0.039**	0.025	0.025		0.032
	(0.017)	(0.013)	(0.018)		(0.016)	(0.016)	(0.017)	(0.019)	(0.019)	(0.025)		(0.023)
ipbhprp	−0.033*	−0.003	0.050***	0.030*	0.021	0.049**	0.047***	0.042**	0.033*	0.032	−0.070**	0.020
	(0.019)	(0.013)	(0.018)	(0.017)	(0.015)	(0.020)	(0.017)	(0.020)	(0.018)	(0.030)	(0.029)	(0.031)
iprspot	−0.013	−0.025**	−0.019	−0.051***	−0.036**	−0.023	0.007	−0.040**	−0.032*		0.021	−0.008
	(0.017)	(0.012)	(0.017)	(0.017)	(0.014)	(0.017)	(0.016)	(0.018)	(0.018)		(0.022)	(0.028)
iplylfr	0.105***	0.027	0.054**	0.113***		−0.008	0.053**	0.059**	0.129***	−0.025		−0.083**
	(0.030)	(0.022)	(0.025)	(0.031)		(0.024)	(0.023)	(0.026)	(0.024)	(0.039)		(0.036)
impenv	−0.058**	−0.092***	−0.061***	−0.250***	−0.045**	−0.034	−0.121***	−0.100***	−0.186***	0.028	−0.053	−0.080**
	(0.023)	(0.016)	(0.021)	(0.025)	(0.018)	(0.021)	(0.020)	(0.023)	(0.018)	(0.039)	(0.033)	(0.038)
imptrad	0.039**	0.072***	0.025	0.133***	0.105***	0.023	0.114***	0.089***	0.070***	0.086***	0.137***	0.063**
	(0.017)	(0.012)	(0.017)	(0.017)	(0.013)	(0.018)	(0.015)	(0.017)	(0.016)	(0.029)	(0.031)	(0.027)
impfun	0.047**	−0.020	−0.012	0.025	−0.037**	0.025	0.004	0.019		0.019	−0.027	0.009
	(0.020)	(0.013)	(0.019)	(0.018)	(0.016)	(0.018)	(0.018)	(0.021)		(0.032)	(0.021)	(0.029)
eduisced1	0.170	−0.196**	−0.205	0.096	−0.176	−0.645*	0.348		−0.661***			−0.430**
	(0.160)	(0.089)	(0.141)	(0.083)	(0.229)	(0.371)	(0.218)		(0.099)			(0.200)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
eduisced2	0.373**	0.037	−0.039	0.131***	−0.199	−0.635*	0.747***	0.079	−0.177***	0.117	0.045	−0.461**
	(0.152)	(0.048)	(0.136)	(0.047)	(0.172)	(0.365)	(0.216)	(0.078)	(0.062)	(0.105)	(0.108)	(0.195)
eduisced3	0.491***	0.026	0.089		−0.012	−0.504	0.996***	0.119	−0.004	0.031	−0.110	−0.622***
	(0.148)	(0.035)	(0.137)		(0.172)	(0.363)	(0.217)	(0.079)	(0.050)	(0.105)	(0.112)	(0.192)
eduisced6	0.414***		0.075	−0.079	−0.106	−0.499	1.221***	0.017		−0.240**	0.032	−0.643***
	(0.151)		(0.144)	(0.073)	(0.174)	(0.365)	(0.219)	(0.084)		(0.122)	(0.131)	(0.202)
eduisced7	0.429***	−0.024	−0.005	−0.116*	−0.176	−0.474	1.220***	−0.017	−0.186***	−0.256*	−0.120	−0.734***
	(0.154)	(0.041)	(0.145)	(0.068)	(0.174)	(0.365)	(0.221)	(0.089)	(0.052)	(0.134)	(0.129)	(0.206)
eduisced8	0.503***	−0.099*	0.107	0.033	−0.216	−0.659*	1.006***	−0.089	−0.356***	−0.164	−0.115	−0.716***
	(0.168)	(0.051)	(0.160)	(0.109)	(0.179)	(0.368)	(0.224)	(0.094)	(0.078)	(0.173)	(0.187)	(0.242)
Round2	0.062	−0.134**	−0.102	0.218***	−0.055	−0.340***	−0.129*	−0.021	−0.235***	0.338**	0.241**	0.235**
	(0.078)	(0.055)	(0.099)	(0.072)	(0.069)	(0.098)	(0.069)	(0.070)	(0.066)	(0.145)	(0.108)	(0.108)
Round3	0.156**	−0.294***	0.078	0.193**	−0.056	−0.304***	−0.064	−0.128*	−0.132*	0.689***	0.666***	0.121
	(0.076)	(0.057)	(0.096)	(0.080)	(0.067)	(0.094)	(0.078)	(0.070)	(0.069)	(0.142)	(0.105)	(0.110)
Round4	0.211***	0.079	0.242***	0.121	0.017	−0.077	0.054	−0.079	−0.077	1.047***	0.606***	−0.024
	(0.078)	(0.057)	(0.093)	(0.080)	(0.072)	(0.080)	(0.066)	(0.071)	(0.071)	(0.135)	(0.107)	(0.111)
Round5	0.189**	−0.030	0.060	0.231***	0.100	−0.150*	−0.033	0.130*	0.017	1.206***	0.436***	0.234**
	(0.077)	(0.059)	(0.098)	(0.082)	(0.072)	(0.086)	(0.068)	(0.069)	(0.074)	(0.117)	(0.105)	(0.115)
Round6	0.288***	0.002	0.064	0.135*	0.002	−0.077	−0.017	0.219***	0.266***	0.900***	0.487***	0.312***
	(0.077)	(0.060)	(0.102)	(0.082)	(0.074)	(0.079)	(0.067)	(0.070)	(0.073)	(0.116)	(0.109)	(0.118)
Round7	0.276***	0.037	0.223**	0.108	−0.052	−0.135	0.109	0.130*	0.039	0.534***	0.664***	0.022
	(0.079)	(0.061)	(0.106)	(0.082)	(0.070)	(0.083)	(0.069)	(0.071)	(0.075)	(0.126)	(0.113)	(0.120)
Round8	0.241***	−0.206***	0.235**	0.183**	−0.070	−0.072	0.063	0.260***	0.066	0.729***	0.582***	0.164
	(0.078)	(0.062)	(0.103)	(0.083)	(0.070)	(0.078)	(0.071)	(0.074)	(0.075)	(0.131)	(0.114)	(0.111)
Round9	0.298***	−0.213***	0.249**	0.303***	0.053	−0.315***	0.001	0.239***	0.144*	0.609***	0.367***	0.317***
	(0.080)	(0.065)	(0.100)	(0.084)	(0.074)	(0.081)	(0.074)	(0.073)	(0.082)	(0.133)	(0.124)	(0.114)

Continued on next page

Table E2: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Constant	4.004***	5.515***	6.239***	7.415***	5.662***	4.263***	3.635***	6.735***	6.982***	4.437***	3.874***	4.706***
	(0.344)	(0.225)	(0.369)	(0.335)	(0.302)	(0.452)	(0.369)	(0.329)	(0.306)	(0.470)	(0.417)	(0.482)
Observations	12,201	18,568	12,341	9,030	13,384	11,051	13,036	12,324	11,335	7,255	8,053	6,389
Variables	92	87	90	83	81	92	90	88	81	80	73	87
α	0	0.03	0.01	0.04	0.09	0	0.47	0.02	0.19	0.06	0.1	0.03
λ	0.1627	0.0516	0.1833	0.0954	0.0503	0.3396	0.0023	0.1245	0.0223	0.1557	0.1106	0.1909
Adjusted R^2	0.14	0.2	0.3	0.34	0.19	0.14	0.26	0.29	0.29	0.15	0.14	0.21

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Note: This table provides the full results of the post-elastic net PWLS regressions over all rounds for every country. The standard errors are White (1980) heteroskedasticity robust standard errors. The results are discussed in section 5.2. The full variable descriptions can be seen from the variable list in Appendix C Table C1

Table E3: Robustness check: Post-Lasso PWLS results for each country

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ppltrst	−0.009	−0.011	−0.004	−0.049***	−0.019*		−0.022*	−0.033***	−0.034**		−0.021	−0.013
	(0.011)	(0.008)	(0.012)	(0.010)	(0.010)		(0.012)	(0.012)	(0.013)		(0.013)	(0.014)
pplfair	0.023**	−0.012	−0.007		−0.010	−0.008	0.013	0.010	−0.028**	−0.016	0.014	
	(0.012)	(0.008)	(0.013)		(0.011)	(0.012)	(0.013)	(0.014)	(0.014)	(0.015)	(0.014)	
pplhlp	0.032***	−0.006			0.022**	−0.007	0.005	0.011	0.006		0.022*	0.009
	(0.010)	(0.008)			(0.011)	(0.012)	(0.010)	(0.011)	(0.011)		(0.013)	(0.014)
polintr	0.093***	−0.012	0.112***	0.037	0.084***	0.035	0.028	0.062**	0.036	0.074*		0.033
	(0.024)	(0.019)	(0.027)	(0.027)	(0.022)	(0.022)	(0.025)	(0.028)	(0.028)	(0.040)		(0.038)
trstprl	0.005	0.025***	0.012	0.034**	0.023**	0.019	0.015	0.040**		0.068***	0.040**	−0.025
	(0.013)	(0.009)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)	(0.016)		(0.018)	(0.017)	(0.018)
trstlgl	−0.023**	−0.028***	−0.073***	−0.049***		0.001	−0.023*	−0.076***	0.006	0.030	−0.034**	−0.075***
	(0.011)	(0.008)	(0.013)	(0.014)		(0.011)	(0.012)	(0.013)	(0.013)	(0.019)	(0.017)	(0.017)
trstplc	0.027**	0.039***	0.114***	0.061***	0.024**	0.029***	0.014	0.025*	0.038***	−0.079***	−0.040***	−0.010
	(0.011)	(0.009)	(0.013)	(0.014)	(0.009)	(0.010)	(0.014)	(0.014)	(0.013)	(0.016)	(0.014)	(0.015)
trstplt	−0.005	−0.014	0.014	0.009	0.007	0.013	0.007	0.022	−0.022*		0.018	0.071***
	(0.013)	(0.010)	(0.015)	(0.014)	(0.012)	(0.012)	(0.013)	(0.016)	(0.012)		(0.018)	(0.020)
vote	0.077		−0.085*	0.077*	0.061	0.093*	0.088**	0.062	0.207***	0.079	0.144***	−0.154**
	(0.062)		(0.049)	(0.045)	(0.041)	(0.049)	(0.044)	(0.051)	(0.054)	(0.068)	(0.055)	(0.065)
contplt	0.068	0.033	0.187***	0.147***	−0.043	0.059	0.042	0.073	0.083*			−0.179**
	(0.048)	(0.036)	(0.061)	(0.049)	(0.042)	(0.047)	(0.040)	(0.046)	(0.044)			(0.080)
wrkprty	−0.199**	0.140**	−0.220*		−0.165	0.068	−0.248***	−0.125	−0.160**	−0.438		0.308**
	(0.095)	(0.065)	(0.126)		(0.109)	(0.100)	(0.093)	(0.089)	(0.070)	(0.294)		(0.149)
badge	−0.150**	−0.245***	−0.062	−0.231***	−0.215***	−0.120*	−0.019	−0.173**		0.506**	0.078	−0.177
	(0.071)	(0.060)	(0.069)	(0.072)	(0.065)	(0.073)	(0.043)	(0.086)		(0.218)	(0.107)	(0.181)
sgnptit	−0.028	−0.114***	−0.169***	−0.046	0.057*	−0.049	−0.090**	−0.160***	−0.031	0.162	0.185**	0.109
	(0.042)	(0.029)	(0.048)	(0.040)	(0.034)	(0.047)	(0.036)	(0.041)	(0.037)	(0.139)	(0.079)	(0.082)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pbldmn	−0.422***	−0.310***	−0.577***	−0.314***	−0.226***	−0.130*	−0.776***	−0.403***	−0.549***	0.657***		−0.211
	(0.072)	(0.045)	(0.063)	(0.081)	(0.081)	(0.067)	(0.114)	(0.098)	(0.061)	(0.185)		(0.151)
bctprd	−0.265***	−0.056*	−0.087*	−0.184***		−0.282***	−0.172***	−0.335***	−0.215***	0.160	0.331***	
	(0.057)	(0.029)	(0.048)	(0.042)		(0.057)	(0.036)	(0.053)	(0.043)	(0.156)	(0.106)	
clsprty	−0.010	−0.073***	0.060	0.100**		0.067*	0.040	0.015		0.523***	0.508***	
	(0.035)	(0.028)	(0.043)	(0.039)		(0.039)	(0.032)	(0.035)		(0.063)	(0.060)	
stflife	0.042***	0.036***	0.068***	0.031*	0.047***	0.053***	0.116***	0.079***	0.041**	0.011	0.068***	0.056***
	(0.016)	(0.010)	(0.014)	(0.017)	(0.014)	(0.013)	(0.018)	(0.020)	(0.017)	(0.016)	(0.017)	(0.016)
stfeco	0.067***	0.034***	0.078***	0.031**	0.052***	0.018	0.044***	0.051***	0.034***	0.036*	0.010	0.022
	(0.012)	(0.008)	(0.014)	(0.012)	(0.011)	(0.011)	(0.011)	(0.013)	(0.011)	(0.020)	(0.016)	(0.018)
stfdem	−0.011	0.020**	0.073***	0.026**	0.068***	0.069***	0.090***	0.022	0.025**	0.072***	0.108***	0.068***
	(0.012)	(0.008)	(0.012)	(0.013)	(0.010)	(0.011)	(0.012)	(0.014)	(0.012)	(0.018)	(0.015)	(0.018)
stfedu	−0.009	0.025***	−0.052***	−0.015	−0.025**	0.012	0.024*	0.015		0.007	0.012	
	(0.011)	(0.008)	(0.012)	(0.011)	(0.010)	(0.011)	(0.014)	(0.012)		(0.016)	(0.013)	
stfhlth	0.055***	0.017**	0.052***	0.015	−0.019**	0.015	0.002	0.020*	−0.051***			0.008
	(0.014)	(0.007)	(0.012)	(0.011)	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)			(0.014)
gincdif	−0.188***	−0.204***	−0.340***	−0.304***	−0.296***	−0.113***	−0.447***	−0.425***	−0.535***	−0.120***	−0.042	−0.038
	(0.018)	(0.014)	(0.020)	(0.019)	(0.017)	(0.019)	(0.018)	(0.017)	(0.019)	(0.035)	(0.027)	(0.033)
freehms	0.031	−0.081***	−0.074***	−0.130***	−0.045**	−0.075***	−0.110***	−0.119***	−0.072***	−0.155***	−0.143***	−0.163***
	(0.021)	(0.017)	(0.024)	(0.023)	(0.022)	(0.025)	(0.017)	(0.028)	(0.023)	(0.026)	(0.024)	(0.031)
imsmetn	0.125***	0.066***			0.057	0.051	0.120***	0.043	0.108***	0.274***		−0.048
	(0.033)	(0.026)			(0.037)	(0.036)	(0.032)	(0.045)	(0.036)	(0.035)		(0.057)
imdfetn	−0.212***	−0.199***	−0.168***	−0.210***	−0.049	−0.096**	−0.128***	−0.179***	−0.110**	−0.142***	−0.080	−0.052
	(0.039)	(0.030)	(0.044)	(0.041)	(0.043)	(0.043)	(0.038)	(0.048)	(0.049)	(0.053)	(0.052)	(0.059)
impcntr	−0.092***	−0.111***	−0.177***	−0.231***	−0.140***	−0.059	−0.244***	−0.147***	−0.235***	−0.194***	−0.047	−0.143***
	(0.033)	(0.026)	(0.041)	(0.039)	(0.033)	(0.037)	(0.033)	(0.033)	(0.043)	(0.051)	(0.052)	(0.051)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imbgeco	−0.004			0.030**	0.012	0.016	0.048***	−0.018		−0.039**	0.025*	0.034**
	(0.011)			(0.012)	(0.011)	(0.010)	(0.012)	(0.013)		(0.018)	(0.015)	(0.017)
imueclt	−0.060***	−0.065***	−0.098***	−0.083***	−0.040***		−0.017	−0.090***	−0.070***	−0.024	−0.026*	−0.046**
	(0.012)	(0.009)	(0.014)	(0.012)	(0.011)		(0.013)	(0.012)	(0.011)	(0.017)	(0.015)	(0.018)
imwbcnt	−0.035***	−0.038***	−0.091***	−0.091***	−0.041***		0.001	−0.040***	−0.051***			−0.067***
	(0.012)	(0.010)	(0.016)	(0.014)	(0.013)		(0.013)	(0.013)	(0.013)			(0.021)
happy	−0.013	−0.010	−0.023	0.044**	−0.017	0.004	−0.035*	0.011	0.078***		−0.032	
	(0.018)	(0.012)	(0.018)	(0.019)	(0.015)	(0.015)	(0.019)	(0.022)	(0.018)		(0.020)	
sclmeet	−0.031**	0.045***	−0.016	0.021	−0.009	−0.010	0.010	−0.032**	−0.012	0.017		0.015
	(0.014)	(0.011)	(0.016)	(0.017)	(0.012)	(0.013)	(0.013)	(0.015)	(0.015)	(0.020)		(0.021)
sclact	−0.023	−0.051***		−0.022	0.039*	0.035	0.009	0.008	−0.032		−0.050*	−0.048
	(0.019)	(0.017)		(0.023)	(0.020)	(0.024)	(0.019)	(0.021)	(0.026)		(0.030)	(0.033)
crmvct	0.176***	0.117***	0.132***	0.128***	0.055	0.045	0.047	0.117***	0.097**	0.250**		0.090
	(0.041)	(0.042)	(0.048)	(0.049)	(0.040)	(0.049)	(0.035)	(0.045)	(0.043)	(0.100)		(0.081)
aesfdrk	−0.080***	0.012	−0.071***	−0.067**		−0.024	0.024	0.042	−0.027	0.169***		0.027
	(0.029)	(0.020)	(0.027)	(0.030)		(0.024)	(0.028)	(0.030)	(0.030)	(0.046)		(0.047)
health	0.067**	0.019			0.047**	0.049*	0.078***	0.041	0.046*	0.058		−0.021
	(0.029)	(0.020)			(0.023)	(0.028)	(0.026)	(0.030)	(0.026)	(0.042)		(0.040)
hlthhmp	0.063	−0.044	0.022		−0.012	0.054	0.010	0.052	0.093*		−0.053	0.030
	(0.051)	(0.035)	(0.053)		(0.046)	(0.058)	(0.040)	(0.047)	(0.049)		(0.069)	(0.071)
rlgdgr	0.046***	0.054***	0.080***	0.035***	0.029***	0.040***	0.053***	0.024***	0.040***	0.070***	0.134***	0.086***
	(0.008)	(0.007)	(0.010)	(0.007)	(0.008)	(0.011)	(0.009)	(0.008)	(0.010)	(0.015)	(0.017)	(0.013)
rlgatnd	0.077***	0.043***	0.116***		0.009	0.044***	0.076***	0.098***	0.025	0.096***	0.151***	0.338***
	(0.016)	(0.014)	(0.022)		(0.015)	(0.016)	(0.019)	(0.016)	(0.020)	(0.031)	(0.031)	(0.028)
brncntr	0.120		0.153		−0.102	0.077	0.141			−0.342		0.392***
	(0.095)		(0.108)		(0.077)	(0.085)	(0.127)			(0.297)		(0.129)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pray		0.015*	0.015			0.021*	0.025***	0.027***	0.026**	0.012	0.032*	0.051***
		(0.009)	(0.014)			(0.011)	(0.010)	(0.010)	(0.012)	(0.020)	(0.018)	(0.018)
blgetmg	−0.143	−0.311***	−0.238*	−0.304***	−0.149*		0.098	−0.366***	−0.270**	−0.211	−0.166	
	(0.126)	(0.090)	(0.130)	(0.110)	(0.086)		(0.149)	(0.126)	(0.107)	(0.154)	(0.160)	
facntr	0.192**	0.197***	0.275***	0.210***	0.060	0.041	0.332**	0.312***	0.207**	−0.140	0.071	0.170
	(0.077)	(0.055)	(0.078)	(0.061)	(0.061)	(0.097)	(0.145)	(0.094)	(0.090)	(0.198)	(0.178)	(0.114)
mocntr	0.156**	0.050	0.077	−0.064		0.072	−0.114	0.065		0.393	0.082	0.028
	(0.077)	(0.058)	(0.085)	(0.058)		(0.094)	(0.142)	(0.084)		(0.258)	(0.181)	(0.121)
gndr	0.245***	0.167***	0.099**	0.328***	0.030		−0.011	0.223***	0.187***	0.076	0.157***	0.233***
	(0.038)	(0.030)	(0.046)	(0.042)	(0.036)		(0.039)	(0.039)	(0.042)	(0.060)	(0.054)	(0.061)
agea	0.0003	0.004***	0.002	0.003**	0.008***	0.006***	0.017***	0.0001	0.007***	−0.019***	−0.005*	−0.009***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
domicil	−0.042**	−0.035***	−0.081***	−0.083***	−0.085***	−0.021	−0.042***	−0.074***	0.058***		0.057***	−0.031
	(0.016)	(0.012)	(0.018)	(0.020)	(0.018)	(0.014)	(0.013)	(0.014)	(0.014)		(0.022)	(0.025)
pdwrk	0.107*	0.067*	−0.057	0.048		0.016	0.160**	−0.034	0.064	0.104	0.054	
	(0.056)	(0.040)	(0.066)	(0.050)		(0.046)	(0.068)	(0.054)	(0.067)	(0.088)	(0.066)	
edctn	−0.079	−0.173***	−0.173	−0.246***	−0.187**	−0.083	−0.010	−0.208***	−0.329***	−0.374***	0.079	−0.092
	(0.073)	(0.056)	(0.114)	(0.089)	(0.084)	(0.089)	(0.074)	(0.074)	(0.072)	(0.125)	(0.085)	(0.079)
uempla	−0.193*		−0.156	−0.161	−0.047		0.155		0.157			−0.110
	(0.112)		(0.121)	(0.187)	(0.105)		(0.102)		(0.136)			(0.132)
uempli		0.196*	−0.189	0.262	0.205		0.086	0.217	−0.417**	0.201		
		(0.118)	(0.150)	(0.262)	(0.144)		(0.127)	(0.145)	(0.165)	(0.202)		
dsbld	0.081	0.106	0.053	−0.109	−0.063		0.257*	−0.170*	−0.109	0.395**	−0.208	0.217
	(0.103)	(0.079)	(0.161)	(0.137)	(0.087)		(0.153)	(0.094)	(0.104)	(0.175)	(0.202)	(0.263)
rtrd	0.109	0.102*			0.034		0.009	0.056	0.053	−0.213*	−0.096	−0.106
	(0.075)	(0.055)			(0.054)		(0.083)	(0.070)	(0.089)	(0.126)	(0.105)	(0.096)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
hswrk	0.052	0.096***	0.055		−0.039	−0.048	0.050	−0.019	0.034		−0.029	−0.033
	(0.042)	(0.031)	(0.093)		(0.045)	(0.046)	(0.090)	(0.038)	(0.042)		(0.070)	(0.060)
uemp3m	−0.039	−0.098***	−0.083*	−0.131**	−0.010	−0.139***	−0.256***	−0.089**	0.054		0.049	0.065
	(0.041)	(0.030)	(0.045)	(0.056)	(0.039)	(0.043)	(0.035)	(0.044)	(0.045)		(0.055)	(0.062)
mbtru	−0.224***	−0.376***	−0.342***	−0.335***	−0.268***	−0.131***	−0.461***	−0.269***	−0.410***	−0.207***	−0.048	−0.094
	(0.036)	(0.028)	(0.054)	(0.044)	(0.033)	(0.038)	(0.039)	(0.037)	(0.041)	(0.068)	(0.066)	(0.062)
atncrse	0.081**	0.036	0.173***	−0.033		0.047	−0.021	−0.045	−0.050	−0.117		0.089
	(0.040)	(0.030)	(0.049)	(0.043)		(0.044)	(0.037)	(0.039)	(0.040)	(0.083)		(0.063)
ipcrtiv	−0.008	0.016	0.047***	−0.029	0.031**	−0.036**	0.053***	−0.029	0.059***		−0.025	0.037
	(0.017)	(0.013)	(0.018)	(0.019)	(0.014)	(0.016)	(0.016)	(0.018)	(0.017)		(0.023)	(0.031)
imprich	0.084***	0.037***	0.096***	0.080***	0.097***	0.068***	0.130***	0.103***	0.235***	0.060**	0.050**	0.016
	(0.018)	(0.013)	(0.022)	(0.019)	(0.016)	(0.017)	(0.017)	(0.018)	(0.020)	(0.025)	(0.023)	(0.025)
ipeqopt	−0.240***	−0.148***	−0.179***	−0.169***	−0.173***	−0.100***	−0.172***	−0.182***	−0.158***	−0.032	−0.057*	0.058
	(0.024)	(0.015)	(0.023)	(0.021)	(0.016)	(0.021)	(0.019)	(0.024)	(0.019)	(0.029)	(0.031)	(0.037)
ipshabt	−0.038**	−0.006	0.033*	−0.034**	−0.026*	0.021	−0.099***	−0.059***	−0.072***		−0.029	−0.026
	(0.017)	(0.012)	(0.018)	(0.017)	(0.014)	(0.018)	(0.016)	(0.019)	(0.018)		(0.024)	(0.026)
impsafe	0.056***	0.018	0.033*	0.014	−0.018		0.021	−0.007	0.011		0.067**	
	(0.019)	(0.013)	(0.018)	(0.018)	(0.015)		(0.017)	(0.018)	(0.016)		(0.028)	
impdiff	0.004	−0.005		0.012	−0.007	0.037**	0.025	0.025	0.025	0.022		
	(0.018)	(0.012)		(0.017)	(0.015)	(0.017)	(0.017)	(0.019)	(0.018)	(0.027)		
ipfrule	0.021	0.003		0.017	0.022	0.030*	0.054***	0.035**	0.015			−0.020
	(0.015)	(0.011)		(0.015)	(0.013)	(0.016)	(0.015)	(0.018)	(0.018)			(0.021)
ipudrst	−0.049**	−0.017	−0.025	−0.031		−0.043**	−0.026	−0.047**		−0.030	−0.034	−0.038
	(0.023)	(0.017)	(0.023)	(0.024)		(0.021)	(0.021)	(0.023)		(0.030)	(0.029)	(0.034)
ipmodst	−0.045**		−0.013	0.024			−0.012	−0.036**		−0.019		0.073**
	(0.019)		(0.020)	(0.018)			(0.015)	(0.016)		(0.029)		(0.036)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ipgdtim	-0.012	0.012	-0.044^{**}	0.037	-0.015	-0.034^{**}	0.007		-0.016			-0.029
	(0.019)	(0.015)	(0.022)	(0.024)	(0.015)	(0.017)	(0.017)		(0.017)			(0.027)
impfree	0.083^{***}	0.052^{***}	0.040^{**}	0.082^{***}	0.027	0.040^{**}	0.038^{**}	0.016	0.010	0.029		0.036
	(0.020)	(0.016)	(0.017)	(0.024)	(0.017)	(0.020)	(0.017)	(0.023)	(0.017)	(0.032)		(0.036)
iphlppl	-0.033	-0.032^{*}	-0.029	-0.077^{***}	-0.054^{***}	0.012	-0.002	-0.059^{**}	0.024	-0.058^{*}	-0.033	-0.078^{*}
	(0.026)	(0.017)	(0.023)	(0.025)	(0.020)	(0.022)	(0.022)	(0.024)	(0.021)	(0.035)	(0.034)	(0.041)
ipsuces	-0.020	0.027^{**}	-0.052^{***}	0.019		0.014	0.055^{***}	0.040^{**}	0.039^{**}	-0.091^{***}	-0.060^{**}	
	(0.018)	(0.013)	(0.020)	(0.018)		(0.018)	(0.018)	(0.020)	(0.019)	(0.029)	(0.028)	
ipstrgv	0.122^{***}	0.107^{***}	0.127^{***}	0.077^{***}	0.141^{***}	0.069^{***}	-0.034^{**}	0.158^{***}	-0.054^{***}	0.023		0.078^{**}
	(0.019)	(0.013)	(0.018)	(0.019)	(0.016)	(0.018)	(0.015)	(0.019)	(0.017)	(0.029)		(0.031)
ipadvnt	0.013	0.028^{**}	0.042^{**}		0.029^{*}	-0.043^{***}	0.015	0.038^{**}	0.025	0.026		0.033
	(0.017)	(0.013)	(0.018)		(0.016)	(0.016)	(0.017)	(0.019)	(0.019)	(0.025)		(0.022)
ipbhprp	-0.033^{*}		0.049^{***}	0.030^{*}	0.020	0.048^{**}	0.047^{***}	0.042^{**}	0.033^{*}	0.030	-0.070^{**}	0.018
	(0.019)		(0.018)	(0.017)	(0.015)	(0.019)	(0.017)	(0.020)	(0.018)	(0.030)	(0.029)	(0.030)
iprspot	-0.013	-0.025^{**}	-0.018	-0.051^{***}	-0.035^{**}	-0.024	0.007	-0.041^{**}	-0.032^{*}		0.021	
	(0.017)	(0.012)	(0.017)	(0.017)	(0.014)	(0.016)	(0.016)	(0.018)	(0.018)		(0.021)	
iplylfr	0.105^{***}	0.027	0.054^{**}	0.113^{***}			0.053^{**}	0.058^{**}	0.129^{***}			-0.083^{**}
	(0.030)	(0.022)	(0.025)	(0.031)			(0.023)	(0.026)	(0.024)			(0.035)
impenv	-0.058^{**}	-0.092^{***}	-0.060^{***}	-0.250^{***}	-0.045^{**}	-0.035^{*}	-0.121^{***}	-0.100^{***}	-0.186^{***}	0.021	-0.052	-0.079^{**}
	(0.023)	(0.016)	(0.021)	(0.025)	(0.018)	(0.021)	(0.020)	(0.023)	(0.018)	(0.037)	(0.033)	(0.038)
imptrad	0.039^{**}	0.072^{***}	0.025	0.133^{***}	0.104^{***}	0.023	0.114^{***}	0.090^{***}	0.070^{***}	0.084^{***}	0.138^{***}	0.063^{**}
	(0.017)	(0.012)	(0.017)	(0.017)	(0.013)	(0.018)	(0.015)	(0.017)	(0.016)	(0.029)	(0.031)	(0.027)
impfun	0.047^{**}	-0.020	-0.011	0.025	-0.037^{**}	0.025	0.004	0.016		0.018	-0.028	
	(0.020)	(0.013)	(0.019)	(0.018)	(0.016)	(0.017)	(0.018)	(0.020)		(0.032)	(0.021)	
eduisced1	0.170	-0.196^{**}	-0.206^{**}	0.096		-0.145^{*}	0.347		-0.661^{***}			
	(0.160)	(0.089)	(0.086)	(0.082)		(0.087)	(0.218)		(0.099)			

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
eduisced2	0.373**	0.037	−0.030	0.131***	−0.079	−0.134**	0.747***	0.068	−0.177***	0.118	0.047	
	(0.152)	(0.048)	(0.068)	(0.046)	(0.124)	(0.054)	(0.216)	(0.051)	(0.062)	(0.105)	(0.108)	
eduisced3	0.491***	0.026	0.097*		0.108		0.996***	0.107**	−0.004	0.034	−0.111	−0.198***
	(0.148)	(0.035)	(0.059)		(0.125)		(0.217)	(0.045)	(0.050)	(0.104)	(0.112)	(0.069)
eduisced6	0.414***		0.082	−0.080	0.013		1.221***			−0.241**	0.033	−0.224**
	(0.151)		(0.065)	(0.073)	(0.128)		(0.219)			(0.121)	(0.131)	(0.093)
eduisced7	0.430***	−0.024		−0.117*	−0.057	0.024	1.220***	−0.030	−0.186***	−0.258*	−0.114	−0.321***
	(0.154)	(0.041)		(0.068)	(0.128)	(0.047)	(0.221)	(0.055)	(0.052)	(0.134)	(0.129)	(0.101)
eduisced8	0.503***	−0.099*	0.113	0.032	−0.097	−0.163**	1.006***	−0.101	−0.356***	−0.167	−0.114	−0.304*
	(0.168)	(0.051)	(0.092)	(0.109)	(0.134)	(0.070)	(0.224)	(0.063)	(0.078)	(0.173)	(0.188)	(0.162)
Round2	0.062	−0.134**	−0.097	0.218***	−0.056	−0.336***	−0.129*	−0.025	−0.235***	0.338**	0.240**	0.229**
	(0.078)	(0.055)	(0.099)	(0.072)	(0.069)	(0.097)	(0.069)	(0.070)	(0.066)	(0.144)	(0.107)	(0.107)
Round3	0.156**	−0.294***	0.088	0.193**	−0.056	−0.308***	−0.064	−0.130*	−0.132*	0.690***	0.672***	0.120
	(0.076)	(0.057)	(0.096)	(0.080)	(0.067)	(0.093)	(0.078)	(0.070)	(0.069)	(0.141)	(0.105)	(0.110)
Round4	0.211***	0.079	0.248***	0.120	0.017	−0.075	0.054	−0.080	−0.077	1.051***	0.610***	−0.021
	(0.078)	(0.057)	(0.093)	(0.079)	(0.072)	(0.080)	(0.066)	(0.071)	(0.071)	(0.134)	(0.107)	(0.110)
Round5	0.189**	−0.030	0.063	0.230***	0.101	−0.150*	−0.033	0.132*	0.017	1.208***	0.446***	0.228**
	(0.077)	(0.059)	(0.098)	(0.082)	(0.072)	(0.085)	(0.068)	(0.069)	(0.074)	(0.116)	(0.105)	(0.115)
Round6	0.289***	0.001	0.068	0.135*	0.002	−0.075	−0.017	0.220***	0.266***	0.899***	0.497***	0.303**
	(0.077)	(0.060)	(0.102)	(0.082)	(0.074)	(0.078)	(0.067)	(0.070)	(0.073)	(0.115)	(0.109)	(0.118)
Round7	0.276***	0.037	0.231**	0.107	−0.052	−0.135	0.109	0.130*	0.039	0.536***	0.673***	0.009
	(0.079)	(0.061)	(0.105)	(0.082)	(0.070)	(0.083)	(0.069)	(0.071)	(0.075)	(0.125)	(0.113)	(0.120)
Round8	0.241***	−0.206***	0.237**	0.183**	−0.069	−0.073	0.063	0.257***	0.066	0.735***	0.592***	0.148
	(0.078)	(0.062)	(0.102)	(0.083)	(0.070)	(0.078)	(0.071)	(0.074)	(0.075)	(0.128)	(0.114)	(0.110)
Round9	0.298***	−0.214***	0.252**	0.304***	0.053	−0.316***	0.001	0.239***	0.144*	0.615***	0.386***	0.300***
	(0.080)	(0.065)	(0.099)	(0.084)	(0.074)	(0.081)	(0.074)	(0.073)	(0.082)	(0.129)	(0.123)	(0.114)

Continued on next page

Table E3: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Constant	4.005***	5.516***	6.206***	7.423***	5.539***	3.728***	3.633***	6.729***	6.982***	4.418***	3.985***	4.255***
	(0.343)	(0.221)	(0.333)	(0.326)	(0.279)	(0.264)	(0.369)	(0.319)	(0.306)	(0.460)	(0.392)	(0.447)
Observations	12,201	18,568	12,341	9,030	13,384	11,051	13,036	12,324	11,335	7,255	8,053	6,389
Variables	90	85	83	79	79	78	92	87	81	71	68	77
λ	0.0017	0.0025	0.0079	0.0066	0.0055	0.0065	0	0.0048	0.0049	0.0135	0.0136	0.0104
Adjusted R^2	0.14	0.2	0.3	0.34	0.19	0.14	0.26	0.29	0.29	0.15	0.14	0.21

*p<0.1; **p<0.05; ***p<0.01

Note:This table provides the full results of the post-lasso PWLS regressions over all rounds for every country. This regression is used as a robustness check for the results in section 5.2. The standard errors are White (1980) heteroskedasticity robust standard errors. The results are discussed in section 5.2. The full variable descriptions can be seen from the variable list in Appendix C Table C1

Table E4: Robustness check: The party-based left-right scale results for each country

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ppltrst		−0.068***	−0.013	−0.023**	−0.007	−0.034***	−0.008	0.001	−0.042***	−0.035**		
		(0.017)	(0.008)	(0.011)	(0.015)	(0.009)	(0.015)	(0.009)	(0.015)	(0.017)		
pplfair		0.024		0.013	−0.002		−0.033**	−0.015		−0.017	0.011	
		(0.018)		(0.012)	(0.017)		(0.015)	(0.010)		(0.018)	(0.012)	
pplhlp	0.030***	0.006		−0.011	−0.011			0.0002	−0.017	−0.013	0.012	0.034***
	(0.010)	(0.017)		(0.010)	(0.016)			(0.010)	(0.015)	(0.015)	(0.012)	(0.013)
polintr	0.154***	0.057	0.047*	0.014	0.135***	0.153***	−0.061*	0.033	0.073*	0.071*		0.078**
	(0.026)	(0.043)	(0.024)	(0.025)	(0.038)	(0.024)	(0.037)	(0.021)	(0.038)	(0.038)		(0.039)
trstprl	−0.037***		0.022**	−0.016	0.011	0.022**		0.018*	0.044**	−0.037**		
	(0.013)		(0.010)	(0.012)	(0.017)	(0.009)		(0.011)	(0.021)	(0.017)		
trstlgl	−0.041***	−0.105***	−0.036***	−0.026**	−0.119***		0.023	−0.011	−0.078***	−0.016	−0.038***	−0.064***
	(0.012)	(0.019)	(0.010)	(0.012)	(0.017)		(0.016)	(0.009)	(0.019)	(0.018)	(0.014)	(0.015)
trstplc	0.014	0.092***	0.036***	0.010	0.102***	0.013	−0.048***	0.035***	0.020	0.012	−0.024*	−0.043***
	(0.012)	(0.020)	(0.010)	(0.013)	(0.018)	(0.009)	(0.015)	(0.010)	(0.020)	(0.017)	(0.014)	(0.014)
trstplt		0.016	0.014	−0.006				0.021**	0.004	−0.044**		
		(0.019)	(0.011)	(0.012)				(0.011)	(0.022)	(0.018)		
contplt	0.023	0.155**	0.071*	0.097**	0.055		−0.108	−0.002	0.117*	0.164***	−0.092	
	(0.049)	(0.070)	(0.042)	(0.038)	(0.072)		(0.089)	(0.042)	(0.064)	(0.058)	(0.085)	
wrkprty		0.181**	0.186***	−0.182***	−0.058	−0.123		0.064	−0.141	−0.174**	−0.371***	
		(0.081)	(0.064)	(0.068)	(0.120)	(0.079)		(0.075)	(0.104)	(0.083)	(0.143)	
badge	−0.133*	−0.366***	−0.274***	−0.008	−0.059	−0.221***	0.411**	−0.113	−0.264**	−0.031		0.231*
	(0.070)	(0.090)	(0.063)	(0.041)	(0.093)	(0.057)	(0.162)	(0.069)	(0.114)	(0.056)		(0.139)
sgnptit	−0.086*	−0.242***	−0.168***	−0.081**	−0.110*	0.035	0.212*	−0.118**	−0.222***	−0.004		0.096
	(0.048)	(0.063)	(0.034)	(0.037)	(0.065)	(0.038)	(0.120)	(0.047)	(0.057)	(0.052)		(0.084)
pbldmn	−0.374***	−0.218**	−0.309***	−0.546***	−0.485***	−0.115	0.143	−0.190***	0.075	−0.544***		−0.342**
	(0.075)	(0.107)	(0.053)	(0.096)	(0.083)	(0.073)	(0.158)	(0.068)	(0.129)	(0.080)		(0.153)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
bctprd	-0.364^{***}	-0.236^{***}	-0.168^{***}	-0.143^{***}	-0.155^{**}	-0.073^{*}		-0.222^{***}	-0.468^{***}	-0.159^{***}	0.315^{***}	0.115
	(0.059)	(0.064)	(0.035)	(0.035)	(0.062)	(0.040)		(0.056)	(0.075)	(0.058)	(0.091)	(0.104)
clsprty	-0.258^{***}	-0.110	-0.079^{**}	-0.128^{***}	-0.096	0.032	0.250^{***}	-0.126^{***}	-0.091^{*}	-0.178^{***}	0.081	0.178^{***}
	(0.042)	(0.075)	(0.035)	(0.035)	(0.065)	(0.037)	(0.065)	(0.036)	(0.053)	(0.056)	(0.051)	(0.060)
stflife	0.061^{***}	0.047^{*}	0.036^{***}	0.057^{***}	0.080^{***}	0.008		-0.001	0.041^{*}	0.049^{**}	0.041^{**}	0.039^{**}
	(0.018)	(0.028)	(0.010)	(0.017)	(0.015)	(0.011)		(0.013)	(0.025)	(0.022)	(0.017)	(0.019)
stfeco	0.091^{***}		0.038^{***}	0.006	0.023	0.034^{***}		0.021^{**}	0.022	0.026^{*}	0.020	
	(0.013)		(0.010)	(0.011)	(0.018)	(0.010)		(0.010)	(0.018)	(0.014)	(0.015)	
stfdem	-0.061^{***}		0.010	0.033^{***}	0.036^{**}	0.043^{***}	0.032^{**}	0.030^{***}	0.024	-0.026	0.046^{***}	0.019
	(0.012)		(0.009)	(0.012)	(0.015)	(0.009)	(0.014)	(0.009)	(0.019)	(0.016)	(0.013)	(0.015)
stfedu	0.044^{***}	0.024	0.012	-0.002	-0.032^{*}	-0.053^{***}		0.006	0.004	-0.010		
	(0.012)	(0.017)	(0.009)	(0.014)	(0.017)	(0.010)		(0.010)	(0.018)	(0.016)		
stfhlth	0.017	-0.023	0.010		0.041^{**}	-0.021^{**}		0.004	0.040^{**}	-0.043^{***}		
	(0.016)	(0.016)	(0.009)		(0.016)	(0.009)		(0.008)	(0.017)	(0.015)		
gincdif	-0.195^{***}	-0.295^{***}	-0.278^{***}	-0.334^{***}	-0.304^{***}	-0.272^{***}	-0.037	-0.111^{***}	-0.513^{***}	-0.611^{***}		-0.085^{**}
	(0.019)	(0.027)	(0.016)	(0.017)	(0.027)	(0.017)	(0.034)	(0.018)	(0.024)	(0.025)		(0.033)
freehms	0.053^{**}	-0.131^{***}	-0.120^{***}	-0.101^{***}	-0.069^{**}		-0.099^{***}	0.003	-0.213^{***}	-0.022	-0.125^{***}	-0.096^{***}
	(0.023)	(0.036)	(0.020)	(0.016)	(0.032)		(0.024)	(0.022)	(0.034)	(0.029)	(0.023)	(0.030)
imsmetn	0.113^{***}	0.007	0.056^{*}	0.113^{***}	-0.053	0.061^{*}	0.204^{***}	0.031	0.059	0.125^{***}		
	(0.036)	(0.056)	(0.031)	(0.031)	(0.061)	(0.032)	(0.032)	(0.033)	(0.059)	(0.047)		
imdfetn	-0.103^{**}	-0.187^{***}	-0.157^{***}	-0.051	-0.284^{***}		-0.092^{*}	0.054	-0.182^{***}	-0.136^{**}		-0.078
	(0.041)	(0.066)	(0.036)	(0.037)	(0.066)		(0.051)	(0.039)	(0.067)	(0.063)		(0.056)
impcntr	-0.175^{***}	-0.267^{***}	-0.039	-0.161^{***}	-0.125^{**}	-0.142^{***}	-0.111^{**}	-0.090^{***}	-0.231^{***}	-0.304^{***}		-0.055
	(0.036)	(0.059)	(0.030)	(0.032)	(0.057)	(0.031)	(0.051)	(0.032)	(0.045)	(0.056)		(0.052)
imbgeco	-0.013	-0.032		0.026^{**}	-0.023	-0.033^{***}	-0.020	0.006	-0.023	-0.002		0.030^{*}
	(0.013)	(0.019)		(0.011)	(0.020)	(0.011)	(0.017)	(0.011)	(0.017)	(0.016)		(0.016)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imueclt	-0.077^{***}	-0.137^{***}	-0.064^{***}	-0.026^{**}	-0.106^{***}	-0.016	-0.045^{***}	-0.010	-0.062^{***}	-0.094^{***}	-0.006	-0.034^{**}
	(0.013)	(0.019)	(0.010)	(0.012)	(0.019)	(0.011)	(0.016)	(0.011)	(0.016)	(0.015)	(0.014)	(0.017)
imwbcnt	-0.023^{*}	-0.041^{**}	-0.049^{***}	-0.012	-0.099^{***}	-0.042^{***}		0.012	-0.046^{***}	-0.080^{***}	-0.018	-0.052^{***}
	(0.013)	(0.021)	(0.011)	(0.013)	(0.022)	(0.013)		(0.012)	(0.017)	(0.017)	(0.015)	(0.019)
happy	-0.016	0.032		0.009			0.010	-0.00002	0.003	0.059^{**}	-0.047^{**}	-0.036^{*}
	(0.021)	(0.030)		(0.018)			(0.015)	(0.014)	(0.027)	(0.025)	(0.018)	(0.022)
sclmeet	-0.011	0.049^{*}	0.029^{**}	0.027^{**}	0.029			0.018	0.032	-0.016		-0.027
	(0.016)	(0.026)	(0.013)	(0.013)	(0.022)			(0.012)	(0.020)	(0.020)		(0.022)
sclact	0.013	-0.050	-0.039^{**}	-0.025		0.043^{**}	0.064^{*}	-0.036	0.037	-0.033		-0.020
	(0.021)	(0.035)	(0.020)	(0.018)		(0.020)	(0.033)	(0.022)	(0.030)	(0.034)		(0.034)
crmvct	0.069	0.067	-0.052	0.031	0.142^{**}	0.066	0.114	-0.068	0.209^{***}	0.136^{**}	0.120^{*}	
	(0.047)	(0.073)	(0.050)	(0.037)	(0.067)	(0.043)	(0.090)	(0.049)	(0.064)	(0.059)	(0.071)	
aesfdrk	-0.092^{***}	-0.129^{***}	0.022	0.031		0.007	0.134^{***}	-0.021	0.032	-0.037	-0.035	
	(0.032)	(0.045)	(0.025)	(0.028)		(0.024)	(0.044)	(0.023)	(0.042)	(0.040)	(0.039)	
health			0.061^{***}	0.041		0.049^{**}	0.039	0.024	0.062	0.068^{*}	0.030	0.071^{*}
			(0.023)	(0.026)		(0.023)	(0.040)	(0.027)	(0.040)	(0.035)	(0.034)	(0.040)
hlthhmp			-0.044	-0.046	0.043	-0.027		-0.052	0.032	0.080		-0.042
			(0.042)	(0.041)	(0.070)	(0.048)		(0.055)	(0.066)	(0.067)		(0.070)
rlgdgr	0.024^{***}	0.0001	0.036^{***}	0.017^{**}	0.042^{***}	0.010	0.063^{***}	0.011	0.025^{**}	0.047^{***}	0.063^{***}	0.061^{***}
	(0.008)	(0.014)	(0.008)	(0.009)	(0.013)	(0.008)	(0.013)	(0.010)	(0.011)	(0.013)	(0.016)	(0.013)
rlgatnd	0.065^{***}		0.076^{***}	0.169^{***}	0.129^{***}		0.083^{***}	0.100^{***}	0.106^{***}	0.022	0.167^{***}	0.338^{***}
	(0.017)		(0.016)	(0.018)	(0.029)		(0.027)	(0.016)	(0.021)	(0.026)	(0.032)	(0.029)
pray		0.056^{***}	0.049^{***}	0.041^{***}	0.034^{*}	-0.014		0.012	0.017	0.036^{**}	0.010	0.051^{***}
		(0.016)	(0.010)	(0.009)	(0.018)	(0.010)		(0.012)	(0.014)	(0.015)	(0.017)	(0.019)
brncntr	0.103	0.076	-0.068		0.036			0.119	-0.221	0.120		0.237^{**}
	(0.104)	(0.146)	(0.093)		(0.138)			(0.091)	(0.149)	(0.159)		(0.118)

Continued on next page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
blgetmg	−0.188	0.123	−0.397***	0.175	−0.440**	−0.261***	−0.265*	−0.188	−0.665***	−0.870***		
	(0.138)	(0.151)	(0.112)	(0.153)	(0.189)	(0.080)	(0.142)	(0.176)	(0.171)	(0.172)		
facntr	0.454***	0.224*	0.176***	0.279*	0.187*	0.049		0.052	0.439***	0.220		0.152
	(0.092)	(0.116)	(0.067)	(0.154)	(0.112)	(0.060)		(0.109)	(0.145)	(0.151)		(0.107)
mocntr	0.268***			−0.228	0.065			0.188*	0.300**			0.332***
	(0.091)			(0.146)	(0.114)			(0.114)	(0.124)			(0.116)
gndr	0.234***	0.279***	0.069*	0.195***	0.161***	0.018	0.089	−0.118***	0.319***	0.332***		0.301***
	(0.043)	(0.066)	(0.036)	(0.039)	(0.062)	(0.038)	(0.060)	(0.040)	(0.055)	(0.058)		(0.061)
agea	0.002	−0.0002	0.002	0.009***	−0.004	0.009***	−0.017***	0.010***	0.004*	0.006**	−0.005**	−0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
domicil	−0.079***	−0.179***	−0.091***	−0.059***	−0.049**	−0.132***	−0.117***	−0.139***	−0.080***	0.050***	0.115***	−0.069***
	(0.018)	(0.030)	(0.015)	(0.013)	(0.023)	(0.020)	(0.025)	(0.014)	(0.021)	(0.019)	(0.021)	(0.026)
pdwrk	0.237***		0.103*	0.106	0.090		0.176**	0.009	−0.073			
	(0.055)		(0.054)	(0.073)	(0.090)		(0.087)	(0.071)	(0.083)			
edctn	−0.016	−0.094	−0.206***	−0.113	−0.232	−0.071		−0.010	−0.285**	−0.484***	0.066	−0.178*
	(0.091)	(0.127)	(0.080)	(0.085)	(0.190)	(0.110)		(0.119)	(0.111)	(0.103)	(0.095)	(0.094)
uempla	−0.217*	0.324	0.142	0.043	−0.232		0.251	−0.166	0.198	0.316*		
	(0.131)	(0.305)	(0.111)	(0.120)	(0.193)		(0.154)	(0.108)	(0.176)	(0.190)		
uempli	−0.038		−0.166	−0.048	0.099	0.192		−0.134	−0.247	−0.186	0.158	0.106
	(0.140)		(0.165)	(0.149)	(0.240)	(0.172)		(0.164)	(0.244)	(0.276)	(0.167)	(0.174)
dsbld	0.074	−0.274	0.112	0.159		−0.080	0.198	−0.060	−0.295**	0.038		0.196
	(0.107)	(0.191)	(0.092)	(0.155)		(0.092)	(0.146)	(0.123)	(0.134)	(0.128)		(0.248)
rtrd			0.063	−0.044		0.111*	−0.175	−0.079	0.003	0.095	−0.164**	−0.095
			(0.066)	(0.085)		(0.057)	(0.116)	(0.078)	(0.095)	(0.089)	(0.081)	(0.094)
hswrk	0.158***	−0.022	0.060	0.062	−0.144	0.091*	−0.103	−0.164***	0.136**	0.064		−0.066
	(0.045)	(0.070)	(0.037)	(0.093)	(0.141)	(0.048)	(0.070)	(0.063)	(0.054)	(0.056)		(0.065)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
uemp3m	-0.148^{***}	-0.103	-0.069^{*}	-0.172^{***}		-0.225^{***}		-0.178^{***}	-0.293^{***}	0.184^{***}		
	(0.048)	(0.091)	(0.039)	(0.036)		(0.042)		(0.047)	(0.065)	(0.062)		
mbtru	-0.195^{***}	-0.384^{***}	-0.354^{***}	-0.444^{***}	-0.336^{***}	-0.371^{***}	-0.139^{**}	-0.087^{**}	-0.354^{***}	-0.399^{***}	-0.044	-0.159^{**}
	(0.039)	(0.067)	(0.033)	(0.038)	(0.065)	(0.035)	(0.067)	(0.035)	(0.051)	(0.057)	(0.060)	(0.066)
atncrse	0.051	-0.013	0.063	0.044	0.081	0.047	-0.143^{*}	0.083^{*}	0.037	-0.072	0.085	
	(0.046)	(0.066)	(0.038)	(0.038)	(0.071)	(0.041)	(0.083)	(0.044)	(0.058)	(0.055)	(0.060)	
ipcrtiv	0.025			0.019	0.040			-0.032^{**}	-0.028	0.074^{***}		-0.055^{**}
	(0.019)			(0.015)	(0.025)			(0.015)	(0.024)	(0.023)		(0.027)
imprich	0.076^{***}	0.072^{**}	0.018	0.098^{***}	0.110^{***}	0.094^{***}	0.014	0.020	0.128^{***}	0.196^{***}		
	(0.019)	(0.029)	(0.016)	(0.017)	(0.031)	(0.016)	(0.024)	(0.016)	(0.025)	(0.027)		
ipeqopt	-0.241^{***}	-0.087^{***}	-0.115^{***}	-0.121^{***}	-0.200^{***}	-0.134^{***}	-0.075^{***}	-0.023	-0.187^{***}	-0.118^{***}		
	(0.025)	(0.030)	(0.017)	(0.019)	(0.033)	(0.017)	(0.028)	(0.021)	(0.030)	(0.026)		
ipshabt	0.010	-0.022	-0.035^{**}	-0.050^{***}	0.033	-0.016		-0.005	-0.029	-0.049^{**}		
	(0.019)	(0.025)	(0.014)	(0.016)	(0.025)	(0.014)		(0.016)	(0.025)	(0.024)		
impsafe	-0.010	-0.032		0.023		-0.019	0.050	0.025	0.014	-0.014		-0.066^{**}
	(0.020)	(0.027)		(0.016)		(0.016)	(0.039)	(0.019)	(0.024)	(0.022)		(0.031)
impdiff	-0.034^{*}	-0.034	0.028^{*}	0.016	-0.018		0.012	-0.001	0.027	0.057^{**}		
	(0.019)	(0.025)	(0.015)	(0.016)	(0.024)		(0.025)	(0.015)	(0.026)	(0.023)		
ipfrule	0.016	0.007		0.032^{**}	0.001	0.013		0.008	0.049^{**}			
	(0.017)	(0.022)		(0.015)	(0.022)	(0.014)		(0.014)	(0.024)			
ipudrst	-0.018	-0.014	-0.005	-0.024	-0.028		-0.038	-0.033	-0.029	0.028	-0.015	0.041
	(0.025)	(0.036)	(0.020)	(0.020)	(0.031)		(0.029)	(0.020)	(0.031)	(0.028)	(0.029)	(0.031)
ipmodst	-0.069^{***}	0.040	0.020	0.007	0.032	-0.006		0.017	-0.005	-0.013	-0.035	0.043
	(0.021)	(0.028)	(0.015)	(0.015)	(0.027)	(0.015)		(0.017)	(0.022)	(0.021)	(0.023)	(0.034)
ipgdtim	-0.129^{***}	0.017	0.005	0.031^{*}	-0.110^{***}	0.018		0.017	-0.034	-0.028	-0.037^{*}	-0.009
	(0.021)	(0.035)	(0.018)	(0.017)	(0.028)	(0.016)		(0.015)	(0.025)	(0.023)	(0.019)	(0.026)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
impfree	0.081***	0.061	0.072***	0.029*	0.062***	0.017		−0.017	0.053*	0.021		0.103***
	(0.022)	(0.038)	(0.019)	(0.017)	(0.022)	(0.016)		(0.018)	(0.031)	(0.022)		(0.035)
iphlppl	−0.015	−0.050	−0.026	−0.001	−0.037	−0.027	−0.046	0.021	−0.105***			
	(0.029)	(0.038)	(0.021)	(0.021)	(0.032)	(0.021)	(0.033)	(0.022)	(0.032)			
ipsuces	0.005	0.025	0.037**	0.017	−0.082***			0.038**	0.032	0.012		
	(0.021)	(0.027)	(0.016)	(0.018)	(0.027)			(0.016)	(0.027)	(0.025)		
ipstrgv	0.082***	0.084***	0.115***	−0.004	0.067***	0.090***	0.041	0.021	0.127***	−0.053**		−0.021
	(0.021)	(0.027)	(0.015)	(0.015)	(0.026)	(0.017)	(0.030)	(0.019)	(0.026)	(0.022)		(0.030)
ipadvnt	0.031*		0.031**	0.009	0.051**	0.010	0.021	0.018	0.055**	0.047*		
	(0.019)		(0.015)	(0.016)	(0.024)	(0.015)	(0.023)	(0.015)	(0.026)	(0.026)		
ipbhprp	0.029	0.023	0.011	0.045***	0.048*		0.021	0.052***	0.064**	0.080***	−0.053*	0.027
	(0.022)	(0.025)	(0.015)	(0.016)	(0.025)		(0.029)	(0.019)	(0.027)	(0.024)	(0.028)	(0.030)
iprspot	−0.043**	−0.040	−0.010	0.012			0.005	−0.021	−0.016	−0.041*		
	(0.019)	(0.026)	(0.014)	(0.016)			(0.023)	(0.015)	(0.025)	(0.024)		
iplylfr	0.146***	0.154***	0.029	0.009	0.036	0.028		0.064***	0.165***	0.158***		
	(0.034)	(0.047)	(0.026)	(0.023)	(0.038)	(0.022)		(0.024)	(0.035)	(0.032)		
impenv	−0.140***	−0.301***	−0.180***	−0.169***	−0.028	−0.029		−0.049**	−0.242***	−0.230***	−0.021	
	(0.025)	(0.038)	(0.019)	(0.020)	(0.029)	(0.019)		(0.021)	(0.032)	(0.025)	(0.033)	
imptrad	0.086***	0.127***	0.122***	0.091***	0.047**	0.064***	0.086***	0.026	0.079***	0.076***	0.087***	0.047*
	(0.019)	(0.027)	(0.014)	(0.015)	(0.023)	(0.014)	(0.026)	(0.018)	(0.024)	(0.021)	(0.031)	(0.027)
impfun	0.116***	0.032	−0.021	−0.040**		−0.057***		−0.017	0.027	−0.011		−0.043
	(0.021)	(0.027)	(0.015)	(0.017)		(0.016)		(0.016)	(0.027)	(0.025)		(0.027)
eduisced1			−0.338***	0.146	−0.067	−0.460		−0.696***	0.105	−0.631***		
			(0.101)	(0.175)	(0.118)	(0.292)		(0.193)	(0.262)	(0.115)		
eduisced2	0.145**	0.242**	0.009	0.584***	0.099	−0.274		−0.558***	0.306	−0.253***	0.084	0.034
	(0.066)	(0.109)	(0.059)	(0.175)	(0.094)	(0.262)		(0.188)	(0.251)	(0.074)	(0.061)	(0.085)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
eduisced3	0.204***	−0.046	0.048	0.859***	0.151*	−0.106		−0.444**	0.327			−0.064
	(0.046)	(0.118)	(0.045)	(0.178)	(0.082)	(0.263)		(0.187)	(0.250)			(0.070)
eduisced6		−0.114		1.010***	0.224***	−0.127	−0.211**	−0.319*	0.297	−0.003		
		(0.138)		(0.180)	(0.086)	(0.264)	(0.086)	(0.191)	(0.252)	(0.070)		
eduisced7	0.057	−0.146	−0.149***	1.078***		−0.265	−0.287***	−0.232	0.243	−0.179***	−0.121*	−0.211**
	(0.059)	(0.135)	(0.051)	(0.181)		(0.264)	(0.098)	(0.191)	(0.253)	(0.069)	(0.069)	(0.092)
eduisced8	0.064	−0.152	−0.122*	0.829***	0.229**	−0.228	−0.419***	−0.318	0.288	−0.495***	−0.041	−0.280*
	(0.095)	(0.173)	(0.063)	(0.185)	(0.107)	(0.268)	(0.151)	(0.198)	(0.257)	(0.110)	(0.122)	(0.164)
Round2	0.218**	0.126	−0.130**	−0.065	0.096	0.134*	0.276**	−0.282***	−0.620***	−0.114	0.213	0.668***
	(0.095)	(0.118)	(0.063)	(0.069)	(0.133)	(0.075)	(0.135)	(0.087)	(0.086)	(0.094)	(0.136)	(0.100)
Round3	0.166*	0.066	−0.174***	0.050	0.228*	0.016	0.328***	0.062	−0.201**	−0.179*	1.569***	0.703***
	(0.091)	(0.124)	(0.064)	(0.076)	(0.130)	(0.070)	(0.115)	(0.083)	(0.094)	(0.096)	(0.116)	(0.096)
Round4	0.123	0.107	0.069	0.230***	0.437***	0.226***	0.422***	0.080	−0.546***	−0.106	1.465***	−0.005
	(0.092)	(0.126)	(0.064)	(0.068)	(0.122)	(0.073)	(0.117)	(0.073)	(0.097)	(0.096)	(0.114)	(0.100)
Round5	−0.060	0.103	−0.028	0.232***	0.353***	0.441***	1.369***	−0.072	0.051	−0.243**	1.544***	0.267**
	(0.090)	(0.126)	(0.069)	(0.071)	(0.131)	(0.075)	(0.109)	(0.079)	(0.102)	(0.098)	(0.113)	(0.108)
Round6	−0.093	0.032	−0.057	0.365***	0.329**	0.292***	1.192***	−0.228***	0.136	0.029	1.551***	0.279***
	(0.089)	(0.123)	(0.072)	(0.067)	(0.133)	(0.078)	(0.110)	(0.076)	(0.102)	(0.096)	(0.111)	(0.105)
Round7	−0.050	0.025	0.007	0.429***	0.588***	0.368***	1.148***	−0.236***	−0.099	0.384***	1.870***	−0.137
	(0.088)	(0.124)	(0.073)	(0.070)	(0.137)	(0.076)	(0.124)	(0.075)	(0.098)	(0.098)	(0.116)	(0.108)
Round8	−0.106	0.287**	−0.083	0.479***	0.576***	0.662***	1.328***	−0.151**	−0.016	0.332***	2.014***	−0.074
	(0.089)	(0.122)	(0.074)	(0.070)	(0.137)	(0.078)	(0.121)	(0.072)	(0.106)	(0.098)	(0.126)	(0.101)
Round9	−0.121	0.395***	0.198**	0.346***	0.781***	0.747***	1.273***	−0.098	−0.077	−0.525***	2.166***	−0.891***
	(0.092)	(0.126)	(0.077)	(0.072)	(0.140)	(0.073)	(0.124)	(0.075)	(0.102)	(0.126)	(0.118)	(0.144)
Constant	5.394***	8.411***	5.678***	5.279***	7.459***	6.269***	5.000***	4.602***	7.436***	8.581***	4.150***	4.190***
	(0.342)	(0.491)	(0.276)	(0.377)	(0.431)	(0.369)	(0.366)	(0.327)	(0.499)	(0.414)	(0.296)	(0.423)

Continued on next page

Table E4: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
Observations	9,565	5,290	13,882	9,464	7,486	9,323	4,861	7,406	10,026	9,444	5,182	3,877
Variables	81	78	82	89	79	71	59	91	90	86	46	61
α	0.08	0.06	0.04	1	0.04	0.11	0.36	0	0.01	0.05	0.93	0.13
λ	0.066	0.1569	0.068	7e-04	0.2422	0.063	0.0469	0.2245	0.1689	0.0897	0.0197	0.1095
Adjusted R^2	0.21	0.35	0.22	0.23	0.27	0.2	0.19	0.17	0.27	0.28	0.19	0.29

*p<0.1; **p<0.05; ***p<0.01

Note: This table provides the full results of the post-elastic net PWLS regressions over all rounds for every country using the party-based left-right scale. This regression is used as a robustness check for the results in section 5.2. The standard errors are White (1980) heteroskedasticity robust standard errors. The results are discussed in section 5.2. The full variable descriptions can be seen from the variable list in Appendix C Table C1.

Table E5: Full structural changes regression

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ppltrst	−0.009	−0.010	−0.008	−0.049***	−0.018*	0.001	−0.023**	−0.035***	−0.035***	−0.011	−0.022*	−0.011
	(0.011)	(0.008)	(0.012)	(0.010)	(0.010)	(0.010)	(0.012)	(0.012)	(0.013)	(0.017)	(0.013)	(0.015)
pplfair	0.022*	−0.012	−0.007		−0.009	−0.008	0.014	0.010	−0.029**	−0.005	0.017	−0.003
	(0.011)	(0.008)	(0.013)		(0.011)	(0.013)	(0.012)	(0.014)	(0.014)	(0.017)	(0.014)	(0.016)
pplhlp	0.031***	−0.006			0.023**	−0.007	0.006	0.011	0.005		0.026*	0.010
	(0.010)	(0.008)			(0.011)	(0.012)	(0.010)	(0.011)	(0.011)		(0.013)	(0.015)
polintr	0.098***	−0.008	0.113***	0.036	0.086***	0.034	0.023	0.061**	0.038	0.070*		0.039
	(0.024)	(0.019)	(0.028)	(0.027)	(0.022)	(0.022)	(0.025)	(0.028)	(0.028)	(0.040)		(0.038)
trstprl	0.005	0.026***	0.011	0.035**	0.022*	0.017	0.014	0.039**		0.070***	0.038**	−0.025
	(0.013)	(0.009)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)	(0.016)		(0.020)	(0.017)	(0.018)
trstlgl	−0.023**	−0.029***	−0.075***	−0.050***		0.003	−0.021*	−0.077***	0.007	0.020	−0.033*	−0.073***
	(0.011)	(0.008)	(0.013)	(0.014)		(0.011)	(0.012)	(0.013)	(0.013)	(0.020)	(0.017)	(0.017)
trstplc	0.025**	0.038***	0.113***	0.060***	0.025***	0.026***	0.012	0.023*	0.037***	−0.078***	−0.040***	−0.011
	(0.011)	(0.009)	(0.013)	(0.014)	(0.009)	(0.010)	(0.014)	(0.014)	(0.013)	(0.016)	(0.014)	(0.015)
trstplt	−0.007	−0.014	0.014	0.010	0.007	0.015	0.007	0.023	−0.022*	0.002	0.020	0.068***
	(0.013)	(0.010)	(0.015)	(0.014)	(0.012)	(0.012)	(0.013)	(0.016)	(0.012)	(0.020)	(0.018)	(0.020)
vote	0.086		−0.088*	0.069	0.064	0.083*	0.091**	0.061	0.223***	0.064	0.150***	−0.150**
	(0.062)		(0.049)	(0.046)	(0.041)	(0.049)	(0.044)	(0.051)	(0.054)	(0.069)	(0.055)	(0.066)
contplt	0.064	0.033	0.184***	0.148***	−0.035	0.046	0.035	0.072	0.079*			−0.165**
	(0.048)	(0.036)	(0.060)	(0.050)	(0.043)	(0.047)	(0.040)	(0.046)	(0.044)			(0.081)
wrkprty	−0.197**	0.127**	−0.211*	0.024	−0.164	0.074	−0.235**	−0.109	−0.156**	−0.351	−0.103	0.287*
	(0.095)	(0.065)	(0.127)	(0.072)	(0.109)	(0.099)	(0.093)	(0.089)	(0.070)	(0.281)	(0.158)	(0.148)
badge	−0.157**	−0.243***	−0.066	−0.247***	−0.204***	−0.107	−0.016	−0.158*		0.463**	0.088	−0.156
	(0.071)	(0.060)	(0.068)	(0.072)	(0.065)	(0.073)	(0.043)	(0.086)		(0.219)	(0.110)	(0.182)
sgnptit	−0.030	−0.113***	−0.177***	−0.048	0.055	−0.042	−0.094***	−0.158***	−0.026	0.088	0.200**	0.100
	(0.043)	(0.029)	(0.047)	(0.040)	(0.034)	(0.047)	(0.036)	(0.041)	(0.037)	(0.137)	(0.080)	(0.083)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pbldmn	-0.124	-0.451^{***}	-0.674^{***}	-0.223	0.235	-0.830^{***}	-0.667^{*}	-0.197	-0.789^{***}	1.473^{***}		0.208
	(0.217)	(0.126)	(0.219)	(0.202)	(0.230)	(0.184)	(0.399)	(0.242)	(0.160)	(0.373)		(0.350)
bctprd	-0.264^{***}	-0.063^{**}	-0.089^{*}	-0.178^{***}		-0.278^{***}	-0.165^{***}	-0.335^{***}	-0.219^{***}	0.096	0.311^{***}	
	(0.057)	(0.029)	(0.048)	(0.042)		(0.057)	(0.036)	(0.053)	(0.043)	(0.156)	(0.107)	
clsprty	-0.016	-0.071^{**}	0.067	0.094^{**}		0.064	0.039	0.014		0.502^{***}	0.497^{***}	
	(0.035)	(0.028)	(0.043)	(0.039)		(0.039)	(0.032)	(0.035)		(0.062)	(0.061)	
stflife	0.015	0.054^{***}	0.033	0.050	0.020	-0.012	0.123^{***}	0.047	0.055^{*}	-0.028	0.064^{*}	0.046
	(0.037)	(0.021)	(0.039)	(0.037)	(0.034)	(0.041)	(0.033)	(0.039)	(0.031)	(0.040)	(0.033)	(0.038)
stfeco	0.069^{***}	0.033^{***}	0.081^{***}	0.031^{**}	0.047^{***}	0.017	0.045^{***}	0.051^{***}	0.033^{***}	0.027	0.006	0.019
	(0.012)	(0.008)	(0.014)	(0.012)	(0.010)	(0.011)	(0.011)	(0.013)	(0.011)	(0.021)	(0.016)	(0.018)
stfdem	-0.010	0.022^{***}	0.077^{***}	0.024^{*}	0.067^{***}	0.070^{***}	0.089^{***}	0.021	0.025^{**}	0.078^{***}	0.102^{***}	0.068^{***}
	(0.012)	(0.008)	(0.012)	(0.013)	(0.010)	(0.011)	(0.012)	(0.013)	(0.012)	(0.018)	(0.015)	(0.018)
stfedu	-0.006	0.024^{***}	-0.052^{***}	-0.015	-0.024^{**}	0.010	0.024	0.016		0.012	0.006	
	(0.012)	(0.008)	(0.012)	(0.011)	(0.010)	(0.011)	(0.014)	(0.013)		(0.016)	(0.013)	
stfhlth	0.053^{***}	0.017^{**}	0.053^{***}	0.016	-0.020^{**}	0.016^{*}	0.001	0.022^{*}	-0.051^{***}			0.007
	(0.014)	(0.007)	(0.012)	(0.011)	(0.009)	(0.009)	(0.010)	(0.011)	(0.011)			(0.014)
gincdif	-0.176^{***}	-0.184^{***}	-0.402^{***}	-0.264^{***}	-0.273^{***}	-0.131^{**}	-0.322^{***}	-0.329^{***}	-0.458^{***}	-0.154	-0.276^{***}	0.019
	(0.058)	(0.038)	(0.080)	(0.050)	(0.053)	(0.065)	(0.048)	(0.043)	(0.050)	(0.096)	(0.078)	(0.094)
freehms	-0.099	-0.115^{***}	-0.208^{***}	-0.261^{***}	-0.035	-0.090	-0.123^{***}	-0.176^{***}	-0.072	-0.008	-0.140^{*}	-0.153^{**}
	(0.065)	(0.042)	(0.074)	(0.058)	(0.059)	(0.079)	(0.042)	(0.064)	(0.048)	(0.078)	(0.072)	(0.076)
imsmetn	0.118^{***}	0.061^{**}	-0.020	-0.005	0.060^{*}	0.041	0.117^{***}		0.133^{***}	0.267^{***}	0.064	-0.067
	(0.033)	(0.026)	(0.047)	(0.040)	(0.036)	(0.037)	(0.032)		(0.036)	(0.035)	(0.053)	(0.057)
imdfetn	-0.112	-0.295^{***}	0.217	-0.131	-0.067	-0.109	-0.051	-0.175^{**}	-0.037	-0.237^{*}	0.051	0.025
	(0.077)	(0.062)	(0.136)	(0.087)	(0.078)	(0.093)	(0.076)	(0.078)	(0.078)	(0.139)	(0.112)	(0.115)
impcntr	-0.092^{***}	-0.116^{***}	-0.169^{***}	-0.227^{***}	-0.140^{***}	-0.066^{*}	-0.242^{***}	-0.146^{***}	-0.235^{***}	-0.182^{***}	-0.072	-0.146^{***}
	(0.033)	(0.026)	(0.041)	(0.040)	(0.034)	(0.036)	(0.033)	(0.033)	(0.043)	(0.051)	(0.054)	(0.051)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imbgeco	-0.003		0.003	0.030^{**}	0.012	0.017	0.047^{***}	-0.017		-0.036^{*}	0.024	0.033^{*}
	(0.011)		(0.015)	(0.013)	(0.011)	(0.013)	(0.011)	(0.013)		(0.019)	(0.015)	(0.017)
imueclt	-0.059^{***}	-0.065^{***}	-0.096^{***}	-0.084^{***}	-0.038^{***}	-0.006	-0.015	-0.090^{***}	-0.069^{***}	-0.021	-0.029^{*}	-0.047^{**}
	(0.012)	(0.009)	(0.014)	(0.012)	(0.011)	(0.014)	(0.012)	(0.012)	(0.011)	(0.019)	(0.015)	(0.018)
imwbcnt	-0.034^{***}	-0.038^{***}	-0.093^{***}	-0.090^{***}	-0.041^{***}	0.004		-0.040^{***}	-0.050^{***}	-0.003		-0.066^{***}
	(0.012)	(0.010)	(0.017)	(0.014)	(0.013)	(0.015)		(0.013)	(0.013)	(0.022)		(0.021)
happy	-0.015	-0.011	-0.024	0.038^{**}	-0.015	0.002	-0.037^{*}	0.013	0.078^{***}		-0.033^{*}	
	(0.018)	(0.012)	(0.018)	(0.019)	(0.015)	(0.015)	(0.019)	(0.022)	(0.018)		(0.020)	
sclmeet	-0.027^{*}	0.046^{***}	-0.014	0.021	-0.011	-0.010	0.010	-0.032^{**}	-0.012	0.023	-0.012	0.013
	(0.014)	(0.011)	(0.016)	(0.017)	(0.012)	(0.013)	(0.013)	(0.015)	(0.015)	(0.023)	(0.020)	(0.021)
sclact	-0.026	-0.054^{***}	0.012	-0.023	0.038^{*}	0.035	0.008	0.006	-0.034	0.005	-0.046	-0.042
	(0.019)	(0.017)	(0.028)	(0.023)	(0.020)	(0.024)	(0.019)	(0.021)	(0.026)	(0.039)	(0.031)	(0.034)
crmvct	0.179^{***}	0.110^{***}	0.122^{***}	0.131^{***}	0.056	0.043	0.052	0.117^{***}	0.101^{**}	0.229^{**}		0.083
	(0.041)	(0.042)	(0.047)	(0.049)	(0.039)	(0.049)	(0.035)	(0.044)	(0.043)	(0.099)		(0.081)
aesfdrk	-0.075^{***}	0.011	-0.071^{***}	-0.064^{**}		-0.030	0.026	0.046	-0.028	0.156^{***}	0.024	0.036
	(0.029)	(0.020)	(0.027)	(0.030)		(0.025)	(0.028)	(0.030)	(0.030)	(0.046)	(0.040)	(0.048)
health	0.068^{**}	0.022	0.016		0.049^{**}	0.042	0.076^{***}	0.043	0.048^{*}	0.054		-0.024
	(0.029)	(0.020)	(0.030)		(0.023)	(0.028)	(0.026)	(0.030)	(0.026)	(0.042)		(0.040)
hlthhmp	0.074	-0.049	0.035		-0.006	0.043	0.007	0.052	0.099^{**}		-0.055	0.012
	(0.051)	(0.035)	(0.056)		(0.046)	(0.058)	(0.040)	(0.047)	(0.049)		(0.069)	(0.072)
rlgdgr	0.115^{***}	0.040^{***}	0.095^{***}	0.058^{***}	0.043^{**}	0.035	0.044^{*}	0.028	0.023	0.113^{***}	0.112^{***}	0.066^{**}
	(0.022)	(0.015)	(0.032)	(0.022)	(0.020)	(0.029)	(0.023)	(0.018)	(0.019)	(0.033)	(0.035)	(0.028)
rlgatnd	0.079^{***}	0.044^{***}	0.109^{***}	0.002	0.009	0.045^{***}	0.075^{***}	0.098^{***}	0.030	0.098^{***}	0.153^{***}	0.332^{***}
	(0.016)	(0.014)	(0.022)	(0.017)	(0.015)	(0.016)	(0.019)	(0.016)	(0.020)	(0.031)	(0.031)	(0.029)
pray	-0.001	0.014	0.016			0.025^{**}	0.025^{***}	0.025^{**}	0.025^{**}	0.006	0.032^{*}	0.053^{***}
	(0.011)	(0.009)	(0.014)			(0.011)	(0.010)	(0.010)	(0.012)	(0.020)	(0.018)	(0.018)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
brncntr	0.111	0.004	0.166	0.031	-0.092	0.061	0.150			-0.273		0.416^{***}
	(0.095)	(0.077)	(0.107)	(0.089)	(0.076)	(0.084)	(0.128)			(0.289)		(0.130)
blgetmg	-0.127	-0.317^{***}	-0.228^{*}	-0.301^{***}	-0.148^{*}	-0.035	0.111	-0.358^{***}	-0.271^{**}	-0.171	-0.164	0.076
	(0.126)	(0.090)	(0.127)	(0.110)	(0.085)	(0.174)	(0.151)	(0.126)	(0.107)	(0.154)	(0.165)	(0.201)
facntr	0.178^{**}	0.210^{***}	0.271^{***}	0.199^{***}	0.063	0.052	0.326^{**}	0.319^{***}	0.210^{**}	-0.132	0.069	0.160
	(0.077)	(0.057)	(0.078)	(0.067)	(0.061)	(0.096)	(0.147)	(0.093)	(0.090)	(0.198)	(0.174)	(0.117)
mocntr	0.150^{*}	0.039	0.072	-0.073		0.071	-0.112	0.054		0.313	0.087	0.001
	(0.077)	(0.063)	(0.084)	(0.063)		(0.092)	(0.143)	(0.084)		(0.236)	(0.182)	(0.123)
gndr	0.246^{***}	0.162^{***}	0.098^{**}	0.336^{***}	0.035	0.007	-0.007	0.224^{***}	0.184^{***}	0.070	0.150^{***}	0.240^{***}
	(0.038)	(0.030)	(0.046)	(0.042)	(0.035)	(0.041)	(0.039)	(0.039)	(0.042)	(0.061)	(0.055)	(0.062)
agea	0.0002	0.004^{***}	0.003	0.003^{**}	0.008^{***}	0.007^{***}	0.017^{***}	0.0002	0.007^{***}	-0.018^{***}	-0.005^{*}	-0.009^{***}
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
domicil	-0.038^{**}	-0.035^{***}	-0.077^{***}	-0.081^{***}	-0.086^{***}	-0.016	-0.041^{***}	-0.073^{***}	0.058^{***}		0.059^{***}	-0.031
	(0.017)	(0.012)	(0.018)	(0.020)	(0.018)	(0.014)	(0.013)	(0.014)	(0.014)		(0.022)	(0.026)
pdwrk	0.105^{*}	0.069^{*}	-0.228^{**}	0.045		-0.027	0.144^{***}	-0.026	0.066	0.117	0.066	-0.091
	(0.061)	(0.040)	(0.104)	(0.050)		(0.069)	(0.047)	(0.054)	(0.068)	(0.103)	(0.074)	(0.085)
edctn	-0.086	-0.163^{***}	-0.292^{**}	-0.254^{***}	-0.193^{**}	-0.109	-0.021	-0.210^{***}	-0.323^{***}	-0.339^{***}	0.095	-0.118
	(0.074)	(0.056)	(0.128)	(0.089)	(0.085)	(0.098)	(0.069)	(0.074)	(0.073)	(0.130)	(0.088)	(0.088)
uempla	-0.189^{*}		-0.292^{**}	-0.182	-0.060	-0.019	0.142		0.173	0.067	0.078	-0.175
	(0.114)		(0.140)	(0.187)	(0.105)	(0.098)	(0.092)		(0.136)	(0.170)	(0.122)	(0.146)
uempli	-0.008	0.186	-0.367^{**}	0.276	0.193	-0.042	0.085	0.237^{*}	-0.427^{***}	0.249		
	(0.123)	(0.118)	(0.168)	(0.271)	(0.142)	(0.154)	(0.117)	(0.144)	(0.164)	(0.209)		
dsbld	0.073	0.120	-0.097	-0.109	-0.061	-0.051	0.253^{*}	-0.163^{*}	-0.115	0.352^{*}	-0.205	0.199
	(0.104)	(0.079)	(0.177)	(0.136)	(0.087)	(0.128)	(0.146)	(0.094)	(0.105)	(0.182)	(0.205)	(0.271)
rtrd	0.110	0.098^{*}	-0.273^{**}		0.036	-0.087		0.070	0.060	-0.207	-0.082	-0.184
	(0.078)	(0.055)	(0.122)		(0.054)	(0.084)		(0.070)	(0.089)	(0.137)	(0.107)	(0.120)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
hswrk	0.053	0.097***	−0.068		−0.044	−0.076	0.045	−0.019	0.035	−0.026	−0.042	−0.034
	(0.042)	(0.031)	(0.106)		(0.045)	(0.061)	(0.086)	(0.038)	(0.042)	(0.077)	(0.071)	(0.060)
uemp3m	−0.034	−0.091***	−0.089**	−0.128**	−0.008	−0.144***	−0.249***	−0.087**	0.041	0.015	0.053	0.055
	(0.042)	(0.030)	(0.045)	(0.056)	(0.039)	(0.045)	(0.035)	(0.044)	(0.045)	(0.069)	(0.056)	(0.062)
mbtru	−0.166	−0.323***	−0.515***	−0.206*	−0.232**	−0.119	−0.598***	−0.281***	−0.324***	−0.076	−0.161	−0.119
	(0.115)	(0.082)	(0.187)	(0.119)	(0.099)	(0.116)	(0.107)	(0.095)	(0.102)	(0.175)	(0.164)	(0.148)
atncrse	0.074*	0.033	0.171***	−0.034		0.047	−0.017	−0.044	−0.057	−0.051		0.100
	(0.040)	(0.030)	(0.048)	(0.043)		(0.044)	(0.037)	(0.039)	(0.040)	(0.082)		(0.063)
ipcrtiv	−0.008	0.017	0.046***	−0.029	0.032**	−0.033**	0.054***	−0.029	0.056***		−0.031	0.035
	(0.017)	(0.013)	(0.017)	(0.019)	(0.014)	(0.016)	(0.016)	(0.018)	(0.017)		(0.023)	(0.032)
imprich	0.097*	−0.027	0.130*	0.075	0.082*	0.082*	0.089**	0.071*	0.206***	0.149**	0.017	0.109*
	(0.055)	(0.035)	(0.071)	(0.048)	(0.045)	(0.045)	(0.044)	(0.043)	(0.044)	(0.068)	(0.058)	(0.060)
ipeqopt	−0.366***	−0.133***	−0.144*	−0.156***	−0.115**	−0.155**	−0.257***	−0.165***	−0.148***	−0.088	0.028	0.006
	(0.077)	(0.039)	(0.074)	(0.059)	(0.046)	(0.063)	(0.058)	(0.054)	(0.045)	(0.072)	(0.081)	(0.078)
ipshabt	−0.037**	−0.005	0.031*	−0.031*	−0.029**	0.026	−0.097***	−0.058***	−0.069***		−0.026	−0.023
	(0.017)	(0.012)	(0.018)	(0.017)	(0.014)	(0.018)	(0.016)	(0.019)	(0.018)		(0.024)	(0.028)
impsafe	0.055***	0.018	0.034*	0.017	−0.019	−0.012	0.022	−0.007	0.012		0.062**	0.009
	(0.018)	(0.013)	(0.018)	(0.018)	(0.015)	(0.020)	(0.017)	(0.018)	(0.016)		(0.028)	(0.032)
impdiff	0.005	−0.004		0.011	−0.006	0.035**	0.028*	0.024	0.022	0.025		0.004
	(0.018)	(0.012)		(0.017)	(0.015)	(0.017)	(0.017)	(0.019)	(0.018)	(0.027)		(0.029)
ipfrule	0.023	0.004	0.001	0.016	0.022	0.032**	0.054***	0.036**	0.015	−0.005		−0.018
	(0.015)	(0.011)	(0.017)	(0.015)	(0.013)	(0.016)	(0.015)	(0.018)	(0.018)	(0.023)		(0.022)
ipudrst	−0.044*	−0.014	−0.027	−0.028	−0.004	−0.044**	−0.028	−0.045**		−0.036	−0.040	−0.034
	(0.023)	(0.017)	(0.023)	(0.024)	(0.019)	(0.021)	(0.021)	(0.023)		(0.030)	(0.029)	(0.034)
ipmodst	−0.048***		−0.014	0.023		0.002	−0.013	−0.036**		−0.018		0.074**
	(0.019)		(0.020)	(0.018)		(0.017)	(0.015)	(0.016)		(0.030)		(0.036)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ipgdtim	-0.016	0.012	-0.045^{**}	0.039^{*}	-0.015	-0.028^{*}	0.007	-0.006	-0.018			-0.033
	(0.019)	(0.015)	(0.022)	(0.024)	(0.015)	(0.017)	(0.017)	(0.019)	(0.017)			(0.028)
impfree	0.084^{***}	0.053^{***}	0.039^{**}	0.081^{***}	0.028^{*}	0.044^{**}	0.037^{**}	0.018	0.012	0.037		0.032
	(0.020)	(0.016)	(0.017)	(0.024)	(0.016)	(0.020)	(0.017)	(0.023)	(0.017)	(0.032)		(0.037)
iphlppl	-0.035	-0.030^{*}	-0.033	-0.076^{***}	-0.055^{***}	0.012	-0.005	-0.062^{***}	0.023	-0.054	-0.018	-0.082^{*}
	(0.026)	(0.017)	(0.022)	(0.025)	(0.020)	(0.023)	(0.022)	(0.024)	(0.021)	(0.035)	(0.034)	(0.042)
ipsuces	-0.021	0.029^{**}	-0.054^{***}	0.016		0.017	0.050^{***}	0.040^{**}	0.037^{*}	-0.091^{***}	-0.060^{**}	-0.005
	(0.018)	(0.013)	(0.020)	(0.018)		(0.018)	(0.018)	(0.020)	(0.019)	(0.028)	(0.028)	(0.032)
ipstrgv	0.121^{***}	0.108^{***}	0.133^{***}	0.077^{***}	0.144^{***}	0.067^{***}	-0.034^{**}	0.157^{***}	-0.052^{***}	0.030		0.069^{**}
	(0.019)	(0.013)	(0.018)	(0.019)	(0.016)	(0.019)	(0.015)	(0.019)	(0.017)	(0.029)		(0.032)
ipadvnt	0.014	0.028^{**}	0.040^{**}		0.029^{*}	-0.044^{***}	0.014	0.037^{**}	0.027	0.017		0.032
	(0.017)	(0.013)	(0.018)		(0.016)	(0.016)	(0.017)	(0.019)	(0.019)	(0.025)		(0.024)
ipbhprp	-0.032^{*}	-0.004	0.050^{***}	0.030^{*}	0.022	0.045^{**}	0.047^{***}	0.042^{**}	0.034^{*}	0.021	-0.065^{**}	0.018
	(0.019)	(0.013)	(0.018)	(0.017)	(0.015)	(0.020)	(0.017)	(0.020)	(0.018)	(0.030)	(0.029)	(0.031)
iprspot	-0.011	-0.023^{**}	-0.020	-0.052^{***}	-0.036^{**}	-0.021	0.008	-0.039^{**}	-0.034^{*}		0.019	-0.007
	(0.017)	(0.012)	(0.017)	(0.018)	(0.014)	(0.016)	(0.016)	(0.018)	(0.018)		(0.021)	(0.028)
iplylfr	0.103^{***}	0.022	0.054^{**}	0.110^{***}		-0.010	0.051^{**}	0.060^{**}	0.129^{***}	-0.016		-0.081^{**}
	(0.030)	(0.022)	(0.025)	(0.031)		(0.024)	(0.023)	(0.026)	(0.024)	(0.038)		(0.036)
impenv	-0.054^{**}	-0.089^{***}	-0.059^{***}	-0.248^{***}	-0.044^{**}	-0.031	-0.123^{***}	-0.100^{***}	-0.184^{***}	0.031	-0.044	-0.079^{**}
	(0.023)	(0.016)	(0.021)	(0.025)	(0.017)	(0.021)	(0.020)	(0.023)	(0.018)	(0.039)	(0.034)	(0.038)
imptrad	0.038^{**}	0.071^{***}	0.026	0.133^{***}	0.103^{***}	0.027	0.116^{***}	0.089^{***}	0.070^{***}	0.063^{**}	0.124^{***}	0.067^{**}
	(0.017)	(0.012)	(0.017)	(0.017)	(0.013)	(0.018)	(0.015)	(0.017)	(0.016)	(0.029)	(0.031)	(0.027)
impfun	0.045^{**}	-0.020	-0.016	0.026	-0.035^{**}	0.021	0.009	0.022		0.016	-0.027	0.007
	(0.020)	(0.013)	(0.019)	(0.018)	(0.016)	(0.017)	(0.018)	(0.020)		(0.032)	(0.021)	(0.029)
eduisced1	0.168	-0.201^{**}	-0.185	0.097	-0.154	-0.611	0.363^{*}		-0.659^{***}			-0.386^{*}
	(0.159)	(0.089)	(0.141)	(0.083)	(0.230)	(0.378)	(0.215)		(0.099)			(0.201)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
eduisced2	0.363**	0.035	−0.035	0.131***	−0.191	−0.597	0.769***	0.079	−0.167***	0.078	0.023	−0.408**
	(0.152)	(0.048)	(0.136)	(0.047)	(0.173)	(0.373)	(0.214)	(0.078)	(0.062)	(0.103)	(0.108)	(0.196)
eduisced3	0.480***	0.024	0.099		−0.006	−0.465	1.015***	0.124	0.004	−0.010	−0.133	−0.570***
	(0.147)	(0.035)	(0.137)		(0.173)	(0.371)	(0.215)	(0.079)	(0.049)	(0.103)	(0.112)	(0.194)
eduisced6	0.409***		0.078	−0.085	−0.101	−0.470	1.250***	0.013		−0.269**	−0.011	−0.593***
	(0.150)		(0.144)	(0.073)	(0.175)	(0.373)	(0.217)	(0.084)		(0.119)	(0.131)	(0.204)
eduisced7	0.421***	−0.029	−0.005	−0.118*	−0.165	−0.450	1.246***	−0.016	−0.186***	−0.264**	−0.132	−0.689***
	(0.153)	(0.041)	(0.145)	(0.067)	(0.174)	(0.373)	(0.219)	(0.089)	(0.052)	(0.132)	(0.129)	(0.207)
eduisced8	0.520***	−0.104**	0.119	0.021	−0.198	−0.645*	1.026***	−0.088	−0.361***	−0.177	−0.150	−0.621**
	(0.168)	(0.051)	(0.160)	(0.110)	(0.179)	(0.376)	(0.222)	(0.094)	(0.078)	(0.172)	(0.186)	(0.245)
Round2	−0.800	−0.572	−0.708	0.784	−1.037*	0.179	−0.730	−1.105	0.070	1.391	0.738	−0.377
	(0.763)	(0.494)	(0.876)	(0.691)	(0.615)	(0.956)	(0.663)	(0.720)	(0.631)	(1.173)	(1.043)	(1.004)
Round3	−0.061	−0.641	−0.323	0.318	0.541	−2.087**	−0.230	−0.919	−0.284	1.058	0.911	0.517
	(0.773)	(0.497)	(0.782)	(0.744)	(0.606)	(0.819)	(0.755)	(0.766)	(0.654)	(1.110)	(0.961)	(1.074)
Round4	−1.000	0.150	−0.875	0.447	0.143	−0.549	0.166	−0.727	1.018	0.450	0.824	0.862
	(0.773)	(0.534)	(0.810)	(0.800)	(0.612)	(0.733)	(0.656)	(0.858)	(0.658)	(1.030)	(0.979)	(1.099)
Round5	−1.073	−0.549	−1.013	0.700	0.873	−2.433***	0.300	1.125	0.277	−0.290	−0.396	0.409
	(0.797)	(0.490)	(0.855)	(0.813)	(0.630)	(0.686)	(0.667)	(0.757)	(0.649)	(0.903)	(0.929)	(1.035)
Round6	−0.622	−0.645	1.615*	−0.470	0.456	−0.315	−0.274	1.201	0.317	−0.084	−1.547	0.348
	(0.781)	(0.519)	(0.848)	(0.883)	(0.656)	(0.686)	(0.640)	(0.764)	(0.634)	(0.851)	(0.991)	(1.145)
Round7	−0.704	−0.639	1.190	0.659	0.205	−1.853**	−0.114	−0.444	0.855	1.420	0.019	0.788
	(0.826)	(0.521)	(0.861)	(0.766)	(0.606)	(0.737)	(0.612)	(0.822)	(0.711)	(1.020)	(0.972)	(1.099)
Round8	0.080	−0.560	0.628	0.114	0.462	−1.113	0.044	0.075	1.703**	2.592**	−0.727	0.508
	(0.793)	(0.487)	(0.853)	(0.805)	(0.629)	(0.707)	(0.624)	(0.777)	(0.671)	(1.046)	(0.979)	(1.015)
Round9	0.139	−0.585	0.902	0.376	0.469	−1.628**	0.886	−0.385	2.129**	2.324**	−0.261	0.072
	(0.849)	(0.528)	(0.871)	(0.793)	(0.677)	(0.729)	(0.655)	(0.761)	(0.833)	(0.960)	(0.982)	(1.087)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imprich.Round2	0.016 (0.070)	0.101** (0.048)	0.034 (0.093)	0.009 (0.071)	0.064 (0.059)	−0.150** (0.073)	0.020 (0.061)	0.022 (0.062)	0.036 (0.063)	−0.072 (0.117)	−0.101 (0.086)	−0.108 (0.092)
imprich.Round3	−0.018 (0.070)	0.063 (0.047)	−0.051 (0.085)	−0.062 (0.068)	−0.049 (0.057)	0.074 (0.071)	0.024 (0.070)	0.034 (0.068)	0.084 (0.063)	−0.019 (0.099)	−0.020 (0.080)	−0.155* (0.091)
imprich.Round4	0.045 (0.071)	0.047 (0.049)	−0.033 (0.087)	−0.045 (0.070)	−0.010 (0.057)	−0.038 (0.059)	0.041 (0.061)	−0.006 (0.063)	0.038 (0.065)	−0.188** (0.095)	0.010 (0.079)	−0.061 (0.090)
imprich.Round5	0.015 (0.068)	0.044 (0.046)	−0.102 (0.086)	0.033 (0.072)	−0.008 (0.059)	−0.053 (0.060)	−0.019 (0.064)	0.052 (0.061)	−0.028 (0.069)	−0.087 (0.086)	0.014 (0.079)	−0.166* (0.088)
imprich.Round6	0.037 (0.070)	0.025 (0.048)	0.015 (0.096)	0.016 (0.066)	0.058 (0.059)	0.042 (0.056)	0.016 (0.059)	0.047 (0.066)	0.092 (0.066)	−0.052 (0.084)	0.056 (0.084)	−0.096 (0.093)
imprich.Round7	−0.092 (0.072)	0.086* (0.047)	−0.016 (0.093)	−0.045 (0.067)	−0.012 (0.061)	−0.100* (0.059)	0.053 (0.058)	0.004 (0.064)	0.021 (0.068)	−0.121 (0.089)	0.166** (0.081)	−0.023 (0.094)
imprich.Round8	−0.072 (0.070)	0.131*** (0.047)	−0.070 (0.096)	0.134* (0.071)	0.081 (0.062)	0.018 (0.057)	0.142** (0.060)	0.084 (0.064)	0.046 (0.069)	−0.126 (0.094)	0.170** (0.084)	−0.097 (0.086)
imprich.Round9	−0.033 (0.075)	0.099* (0.051)	−0.036 (0.089)	0.002 (0.071)	0.051 (0.069)	0.013 (0.060)	0.082 (0.065)	0.097 (0.063)	−0.019 (0.074)	−0.235** (0.094)	0.076 (0.087)	−0.118 (0.092)
ipeqopt.Round2	0.041 (0.095)	0.054 (0.056)	0.026 (0.099)	−0.128* (0.076)	−0.043 (0.067)	−0.022 (0.100)	0.144* (0.078)	−0.024 (0.081)	−0.091 (0.070)	−0.081 (0.114)	−0.231* (0.120)	0.194* (0.114)
ipeqopt.Round3	0.152 (0.098)	−0.075 (0.056)	−0.011 (0.089)	−0.020 (0.086)	−0.031 (0.061)	−0.064 (0.094)	0.048 (0.088)	0.010 (0.083)	0.107 (0.069)	−0.039 (0.119)	−0.119 (0.117)	−0.112 (0.131)
ipeqopt.Round4	0.186* (0.099)	−0.028 (0.058)	−0.020 (0.089)	0.021 (0.080)	−0.043 (0.064)	0.034 (0.081)	0.086 (0.076)	−0.044 (0.085)	−0.084 (0.069)	0.060 (0.107)	−0.162 (0.107)	−0.065 (0.134)
ipeqopt.Round5	0.140 (0.098)	−0.019 (0.056)	0.082 (0.096)	0.014 (0.089)	−0.098 (0.064)	0.137* (0.079)	0.155** (0.075)	−0.122 (0.091)	−0.022 (0.068)	0.120 (0.099)	−0.083 (0.110)	0.111 (0.125)
ipeqopt.Round6	0.190** (0.096)	0.054 (0.056)	−0.059 (0.097)	0.049 (0.092)	−0.085 (0.068)	0.043 (0.079)	0.041 (0.071)	−0.100 (0.082)	0.020 (0.066)	0.119 (0.100)	0.048 (0.116)	−0.113 (0.136)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
ipeqopt.Round7	0.115	−0.017	−0.119	0.007	−0.028	0.152*	0.138*	0.111	0.011	0.070	−0.162	0.055
	(0.102)	(0.060)	(0.104)	(0.082)	(0.067)	(0.083)	(0.075)	(0.083)	(0.072)	(0.108)	(0.117)	(0.136)
ipeqopt.Round8	0.107	0.005	−0.037	−0.061	−0.080	0.046	0.011	0.002	−0.006	0.084	−0.019	0.014
	(0.096)	(0.051)	(0.093)	(0.082)	(0.062)	(0.077)	(0.075)	(0.082)	(0.068)	(0.106)	(0.110)	(0.124)
ipeqopt.Round9	0.169*	−0.123**	−0.074	0.049	−0.121*	0.093	0.156**	0.028	−0.038	0.107	−0.072	0.358***
	(0.101)	(0.059)	(0.091)	(0.081)	(0.063)	(0.080)	(0.079)	(0.081)	(0.073)	(0.097)	(0.118)	(0.137)
stflife.Round2	−0.012	−0.032	0.022	−0.031	0.048	0.086	0.001	0.082*	−0.015	−0.045	−0.014	0.029
	(0.048)	(0.028)	(0.048)	(0.048)	(0.043)	(0.062)	(0.049)	(0.048)	(0.041)	(0.063)	(0.048)	(0.056)
stflife.Round3	0.011	−0.042	0.031	−0.041	−0.003	0.072	0.008	0.017	−0.035	−0.108*	0.044	0.059
	(0.046)	(0.029)	(0.045)	(0.049)	(0.041)	(0.056)	(0.055)	(0.048)	(0.043)	(0.059)	(0.047)	(0.058)
stflife.Round4	0.039	−0.028	0.114**	−0.034	0.016	0.044	0.007	0.040	−0.029	−0.087	0.013	−0.002
	(0.045)	(0.030)	(0.045)	(0.056)	(0.041)	(0.047)	(0.046)	(0.054)	(0.047)	(0.055)	(0.049)	(0.058)
stflife.Round5	0.052	−0.036	0.076	−0.0002	−0.004	0.034	0.001	0.004	0.026	0.078	−0.049	0.056
	(0.050)	(0.028)	(0.047)	(0.057)	(0.041)	(0.049)	(0.045)	(0.049)	(0.043)	(0.053)	(0.048)	(0.056)
stflife.Round6	−0.001	0.027	0.024	−0.005	0.020	0.078*	0.0002	0.018	−0.023	0.143***	0.038	0.053
	(0.049)	(0.029)	(0.047)	(0.057)	(0.041)	(0.045)	(0.046)	(0.051)	(0.044)	(0.049)	(0.047)	(0.059)
stflife.Round7	0.057	0.012	−0.016	0.011	0.034	0.066	−0.020	0.031	−0.038	0.126**	−0.029	−0.089
	(0.050)	(0.028)	(0.050)	(0.050)	(0.041)	(0.051)	(0.046)	(0.058)	(0.045)	(0.057)	(0.050)	(0.057)
stflife.Round8	0.057	−0.052*	0.035	−0.009	0.030	0.136***	0.011	0.034	0.003	0.092	0.021	0.005
	(0.050)	(0.028)	(0.048)	(0.054)	(0.042)	(0.051)	(0.044)	(0.053)	(0.043)	(0.062)	(0.051)	(0.053)
stflife.Round9	0.054	−0.012	−0.005	−0.015	0.088**	0.058	−0.065	0.036	−0.011	0.155***	0.085	0.003
	(0.051)	(0.031)	(0.048)	(0.054)	(0.043)	(0.048)	(0.046)	(0.053)	(0.049)	(0.057)	(0.053)	(0.057)
pbldmn.Round2	−0.268	−0.035	0.466	−0.364	−0.294	1.082***	−0.111	−0.271	0.092	−1.409		−0.089
	(0.293)	(0.174)	(0.287)	(0.264)	(0.342)	(0.385)	(0.608)	(0.315)	(0.219)	(1.163)		(0.444)
pbldmn.Round3	−0.555**	0.231	−0.237	0.007	−0.473	1.066***	1.096*	−0.879**	0.083	0.738		−0.005
	(0.279)	(0.197)	(0.261)	(0.304)	(0.318)	(0.341)	(0.636)	(0.356)	(0.239)	(0.614)		(0.474)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
pbldmn.Round4	−0.003	0.198	0.113	0.163	−0.234	0.884***	−0.311	−0.270	0.806***	0.085		−1.543**
	(0.289)	(0.187)	(0.265)	(0.288)	(0.317)	(0.230)	(0.482)	(0.398)	(0.248)	(0.743)		(0.779)
pbldmn.Round5	−0.299	−0.037	−0.478*	−0.163	−0.075	0.660**	−0.298	−0.215	0.403*	−1.203*		−1.138*
	(0.303)	(0.170)	(0.273)	(0.375)	(0.344)	(0.302)	(0.636)	(0.347)	(0.234)	(0.658)		(0.583)
pbldmn.Round6	−0.270	0.286	−0.052	0.161	−0.716**	0.924***	−0.182	0.259	0.123	−1.589***		−0.271
	(0.303)	(0.177)	(0.283)	(0.379)	(0.306)	(0.238)	(0.566)	(0.365)	(0.234)	(0.553)		(0.573)
pbldmn.Round7	−0.560*	0.160	0.267	−0.165	−0.748**	0.795***	−0.292	−0.364	0.430*	−0.656		−0.166
	(0.294)	(0.172)	(0.279)	(0.311)	(0.309)	(0.240)	(0.473)	(0.436)	(0.237)	(0.486)		(0.574)
pbldmn.Round8	−0.392	0.242	0.516*	−0.258	−0.545*	0.459*	0.168	−0.178	0.479**	−1.794***		−0.605
	(0.295)	(0.163)	(0.275)	(0.315)	(0.318)	(0.255)	(0.476)	(0.374)	(0.236)	(0.515)		(0.646)
pbldmn.Round9	−0.152	0.225	0.321	−0.037	−0.700**	0.526**	−0.447	0.211	0.011	−1.864***		−0.571
	(0.309)	(0.190)	(0.271)	(0.304)	(0.304)	(0.254)	(0.468)	(0.390)	(0.239)	(0.613)		(0.477)
rlgdgr.Round2	−0.032	0.003	0.021	−0.006	−0.020	−0.031	0.010	0.009	0.026	0.063	−0.060	0.024
	(0.029)	(0.020)	(0.040)	(0.028)	(0.029)	(0.048)	(0.031)	(0.025)	(0.026)	(0.050)	(0.051)	(0.042)
rlgdgr.Round3	−0.096***	0.041**	0.025	−0.011	−0.025	0.103**	0.009	0.034	0.012	0.051	0.004	0.050
	(0.029)	(0.020)	(0.037)	(0.028)	(0.027)	(0.040)	(0.035)	(0.025)	(0.026)	(0.047)	(0.046)	(0.040)
rlgdgr.Round4	−0.056*	0.018	−0.019	−0.025	−0.004	−0.020	0.045	−0.005	0.043	−0.060	0.009	−0.013
	(0.029)	(0.020)	(0.037)	(0.030)	(0.026)	(0.035)	(0.029)	(0.026)	(0.027)	(0.045)	(0.048)	(0.041)
rlgdgr.Round5	−0.072**	0.015	−0.040	−0.059*	−0.004	0.026	0.009	−0.011	0.001	−0.036	0.098**	0.032
	(0.028)	(0.019)	(0.038)	(0.031)	(0.026)	(0.035)	(0.029)	(0.025)	(0.027)	(0.040)	(0.044)	(0.043)
rlgdgr.Round6	−0.088***	0.012	−0.032	−0.023	−0.0002	−0.038	0.021	−0.018	0.033	−0.017	0.046	0.001
	(0.028)	(0.019)	(0.038)	(0.030)	(0.027)	(0.034)	(0.028)	(0.024)	(0.026)	(0.038)	(0.047)	(0.040)
rlgdgr.Round7	−0.079***	0.044**	−0.032	−0.031	−0.004	0.031	−0.014	−0.017	0.037	−0.169***	0.042	0.067
	(0.029)	(0.020)	(0.038)	(0.029)	(0.026)	(0.036)	(0.028)	(0.024)	(0.028)	(0.044)	(0.047)	(0.041)
rlgdgr.Round8	−0.083***	−0.0003	−0.002	−0.001	−0.020	−0.024	0.019	−0.011	−0.023	−0.145***	−0.005	0.015
	(0.027)	(0.019)	(0.037)	(0.029)	(0.025)	(0.033)	(0.028)	(0.023)	(0.027)	(0.043)	(0.047)	(0.037)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
rlgdgr.Round9	−0.078***	0.002	−0.041	−0.061**	−0.045*	0.016	−0.014	−0.007	0.010	−0.082**	0.046	0.008
	(0.028)	(0.020)	(0.036)	(0.029)	(0.026)	(0.033)	(0.029)	(0.024)	(0.028)	(0.042)	(0.048)	(0.036)
mbtru.Round2	−0.064	−0.172	0.004	−0.171	−0.015	−0.167	0.048	−0.007	−0.217	−0.395	0.168	0.080
	(0.153)	(0.114)	(0.246)	(0.160)	(0.137)	(0.183)	(0.155)	(0.144)	(0.150)	(0.272)	(0.235)	(0.219)
mbtru.Round3	−0.067	0.028	0.131	−0.294*	−0.009	−0.195	0.003	−0.001	−0.087	−0.310	0.358	0.078
	(0.151)	(0.115)	(0.231)	(0.169)	(0.133)	(0.179)	(0.182)	(0.140)	(0.147)	(0.275)	(0.230)	(0.221)
mbtru.Round4	−0.057	−0.105	0.230	−0.076	−0.063	0.083	0.073	−0.164	−0.229	−0.086	0.047	0.210
	(0.151)	(0.116)	(0.228)	(0.179)	(0.134)	(0.151)	(0.149)	(0.156)	(0.156)	(0.255)	(0.232)	(0.221)
mbtru.Round5	−0.009	−0.058	0.592**	−0.219	0.107	−0.030	0.221	−0.075	0.128	0.144	−0.057	0.061
	(0.150)	(0.113)	(0.238)	(0.190)	(0.136)	(0.168)	(0.154)	(0.141)	(0.152)	(0.232)	(0.226)	(0.222)
mbtru.Round6	−0.084	−0.098	0.131	−0.103	−0.188	0.057	0.241	0.013	−0.013	−0.087	0.230	−0.053
	(0.150)	(0.115)	(0.243)	(0.183)	(0.139)	(0.145)	(0.151)	(0.141)	(0.149)	(0.218)	(0.232)	(0.222)
mbtru.Round7	0.051	−0.074	0.110	−0.019	−0.092	0.083	0.327**	0.175	−0.049	−0.166	−0.101	0.018
	(0.154)	(0.111)	(0.252)	(0.174)	(0.136)	(0.156)	(0.145)	(0.138)	(0.157)	(0.244)	(0.249)	(0.226)
mbtru.Round8	−0.214	−0.009	0.140	−0.131	0.013	−0.044	0.253*	0.125	−0.255	−0.290	0.205	−0.147
	(0.150)	(0.110)	(0.234)	(0.189)	(0.133)	(0.152)	(0.154)	(0.141)	(0.158)	(0.252)	(0.245)	(0.205)
mbtru.Round9	−0.043	0.008	0.270	−0.200	−0.130	−0.017	0.034	0.045	0.007	0.211	0.309	0.023
	(0.151)	(0.116)	(0.235)	(0.181)	(0.136)	(0.154)	(0.156)	(0.140)	(0.169)	(0.240)	(0.272)	(0.210)
gincdif.Round2	0.148*	0.051	0.085	−0.067	0.071	−0.042	−0.003	−0.041	−0.096	0.006	0.372***	−0.009
	(0.076)	(0.054)	(0.101)	(0.070)	(0.072)	(0.104)	(0.067)	(0.066)	(0.070)	(0.167)	(0.117)	(0.137)
gincdif.Round3	−0.002	−0.004	0.097	−0.004	−0.024	0.043	−0.050	−0.123*	−0.051	0.088	0.160	−0.001
	(0.076)	(0.056)	(0.096)	(0.072)	(0.070)	(0.101)	(0.081)	(0.064)	(0.071)	(0.153)	(0.110)	(0.133)
gincdif.Round4	0.050	−0.086	0.043	−0.050	−0.012	0.027	−0.213***	−0.087	−0.039	0.417***	0.212*	−0.126
	(0.075)	(0.057)	(0.093)	(0.076)	(0.070)	(0.081)	(0.067)	(0.070)	(0.074)	(0.146)	(0.110)	(0.141)
gincdif.Round5	−0.002	−0.037	0.132	0.017	−0.090	0.088	−0.238***	−0.060	−0.042	0.170	0.172*	−0.071
	(0.077)	(0.053)	(0.098)	(0.077)	(0.071)	(0.084)	(0.068)	(0.064)	(0.072)	(0.128)	(0.101)	(0.136)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
gincdif.Round6	−0.051	−0.025	−0.025	−0.012	−0.006	−0.028	−0.062	−0.218***	0.036	−0.018	0.250**	0.136
	(0.074)	(0.054)	(0.100)	(0.076)	(0.072)	(0.079)	(0.066)	(0.065)	(0.072)	(0.118)	(0.111)	(0.138)
gincdif.Round7	−0.097	−0.091*	0.063	−0.084	−0.075	−0.007	−0.196***	−0.125*	−0.062	−0.061	0.337***	−0.152
	(0.077)	(0.055)	(0.099)	(0.075)	(0.069)	(0.086)	(0.063)	(0.066)	(0.075)	(0.130)	(0.113)	(0.131)
gincdif.Round8	−0.052	−0.010	0.053	−0.125*	−0.041	−0.004	−0.144**	−0.098	−0.134*	−0.088	0.356***	0.005
	(0.077)	(0.054)	(0.098)	(0.075)	(0.070)	(0.081)	(0.069)	(0.066)	(0.075)	(0.141)	(0.107)	(0.128)
gincdif.Round9	−0.090	0.041	0.106	−0.053	0.011	0.052	−0.229***	−0.116*	−0.379***	−0.324**	0.329***	−0.235*
	(0.082)	(0.056)	(0.097)	(0.076)	(0.081)	(0.083)	(0.073)	(0.066)	(0.086)	(0.139)	(0.121)	(0.126)
freehms.Round2	0.136*	−0.048	0.174*	0.167**	0.133	−0.056	0.025	0.132	0.023	−0.146	0.010	−0.023
	(0.081)	(0.058)	(0.095)	(0.079)	(0.083)	(0.130)	(0.063)	(0.095)	(0.073)	(0.128)	(0.102)	(0.110)
freehms.Round3	−0.007	0.059	0.127	0.155*	−0.044	0.126	−0.028	0.123	−0.001	−0.057	−0.069	0.025
	(0.083)	(0.058)	(0.091)	(0.083)	(0.082)	(0.118)	(0.072)	(0.096)	(0.078)	(0.123)	(0.098)	(0.116)
freehms.Round4	0.037	−0.034	0.239***	0.203**	0.074	−0.026	0.052	0.136	−0.029	−0.244**	0.089	−0.081
	(0.090)	(0.068)	(0.093)	(0.096)	(0.082)	(0.105)	(0.061)	(0.128)	(0.075)	(0.109)	(0.098)	(0.114)
freehms.Round5	0.210**	0.057	0.090	−0.032	−0.019	0.133	0.003	−0.051	0.047	−0.028	0.073	−0.006
	(0.088)	(0.061)	(0.101)	(0.092)	(0.095)	(0.098)	(0.065)	(0.092)	(0.083)	(0.103)	(0.098)	(0.114)
freehms.Round6	0.214**	−0.011	0.005	0.221**	−0.107	−0.089	−0.039	0.017	0.033	−0.104	−0.017	−0.077
	(0.085)	(0.062)	(0.098)	(0.090)	(0.096)	(0.099)	(0.061)	(0.100)	(0.075)	(0.094)	(0.101)	(0.111)
freehms.Round7	0.298***	0.143**	0.218**	0.098	−0.050	0.046	0.118*	0.016	−0.051	−0.185*	0.005	−0.013
	(0.094)	(0.067)	(0.109)	(0.090)	(0.086)	(0.106)	(0.062)	(0.106)	(0.095)	(0.106)	(0.102)	(0.124)
freehms.Round8	0.117	0.041	0.177*	0.211**	−0.033	0.012	0.013	0.052	−0.099	−0.237**	0.046	0.015
	(0.090)	(0.061)	(0.104)	(0.101)	(0.089)	(0.094)	(0.066)	(0.098)	(0.083)	(0.101)	(0.100)	(0.113)
freehms.Round9	0.138	0.123*	0.181	0.138	−0.102	−0.001	−0.056	0.081	0.059	−0.229**	−0.196*	0.084
	(0.097)	(0.070)	(0.121)	(0.099)	(0.090)	(0.102)	(0.076)	(0.097)	(0.111)	(0.109)	(0.103)	(0.123)
imdfetn.Round2	−0.068	0.072	−0.393***	−0.008	0.001	−0.015	−0.133	0.018	0.174*	0.165	−0.045	−0.111
	(0.095)	(0.075)	(0.152)	(0.107)	(0.094)	(0.141)	(0.099)	(0.099)	(0.099)	(0.185)	(0.142)	(0.151)

Continued on next page

Table E5: – continued from previous page

	Conservative			Liberal			Social democratic			Post-communist		
	Belgium	Germany	France	Switzerland	Great Britain	Ireland	Finland	Netherlands	Norway	Hungary	Poland	Slovenia
imdfetn.Round3	0.007	0.158**	−0.253*	−0.001	0.037	0.049	0.014	0.109	−0.037	0.120	−0.154	−0.065
	(0.095)	(0.074)	(0.148)	(0.104)	(0.090)	(0.124)	(0.113)	(0.099)	(0.097)	(0.186)	(0.141)	(0.156)
imdfetn.Round4	−0.060	0.196**	−0.252*	−0.200*	−0.083	0.023	−0.137	0.133	−0.138	0.372**	−0.263*	0.151
	(0.094)	(0.078)	(0.146)	(0.121)	(0.094)	(0.105)	(0.093)	(0.110)	(0.102)	(0.178)	(0.145)	(0.162)
imdfetn.Round5	−0.138	0.228***	−0.167	−0.070	0.050	0.155	−0.139	−0.012	−0.167	0.128	−0.004	−0.186
	(0.092)	(0.077)	(0.150)	(0.111)	(0.089)	(0.112)	(0.099)	(0.101)	(0.103)	(0.161)	(0.145)	(0.161)
imdfetn.Round6	−0.139	0.074	−0.498***	−0.129	0.094	−0.043	0.046	0.0001	−0.208**	0.183	−0.001	0.061
	(0.096)	(0.079)	(0.155)	(0.113)	(0.093)	(0.101)	(0.092)	(0.100)	(0.099)	(0.156)	(0.145)	(0.158)
imdfetn.Round7	−0.107	0.008	−0.524***	−0.174	0.095	0.123	−0.136	0.062	−0.115	0.038	−0.186	−0.012
	(0.101)	(0.080)	(0.158)	(0.117)	(0.092)	(0.106)	(0.092)	(0.104)	(0.108)	(0.167)	(0.145)	(0.163)
imdfetn.Round8	−0.127	0.083	−0.530***	−0.090	−0.069	−0.073	−0.105	−0.065	−0.210**	−0.274	−0.341**	−0.086
	(0.096)	(0.076)	(0.150)	(0.116)	(0.091)	(0.105)	(0.093)	(0.105)	(0.104)	(0.185)	(0.145)	(0.154)
imdfetn.Round9	−0.298***	0.038	−0.503***	−0.076	0.019	0.027	−0.057	−0.002	−0.193*	0.044	−0.336**	−0.263*
	(0.105)	(0.082)	(0.147)	(0.113)	(0.096)	(0.105)	(0.100)	(0.097)	(0.113)	(0.168)	(0.150)	(0.156)
Constant	4.648***	5.866***	6.099***	7.243***	5.406***	5.316***	3.621***	6.922***	6.376***	4.291***	4.343***	4.454***
	(0.660)	(0.408)	(0.730)	(0.593)	(0.509)	(0.704)	(0.563)	(0.586)	(0.503)	(0.792)	(0.766)	(0.801)
Observations	12,201	18,568	12,341	9,030	13,384	11,051	13,036	12,324	11,335	7,255	8,053	6,389
Variables	164	159	162	155	153	164	162	160	153	152	145	159
α	0	0.03	0.01	0.04	0.09	0	0.47	0.02	0.19	0.06	0.1	0.03
λ	0.1627	0.0516	0.1833	0.0954	0.0503	0.3396	0.0023	0.1245	0.0223	0.1557	0.1106	0.1909
Adjusted R^2	0.15	0.2	0.3	0.34	0.19	0.14	0.27	0.29	0.29	0.17	0.14	0.21

*p<0.1; **p<0.05; ***p<0.01

Note: This table provides the full results of the regressions investigating the structural changes over time. Every round dummy is interacted with the most important variables identified in sectiong 5.1. The standard errors are White (1980) heteroskedasticity robust standard errors. The results are discussed in section 5.3. The full variable descriptions can be seen from the variable list in Appendix C Table C1. Interest in politics and political activity is measured by the variable pbldmn (whether the respondent has participated in a demonstration), satisfaction with society is measured by stflife (satisfaction with life), immigration is measured by imdfetn (believes the country should accept more immigrants from other ethnicities than the majority in the country), wealth redistribution is measured by gincdif, tolerance for homosexuality is measured by freehms, religion is measured by the variable rlgdgr (religiosity), trade union membership is measured by mbtru, the human value universalism is measured by the variable ipeqopt (believing people should have equal opportunities), and the human value power is measured by the variable imprich (it is important to be rich).

Appendix F: Codebook

We have prodived our full code and datafiles in an available online folder, which can be found at: `https://1drv.ms/u/s!Akn4YswQUGOXgvVM6uXu56qgu_WHkw?e=Qwl9yy`, which is available until the 30th of June, 2020.

The folder contains the following R-code files:

1. Data cleaning.R
2. Pseudo Panel data preperation and regressions.R
3. PWLS data preperation and regressions.R
4. Structural changes regressions.R
5. Party-based robustness check panel data.R
6. Party-based robustness check PWLS.R
7. Figures and tables.R

The following data files are also included in the file

Data2002.csv

Data2004.csv

Data2006.csv

Data2008.csv

Data2010.csv

Data2012.csv

Data2014.csv

Data2016.csv

Data2018.csv

Our results can be replicated by running the code files in order