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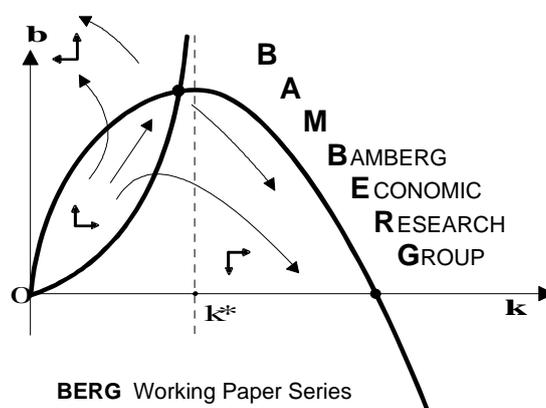Hans **Böckler**
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Inequality, Macroeconomic Performance and Political Polarization: An Empirical Analysis

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Inequality, Macroeconomic Performance and Political Polarization: An Empirical Analysis

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Abstract

This paper investigates the macroeconomic and social determinants of voting behavior, and especially of political polarization, for 20 advanced countries using annual data ranging from 1970 to 2016 and covering 291 parliamentary elections. Using a panel estimation approach and rolling regressions we find empirical evidence supporting that a) traditionally established mainstream parties (center-left, center, and center-right) are penalized for poor economic performance; b) far-left (populist and radical parties) parties benefit from increasing unemployment rates; c) greater income inequality has increased the electoral support for far-right parties, particularly in recent times. Further, we do not find empirical support for the notion that social and economic globalization has led to an increase of popularity of far-right parties. These results have wide reaching implications for the current political situation in the Western world.

Keywords: Income Inequality, Political Polarization, Globalization, Economic Voting Behavior

JEL classifications: E12, E24, E32, E44.

1   Introduction

The increasing support in recent times for populist and radical parties on the left and right of the political spectrum in many liberal democracies has motivated scholars to revisit historical accounts of political polarization (Berg-Schlosser and Mitchell, 2002; Larsen et al., 1980) and investigate the main determinants driving this phenomenon in terms of both exogenous socio-economic factors (Afonso and Rennwald, 2018; Anderson and Beramendi, 2012; Arzheimer, 2013; Bornschier and Kriesi, 2013; Han, 2016; Mian et al., 2014; Rydgren, 2003; Savage, 2019; Vlaicu, 2018) and more endogenous processes arising from party competition (Abou-Chadi, 2016; Hetherington, 2001; Hetherington and Weiler, 2009; Lachat, 2008; Wagner, 2012). Clearly, any adequate understanding of electoral outcomes requires attention to both dimensions as there is little doubt that voting behavior is partly driven by voters' 'demand' and preferences generated by exogenous processes, and partly by the attempts of party leaders and political entrepreneurs on the 'supply' side of political competition to mobilize voters. At any rate, the presence of strong radical and populist parties – often referred to as 'polarized pluralism' (Sartori, 1976) in political science – tends to lead to legislative fractionalization and makes the formation of ideologically coherent governments of the political center or legislative majorities more difficult (Tsebelis, 1999). The reason for this is that polarization is likely to generate a 'centrifugal' dynamic of party competition (Sartori, 1976, p.136) and increasing the probability of 'irresponsible oppositions' (Sartori, 1976, p.138). Polarization may be an obstacle to the formation of an elite consensus often deemed necessary to manage severe economic or political crises successfully (Zimmermann and Saalfeld, 1988). It may contribute to policy gridlock while governments are in office (Binder, 2004; Tsebelis, 2002) and to sharp policy discontinuity when governments change. It may increase the risk of cabinet instability in parliamentary and semi-presidential systems of government (Saalfeld, 2008), increase the likelihood of regime instability in presidential systems (Linz, 1990; Tsebelis, 2002) and contribute to inefficient budgets and legislation (König et al., 2010; Tsebelis, 1999; Tsebelis and Chang, 2004).

In the aftermath of the Great Recession of 2008-2009, many economists and political scientists sought to assess the effect of the economic downturn on political behavior. It could be shown that the level of political protest increased in Central and Eastern Europe, one of the regions hit most severely by the crisis (Beissinger and Sasse, 2014). There is also considerable evidence from qualitative case studies that the crisis triggered an interaction between popular, non-institutionalized protest and voting behavior in some cases (Kriesi, 2014). However, the effect of the Great Recession on voting behavior is ambivalent. There is considerable evidence that incumbent parties and governments are penalized by voters (Bartels, 2014) and that the penalties are more severe during a crisis (Dassonneville and Lewis-Beck, 2014; Fraile and Lewis-Beck, 2014). In Europe, new parties, especially new populist parties of the right benefited from the crisis (Kriesi, 2014), but – despite evidence of growing social inequality – there is little evidence that 'haves' and 'have-nots' responded to the recession in different

ways (Duch and Sagarzazu, 2014), or that working-class voters were particularly likely to support populist parties of the radical right or left than other voters (Mayer, 2014). Although electoral studies have produced a considerable amount of evidence, there is still a great deal of ambivalence. Studies are often based on national election studies of single, or a few, countries, typically from Western Europe or North America; most importantly, perhaps, the variation of relevant variables is observed for a limited period, although there is often an acknowledgement that economic crises, in particular, may show their consequences only with considerable lags (Kriesi, 2014, p. 297).

This paper's main objective is to contribute to a better understanding of the main determinants of voting behavior, and in particular of political polarization, with a focus on the 'demand side'. We will rely on a simplified but sufficient classification of parties according to their locations in a one-dimensional political space, referring to far-left parties as political parties placed to the left of traditional center-left parties (such as social democrats) and parties located to the right of traditional center-right parties (such as conservatives and Christian democrats). Our definition of political polarization is based on electoral support for such parties of the extreme left and right. Rather than including a possible second (e.g., cultural) dimension of political conflict (Inglehart and Norris, 2016), we will focus on a generalized socio-economic left-right dimension as an outcome variable, not least because our main independent variables are socio-economic and because this dimension has been shown to be the most salient dimension of political conflict and competition in the longer run (Benoit and Laver, 2006). In past research, very little has been found on the relationship between income inequality and political outcomes at an aggregate level. This is why a systematic study that analyzes the causal effect of income inequality on political polarization must be undertaken. We will investigate the extent to which

1. established mainstream parties are penalized for poor economic performance (irrespective of their role in government);

2. recessions and financial crises increase the electoral support for far-right parties;

3. far-left parties benefit from economic distress as captured by changes in unemployment rate;

4. income inequality shifts voting behavior in favor of far-left or far-right parties;

5. far-right parties benefit from globalization and social changes.

In a nutshell, our analysis delivered the following results: a) traditional mainstream parties (center-left, center, and center-right) lose electoral support to far-left (populist and radical parties) parties in periods of weak economic performance; b) far-left parties benefit by higher levels of unemployment rates; c) greater income inequality has raised the electoral support for far-right parties in recent times. Further, we do not find empirical support for the notion that social and economic globalization has led to an increase of popularity of far-right parties. The remainder of this paper is organized as

follows: We discuss the existing literature on economics, inequality and political polarization and derive a number of hypotheses concerning the connection between these phenomena in section 2. The econometric methodology we use in our analysis is described in section 3, as well as the estimation results. Finally, we draw some conclusions from our study in section 4.

2 On The Determinants of Political Polarization: Related Literature and Hypotheses

In this section we briefly review the existing literature on the link between economic performance, voting behavior and determinants of electoral and partisan polarization. Based on this literature, we will derive some working hypotheses that will be tested subsequently.

Research on the link between economic indicators such as unemployment, inflation, government debt or economic growth on the one hand and voting behavior on the other is a well-established and highly developed area in political science (Lewis-Beck and Stegmaier, 2013, 2019). At the micro level of individual voters, survey-based election studies have assessed the statistical association between respondents' voting intentions and their evaluations of their personal (egotropic) and of the general (sociotropic) economic situation both retrospectively with regard to the recent past and prospectively relating to the immediate future. Lewis-Beck and Stegmaier (2013, p. 370) summarize a large body of evidence accumulated since the 1970s as follows: "sociotropic evaluations overwhelm egotropic ones. The relatively strong impact of sociotropic retrospective evaluations seems equally clear, regardless of whether the democracy is new or old, low-income or high-income. What remains somewhat controversial is the impact of prospective economic voting". The evidence sifted by Lewis-Beck and Stegmaier also suggests that voters do not have much knowledge about the economy (ibid., p. 373-4) and that the extent to which they vote on perceived economic performance is conditioned by political institutions (e.g., the clarity of government responsibility for the economy) and other macro-level factors (see below). Finally, individual-level studies show that there is no evidence of an asymmetric impact of economic voting, i.e., the extent to which voters penalize government parties for poor economic evaluations is not stronger than the degree to which they reward satisfaction with economic performance.

In addition to such micro-level studies, there has been a long tradition of macro-level investigations which tend to examine the statistical association of aggregate measures of voting intentions and government popularity on the one hand and objective economic indicators on the other. Despite the different unit of analysis, macro-level studies have largely reflected the findings at the micro level with unemployment, inflation and GDP growth consistently being the most important predictors of government popularity and voting intentions. Although macro-level aggregate studies are unsuitable to investigate individual sources of government support, they do allow the modelling of longer-term

and cumulative effects of crises as well as of cross-national institutional differences. For example, research on the impact of macro-economic conditions on public support for the government shows the importance of cross-national variations in political institutions (Anderson, 1995; Hellwig and Samuels, 2008; Powell et al., 1993;) and differential exposure to global trade (Hellwig and Samuels, 2007). They also demonstrate that penalties for poor economic performance for incumbent parties generally come on top of a regular electoral cost of governing (Lewis-Beck and Stegmaier, 2013, p. 376-379).

However both micro-level and macro-level studies have left some questions unanswered. As Kriesi (2014, p. 300) argues, "[t]he economic voting literature has largely failed to account for the kind of parties that voters turn to when punishing the governing parties ..." After all, voters have the option of penalizing the government by supporting a mainstream opposition party. If voters, possibly affected by austerity measures in a crisis, resent all mainstream parties and established political elites, they may "turn to new challengers in the party system – provided such challengers are available – that typically mobilize with populist appeals, claiming the people have been betrayed by those in charge and they will redeem the people once they are in power" (ibid.). In a qualitative study of four countries, Kriesi (ibid.) finds that especially relatively *new* populist parties of this type benefited from the recession of 2008-2009, although their rise is not directly linked to the crisis.

The present study seeks to build on such work and use a quantitative macro-level design to illuminate the conditions for economic crises to benefit far-right and/or far-left parties contributing to a polarization of the party system both at the polls and in the legislatures. For the purposes of this study, we broadly follow the definition of political polarization provided by Mian et al. (2014) who describe this phenomenon as a situation where centrist parties lose electoral support to ideologically more extreme competitors. To identify the determinants of polarization, most scholars explain the increasing electoral support for far-left/right parties with a mix of 'supply-side' and 'demand-side' arguments (see Norris, 2005), i.e., voter demand for more radical policies and the supply of relevant political parties or political entrepreneurs competing in elections. Largely focusing on the literature of the demand-side, we are mostly interested in the economic factors that may lead to political polarization.

2.1 Economic Factors

2.1.1 Economic Performance

Some of the literature on political polarization emphasizes the close relationship between economic growth and electoral outcomes. The economic voting literature referred to above demonstrates that incumbent political parties are punished (rewarded) for a bad (good) economic performance. This is based on the idea that economic downturns may cause dissatisfied voters to take one of three actions: (1) they may switch from a governing party to a 'mainstream' opposition party; (2) more likely, they

may abstain; and (3) they may develop a certain amount of resentment against all mainstream parties and the established political elite which may be expressed in street demonstrations (Kriesi, 2014) or in particular electoral choices (Kramer, 1971). For instance, Kriesi (2014) and Bartels (2014) investigate the outcome of parliamentary elections in several countries after the financial crisis in 2008-2009. They find that government parties were punished at the polls after poor past economic performance as captured by negative changes in GDP and unemployment rate and that new populist parties of the far right and left gained in support. However, these studies do not indicate the conditions under which voters switch to politically extreme parties and what type of extreme parties, i.e. far-left or far-right, will benefit from this situation. The first working hypothesis in this study thus refers to the relationship between economic growth and the electoral support for traditional established parties:

Hypothesis 1a: Traditional established parties are penalized for bad economic performance

Further, other scholars have attempted to measure the impact of bad economic performance on the electoral support for far-left/right parties using the unemployment rate. However, the literature disagrees to identify which of the political extremes benefits from a deterioration of the overall labor market situation. One strand of the literature suggests a positive relationship between unemployment and the sucess of far-left parties. For instance, Visser et al. (2014) and March and Rommerskirchen (2015) find evidence for the electorate to turn in favor of far-left parties when the unemployment rate increases.[1] A second strand of literature has concentrated on the link between far-right parties and the unemployment rate. While some studies have been able to find a positive relationship (Jackman and Volpert, 1996), most empirical studies have reported either no statistical evidence (Swank and Betz, 2003; Lubbers and Scheepers, 2002) or a negative relationship (Knigge, 1998; Lubbers and Scheepers, 2000). Together, these studies do not deliver an unambiguous result concerning the link between unemployment and electoral support for far-right parties. Given this background, we investigate the following hypothesis:

Hypothesis 1b: Far-left parties benefit from increasing unemployment rates

2.1.2 Recessions and Financial Crises

From a theoretical point of view, some scholars have used the *clientele hypothesis* to claim that far-left parties may benefit in economically hard times (Rattinger, 1981; Nannestad and Paldam, 1994). This hypothesis emphasizes that economic downturns affect social groups unequally. It can be assumed that the voting behavior of those groups more affected will turn in favor of far-left parties, not least because far-left governments are likely to pursue redistributive policies that benefit lower-income groups by taxing the rich (Kelley and Evans, 1993). This perspective has not remained unchallenged, however.

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[1]Moreover, Bartolini (2000) shows that the success of communist parties has been historically more marked in countries with socioeconomic problems.

Other scholars have focused on the *conflict theory*, the *social capital theory*, and the *social identity theory* to link the success of far-right parties to economic grievances (Campbell, 1965; Putnam et al., 1994; Tafjel and Turner, 1979). These theories rely on the idea that economically hard periods generate inter-group social conflicts where different groups compete over scarce resources in the economy. This situation leads not only to an inter-group categorization in which individuals feel the existence of two different social groups, but also to favoritism to the in-group and discrimination to the out-group (Tafjel and Turner, 1986). This favoritism to the in-group can be related to authoritarian attitudes with respect to the out-group (Adorno et al., 1950).[2] Given this context, far-right parties are likely to link economic problems with particular out-groups, for example, the presence of immigrants and ethnic minorities.

Recent studies confirm these theoretical claims. For instance, Mian et al. (2014) show that the political environment became more polarized in the aftermath of recent financial crises in comparison to the period before the crisis. Using the database of Reinhart and Rogoff (2011) and the World Values Survey they demonstrate that the vote share of government coalitions decreases, the vote share of the opposition parties increases as does the fractionalization of the party system and voter polarization. Similarly, Funke et al. (2016) investigate the political aftermath of financial crises using a long-rung dataset covering 140 years. They find that far-right parties benefit after a financial crisis by increasing their vote share, on average, by 30%. However they do not find similar evidence for an increasing support of far-left parties.[3] Hence, we propose the following hypothesis:

Hypothesis 2: Recessions and financial crises increase the electoral support for far-right parties

2.1.3 Economic Inequality

Economic inequality has also been considered as a main factor in a large number of studies in the literature. For instance, Solt (2010) is a good illustration of how income inequality can alter the rates of electoral participation between rich and poor voters. He finds that higher levels of income inequality reduce the electoral participation of poor people. In another study, Gilens (2005) finds that the relatively higher rate of electoral participation among the rich results in policy choices that are biased toward their preferences. In addition, it seems that income inequality not only affects the rates of electoral participation, but also the ideological position of political parties. Pontusson and Rueda (2010) illustrate that left-wing parties move more to the left side of the political spectrum when income inequality increases. However, the extent in which left-wing parties will move to the left side will depend on the political mobilization of low-income voters.

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[2] For recent studies see Bornschier and Kriesi (2013) and Mayer (2014).

[3] Another important contribution related to the success of far-right parties is the work of de Bromhead et al. (2012) who shows how far-right parties benefit in hard economic periods during the 1920s and 1930s. They identify hard economic periods as contractions of GDP.

The significant increase in income and wealth inequality around the world over the last decades as documented by Atkinson et al. (2011), Piketty (2014) and Stiglitz (2012), among others, has brought this issue to the center of the political debate, particularly against the background of the increasing political polarization around the world. For instance, Voorheis et al. (2015) and Duca and Saving (2016) show how economic inequality has led to an increase of political polarization in the United States. In fact, McCarty et al. (2016) argue the actual polarization in American society may be partially explained by fiscal policy and the deregulations of the economy since the Reagan administration. Similarly, Grechyna (2016) uses data from the *World Values Survey* and finds a positive relationship between income inequality and political polarization. Nonetheless, the literature disagrees to identify which of the political extremes benefits when income inequality increases. Many empirical studies have focused on how social capital has affected European countries to understand the increasing popularity of far-right parties in the last years. For instance, Jesuit et al. (2009) examine how higher levels of inequality promote authoritarian attitudes in favor of far-right parties. However, they do not find evidence for this relationship. Moreover, Andersen and Fetner (2008) explore the relationship between social tolerance and economic conditions. They find that higher levels of income inequality diminish social tolerance towards out-groups (in their case toward homosexuals). In addition, Coffé et al. (2007) find that the far-right Vlaams Blok in Belgium is more likely to have a strong presence in prosperous municipalities. The authors explain these results with a *welfare chauvinism* hypothesis stating that periods of economic prosperity generate economic welfare. As a result, those benefiting from this situation protect their economic position by taking radical decisions in favor of far-left/right parties.

Very little has been found on the relationship between income inequality and political outcomes at an aggregate level. This is why a systematic study that analyzes the causal effect of income inequality on political polarization must be undertaken. In an attempt to investigate how societies react when income inequality increases, we examine the following hypothesis:

Hypothesis 3: Income inequality shifts voting behavior in favor of far-left/right parties

2.2 Social Factors

Besides the relevance of economic factors, scholars have also identified the globalization process and other social changes as further important determinants of political polarization. Since globalization can be conceptually understood as a deeper political, cultural and economic integration, it is possible that these processes may also generate considerable changes in societies which in turn may influence political outcomes. In general, the political science literature has emphasized the possible role of a 'cultural backlash' (Inglehart and Norris, 2016) and produced a thesis focusing on the 'losers of modernization' (Betz, 1994) to explain the growing popularity of far-left/right parties in recent decades.

According to the cultural backlash thesis, western societies have shifted toward more post-materialist values since the 1970s. These cultural transformations have created defensive reactions in some groups of the society, especially in those who hold traditional values dearer, are less educated and are older relative to the average population (the so-called silent revolution of the 1960s and 1970s). On the other hand, the thesis of losers of modernization emphasizes that some groups in society will not be able to adapt to the post-industrial processes originated by globalization. In particular, people with lower levels of education are the most affected by these transformations. Consequently, the political conflict is triggered by the fact that these groups feel that they are not being sufficiently represented by the mainstream parties. As a result, far-right parties have benefited from this situation, commonly leading to an increase of nationalism sentiments, accompanied with anti-immigrations attitudes.

Empirical research has demonstrated that cultural backgrounds play also a key role to vote for a populist party (Inglehart and Norris, 2016). However, they disagree about the linkage between far-right parties and the cultural context. While Knigge (1998) and Swank and Betz (2003) find a positive relationship between far-right parties and the level of immigration, Dülmer and Klein (2005) and Rydgren (2008) cannot find any statistical relationship between them. In this context, we want to investigate at the macro-level whether globalization and the related social changes can also change voting behavior significantly. While we do not measure cultural variables directly, we will evaluate the underlying claim of socio-cultural explanations based on the causal role of globalization. Accordingly, we state the following hypothesis:

Hypothesis 4: Far-right parties benefit from globalization and related social changes

The analytical procedures, the data and the obtained results are described in the next chapter.

3   Empirical Analysis

3.1   Methodology

We use panel OLS regressions with fixed-effects to test all hypotheses discussed in Section 2. In particular, we are interested in how changes in income inequality as well as social changes can influence electoral choices. More specifically, we estimate different specifications with five different dependent variables, namely the far-left vote share (FLVS), the far-right vote share (FRVS), the middle vote share (MVS), the government vote share (GOV) and the opposition share (OPO). Subsection 3.2 explains in detail the construction of all dependent variables. The general regression model can be described as follows:

$$Y_{it} = \beta G_{it-\tau}^{Market/Net} + \delta Glob_{it-\tau} + \theta X_{it-\tau} + \alpha_i + \epsilon_{it}$$

where the subscripts $i = 1, ..., N$ denote the respective countries, $t = 1, ..., T$ time and $\tau = 1, ..., T$ represents the lag number. Y_t is a $N \times 1$ vector of endogenous variable. G_t and $Glob_t$ are $N \times 1$ vectors containing our main explanatory variables, namely the Gini coefficient (either Market or Net) and a globalization measure to be defined below, respectively.[4] X_t is an $N \times K$ matrix with K being the number of further explanatory variables. This matrix comprises all control time-variant variables described in the next subsection. β is a 1×1 and θ a $K \times 1$ vector, respectively, that contain the regression coefficients. These coefficients capture the effect of the variable G (Gini coefficient either Market or Net) and the variables in X (the remaining explanatory variables) on the dependent variable Y. α_i is an $N \times 1$ vector of country fixed effects and finally ϵ_{it} is an $N \times 1$ vector of disturbances assumed to be normally distributed with zero mean and variance σ_ϵ^2.

3.2 Data Description

For our empirical analysis we use panel data for 20 advanced countries on annual basis ranging from 1970 to 2016. These countries are: Australia (AUS), Austria (AUT), Belgium (BEL), Canada (CAN), Switzerland (CHE), Germany (DEU), Denmark (DNK), Spain (ESP), Finland (FIN), France (FRA), the United Kingdom (GBR), Greece (GRC), Ireland (IRL), Italy (ITA), Japan (JPN), Netherlands (NLD), Norway (NOR), Portugal (PRT), Sweden (SWE) and the United States (USA).

Our dependent variables are based on the outcomes of parliamentary elections. For this purpose, we use the *Parliaments and Governments Database* of Döring and Manow (2015) that provides an extensive coverage of general elections in several democratic countries. We calculate the vote share of the far-left parties, the vote share of the far-right parties, the vote share of the government coalition and the vote share of the opposition of each parliamentary election for all countries of our sample.[5] In total we collect 291 parliamentary elections throughout 1970-2016. A list of all parliamentary elections analyzed in this paper can be found in Appendix A.

To identify parties according to their ideological position, we follow the party codification of Funke et al. (2016) who analyze the link between political outcomes and financial crises in 20 advanced economies from 1870 to 2014. Accordingly, the far-right vote share (FRVS) is composed by those political parties allocated in the political spectrum from right-wing populism to the radical right. These parties possess not only nationalistic and authoritarian attitudes, but also anti-immigrant sentiments. For example, the National Front in France and the Party for Freedom in the Netherlands belong in this category since they are considered anti-EU political movements and have criticized the EU elite for the uncontrolled flows of migrants and refuges from countries at war into Europe. Similarly, the far-left vote share (FLVS) is calculated by summing up all parliamentary seats of those parties ranging from left-wing populism to the radical left. These parties support greater egalitarianism based

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[4]See Subsection 3.2 for a detailed definition of all variables used in this paper.
[5]All national elections analyzed in this paper took place once in a year, with the only exception of Greece that two national elections took place in 2012. In this case we use the second election from that year.

on Marxism-Leninism positions and reject the actual international economic order such as Syriza in Greece and Podemos in Spain. A list of all parties that are categorized into the far-left and the far-right is shown in Appendix B.[6]

The government vote share (GOV) is calculated by analyzing those parties that belong to the government coalition. The database of Döring and Manow (2015) provides information of those parties that are represented in the cabinet for each parliamentary election, i.e. the government coalition. The opposition vote share (OPO) is calculated by identifying all those parties that are not part of the government coalition. We follow Mian et al. (2014) and Funke et al. (2016) and exclude those seats in the parliament without party affiliation since their position could vary between government coalition and opposition block.[7] Finally, in an attempt to capture the development of the electoral support from the traditionally established parties over time, we calculate the middle vote share (MVS) which is equal to the sum of the vote shares from those political parties that are no categorized into far-left/right, i.e. those parties that do not possess populist and/or radical positions. These parties have belonged to the government coalition after some elections and to the opposition block after others.

To test Hypothesis 1, we control for some key macroeconomic variables. First, we include the unemployment rate which describes the number of unemployed persons as a percentage of the labor force. Data for the unemployment rate was collected from several sources like the OECD Database, the Federal Reserve Bank of St. Louis, Eurostat and some country-specific sources. Second, we include the inflation rate measured as the annual growth rate of the GDP implicit deflator from the World Bank (2017). Third, we include the real GDP per capita expressed in 2011 US dollars stemming from the *Maddison Project Database, Version 2018* developed by Bolt et al. (2018) which provides comparable data on income levels for a broad sample of countries. Further, we also include the real index of house prices as provided by the OECD (2017), as a considerable increase in residential prices could affect negatively traditionally established parties and government coalition parties, and positively far-left/right parties. Finally, we include as a further control variable the housing credit (in real terms) that describes the amount of money that is provided by banks to households. This variable is obtained from Bank for International Settlements (2017).

To test Hypothesis 2, we include two dummy variables. The first dummy variable is a recession dummy constructed by applying the Bry and Boschan (1971) algorithm to the quarterly real GDP per capita series from Federal Reserve Bank of St. Louis. The list of all recessions in each country as identified by this algorithm is reported in Appendix C. The second dummy variable represents systemic financial crises defined as situations where the banking sector experiences difficulties, the financial corporations are unable to fulfill their obligations and many of them default on payments,

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[6]We are aware that this party classification many have some limitations, as many political parties have changed their ideologies and positions over time. Moreover, some political parties have disappeared or haved joined other political parties. Unfortunately, to the best of our knowledge there is no existing dataset which would account for these structural shifts in the analyzed countries.

[7]Since we are excluding those seats without party affiliation, it implies that the sum of far-left, far-right, government coalition and opposition block must not be equal to one in a parliamentary election.

a situation followed by gross fiscal costs and output losses (Laeven and Valencia, 2008, 2012). As a result, the central government intervenes to support the major financial institutions and to protect savers deposits. This dataset is drawn of the *Macrohistory Database* from Jordà et al. (2017). A list of systemic financial crises is shown in Appendix D.

To test Hypothesis 3, we use *The Standardized World Income Inequality Database* of Solt (2016) that reports income inequality data measured by the Gini coefficient. This dataset maximizes comparability of income distribution across countries over time. The Gini coefficient can take a value that ranges between 0 and 100, where 0 corresponds to perfect equality and 100 perfect inequality. The dataset reports two versions of the Gini coefficient. The Gini Market indicates income inequality before taxes and transfers, i.e. the Market income inequality; and the Gini Net indicates income inequality after taxes and transfers, i.e. the net income inequality. In this analysis we use both versions of the Gini coefficient to test Hypothesis 3.

Finally, we use the data underlying the *KOF Globalization Index* provided by Dreher (2006) as a measure of globalization. This dataset provides information about changes in the degree of globalization of several countries over time. The Globalization Index is constructed as a weighted measure of economic, political and social components. First, the economic component measures the degree of trade flows of a country: goods, services and capital. Higher levels of the economic component indicate less trade barriers. Second, the social component consists of migration rates and the flow of information related to access to TV and internet, among others. Finally, the political component indicates the level of international integration in terms of numbers of membership of international treaties. We use both the KOF Globalization Index as a whole as well as the social component to test Hypothesis 4. Last but not least, we also include as control variable the voter turnout rate from International IDEA (2019), as voters' dissatisfaction may not lead to an abrupt change in their voting behavior but, instead, may first crystalize in a temporary voting absence. Summary statistics of all variables used throughout this paper are reported in Appendix E.

3.3   Income inequality and political polarization: Some stylized facts

Figure 1 illustrates annual cross-country averages of vote shares for the countries of our sample from 1970 to 2016. The left vertical axis of Figure 1a represents the annual average of the extreme vote share which is equal to the sum of the far-left and the far-right vote shares. The right vertical axis of Figure 1a illustrates the middle vote share.[8]

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[8]See subsection 3.2 for a detailed explanation of all variables.

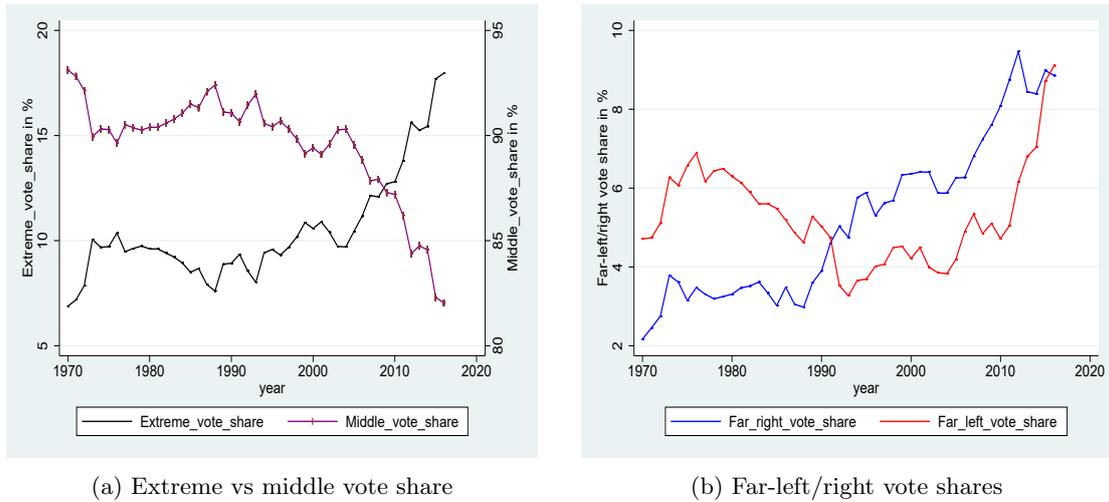(a) Extreme vs middle vote share   (b) Far-left/right vote shares

Figure 1: Vote shares (cross-country averages). Source: Döring and Manow (2015).

Figure 1a indicates that there was little variation between the extreme vote share and the middle vote share through the 1970s and 1980s. However, since the 1990s the extreme vote share started to increase, implying a decrease in the middle vote share. From 1990 to 2016 the extremist parties have on average more than doubled their presence in local parliaments. Figure 1b illustrates the composition of the extreme vote share in more detail. The left vertical axis of Figure 1b represents again the annual cross-country average of vote shares for far-left/right parties. As it can be observed, while far-right parties had a more or less constant vote share in the first two decades of our sample, the far-left parties experienced a steep decline in the parliamentary presence during the 1980s which can be related with the decline of the political influence of the Soviet Union. Since the beginning of the 1990s, however, both far-left and far-right parties experienced a surge in electoral support by the population, while moderate left and right parties experienced a significant decline in their parliamentary representation.[9]

As described in more detail in subsection 3.2, we use the two versions of the Gini coefficient reported by Solt (2016). Figure 2 shows the annual cross-country average of the net income inequality compared with the average vote shares presented in Figure 1.[10]

Figure 2 illustrates that the sharp increase in income inequality over the last two decades (see Stiglitz, 2012) went hand in hand with the surge of political extremism (both far-left and far-right)

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[9]It is also important to note that some countries in our sample data illustrate a relatively higher presence of radical and populist parties on both extremes of the political spectrum. The presence of far-left parties is relative higher in Greece, Spain, Italy, Ireland compared to the other countries of the sample. Similarly, the presence of far-right parties is more pronounced in Austria, Denmark, Finland, Norway and Switzerland compared to the other countries of the sample.

[10]Figure 5 in Appendix F illustrates the relationship between the average vote shares with the annual average of the Gini Market.

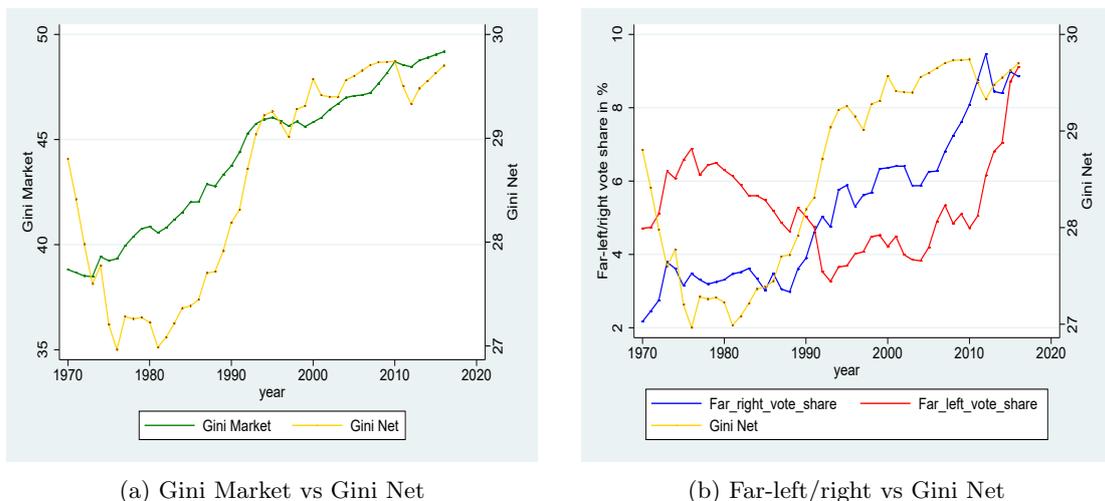(a) Gini Market vs Gini Net   (b) Far-left/right vs Gini Net

Figure 2: Vote shares vs Gini Net (cross-country averages). Sources: Döring and Manow (2015) and Solt (2016).

and the decline of electoral support for moderate parties from both left and right. This issue lets us think that inequality may be related with political polarization in a systematic manner.

3.4 Estimation Results

3.4.1 Far-left vs far-right vote shares

We start by discussing the results of the regression models which explain the electoral support of far-left and far-right parties. The sample in our baseline estimation is 1970-2016. However, in order to gain a better insight on more recent developments, as well as to investigate whether the introduction of the euro had a significant effect on the determinants of voting behavior in the analyzed countries, we run our regressions also for two subsamples: 1970-1999 and 2000-2016.[11] We estimate the regressions for each group (FLVS and FRVS) in two variants using the first lag $(t-1)$ of the explanatory variables to account for a possible endogeneity bias. Model 1 controls for the Globalization Index as a whole (equation 1) and Model 2 controls for the components of the Globalization Index independently (equation 2).

$$Y_{it} = \beta G_{it-1}^{Net} + \delta Glob_{it-1} + \alpha_i + \theta X_{it-1} + \epsilon_{it} \tag{1}$$

$$Y_{it} = \beta G_{it-1}^{Net} + \delta EcoGlob_{it-1} + \gamma SocGlob_{it-1} + \zeta PolGlob_{it-1} + \alpha_i + + \theta X_{it-1} \epsilon_{it} \tag{2}$$

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[11]The sample split is based on the notion that the introduction of the euro, which after a large number of countries in our dataset, may represent an important structural shift in many dimensions.

Since the independent variables have different measurements, we report the standardized regression coefficients to interpret our results in a more intuitive way.[12]

Table 1 shows the standardized coefficients of the panel OLS regressions with fixed effects using the first lag $(t-1)$ of the explanatory variables (and with the variable Gini Net) for the estimation sample 1970-2016.[13] While the first two columns of Table 1 report the results of Model 1 and Model 2 with respect to the far-left vote share (FLVS), the last two columns report the results of Model 1 and Model 2 with respect to the far-right vote share (FRVS).[14] As it can been observed in Table 1, the variable Gini Net, which measures the net income inequality, has a positive and statistically significant influence (at the 10 percent level) only on the FLVS in both baseline and extended specifications (Models 1 and 2), but not on the FRVS. The standardized coefficient 0.4 in FLVS(1) can be interpreted as follows: an increase of the net income inequality by one standard deviation increases the FLVS by 0.4 standard deviations on average. In addition, Table 1 illustrates that economic performance plays an important role for the FLVS, but not for the FRVS for the considered estimation sample. On the one hand, a poor economic development (represented by an increase in the unemployment rate and by a decrease in the growth rate of the real GDP per capita) rises the electoral support of far-left parties (FLVS). These two variables are statistically significant at the 5% level. On the other hand, Table 1 also shows that an increase in government expenditures (measured as % of GDP) affects negatively the FLVS. In addition, the recession dummy has a positive and statistically significant influence only with respect to the FLVS at the 10 percent level. These results support the *clientele hypothesis* according to which voting behavior turns in favor to those parties who support more equality in hard economic periods, i.e. far-left parties. Further, while the Globalization Index has a negative and statistically significant effect on the FLVS in Model 1, this is not true for the FRVS. After including the components of the Globalization Index separately in the regression (Model 2), we find a variety of interesting results. First, the economic component, which is an indicator of international trade restrictions, has a negative and statistically significant impact solely on the FLVS. This implies that higher levels of economic globalization (less international trade restrictions) reduce the electoral support of far-left parties, probably because of the positive employment effects of a higher trade integration.[15] Second, we find a statistically significant and positive (negative) link between the social component, which examines the cultural changes in a country, and the FRVS (FLVS) at the 5% (10%) level. This confirms that we are unable to reject Hypothesis 4 and that social changes seem indeed to increase the electoral

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[12]See Bring (1994) who discusses two possibilities to calculate standardized regression coefficients. In this paper, we calculate the standardized regression coefficients by multiplying the estimated coefficient with the ratio between the standard deviation of the independent variable with respect to the standard deviation of the dependent variable: $B_i = \hat{\beta}_i \cdot (\frac{\sigma_i}{\sigma_y})$.

[13]To test the robustness of our results, we also estimated Model 1 and Model 2 using panel OLS with random effects and standard Pooled-OLS with one lag. Both alternatives deliver quite similar results and are available upon request. We focus however on the fixed effects regressions as this is the preferred approach for macropanels.

[14]Table 7 in Appendix F indicates the results of the OLS regressions with fixed effects with one lag $(t-1)$ using the variable Gini Market.

[15]Indeed, the countries in our sample have been primarily benefited by their international economic integration. Running these regression models with different set of countries may deliver different results.

support of far-right parties as stated by Inglehart and Norris (2016). Third, the political component which measures the political integration of a country with respect to international institutions does not have any statistical effect on any of both groups.

Table 1: Panel OLS regressions of FLVS and FRVS with Gini Net (1 lag). Sample: 1970-2016

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net $(t-1)$	0.400*	0.340*	0.058	0.116
Unemployment rate $(t-1)$	0.442**	0.363**	0.003	0.035
RGDP growth $(t-1)$	-0.189**	-0.241***	-0.203*	-0.163
Inflation $(t-1)$	0.111	-0.023	-0.084	-0.041
Credit to HH/GDP growth $(t-1)$	-0.007	-0.003	-0.034	-0.046
Real house price growth $(t-1)$	0.087	0.102	0.073	0.081
Gov. expenditure/GDP growth $(t-1)$	-0.178**	-0.207***	-0.073	-0.049
Recession dummy $(t-1)$	0.069*	0.049	-0.029	-0.030
Financial crisis dummy $(t-1)$	0.042	0.021	0.009	0.023
Globalization Index $(t-1)$	-0.547*		0.123	
Economic glob. $(t-1)$		-0.329*		-0.154
Social glob. $(t-1)$		-0.438*		0.355**
Political glob. $(t-1)$		0.047		-0.068
Previous_left		0.282**		
Previous_right				0.103
Observations	174	173	174	174

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

When the components of the Globalization Index are considered separately, the discussed relationships are not significantly affected. The variables Gini Net and unemployment rate maintain the same sign and are both still statistically significant. Moreover, the impact of these two variables on the FLVS decreases slightly in Model 2. This provides empirical support for Hypothesis 1b and Hypothesis 3 after which both higher levels of unemployment rate and income inequality increase the electoral support of far-left parties, at least in the 1970-2016 sample. These findings are not only consistent with those of Visser et al. (2014) and March and Rommerskirchen (2015) who argue that the electorate turns in favor to far-left parties when the unemployment rate increases, but also with the work of Grechyna (2016) who finds that higher levels of income inequality increase political polarization. Another important conclusion of Table 1 is that there is no robust statistical evidence for a significant impact of the recession dummy on FLVS or on FRVS, so that Hypothesis 2 is not supported by our data.

Further, we find statistical support for political inertia (represented by dummy variables that indicate the presence of far-left/right parties in the previous parliament) which affects positively the actual electoral outcome for both groups, but this link is statistically significant only for the FLVS. Finally, it is worth highlighting the fact that besides from the social component of the Globalization Index the electoral support for far-right parties seems to be decoupled from macroeconomic fundamentals when the complete estimation sample is considered.

When the estimation results obtained with the variable Gini Net reported in Table 1 are compared with those obtained with the variable Gini Market reported in Table 7 in Appendix F, it turns out that the results are quite similar, with all coefficients maintaining the same sign and the variables that are statistically significant coinciding in both Tables. The difference between these two Tables relies on the impact of the explanatory variables on the FLVS and FRVS. According to Model 2 in both Tables, the impact of the variable G^{Net} on the FLVS is larger than the G^{Market} (0.340>0.246).

To check the robustness of our results, we run the same regression models with two and three lags to examine whether voters support radical parties by taking into account in their decision process longer periods of time. Similar to the previous results presented before, our estimation results are robust to this variation too.[16] Additionally, we estimated Model 1 and Model 2 excluding those parliamentary elections where far-left/right parties are part of the government coalition. This could be an important determinant, as Dornbusch and Edwards (1989) pointed out the negative consequences of having populist governments. The results are robust in the sense that economic distress plays an important role for the FLVS, but not for the FRVS. However, the Gini Net coefficient lose statistical significance when the whole sample is analyzed, but remain statistically significant when recent years are considered in line with the results of Table 4. These estimation results are also available upon request.

In addition, we also ran our regressions using the average of all independent variables in the periods between the parliamentary elections for each country.[17] Since it was not possible to make a meaning calculation of the year dummy variables, we exclude them from these estimations, i.e. we exclude the recession, financial crises and the previous far-left/right dummies. The results of the panel OLS regressions with fixed effects with the averages of the independent variables using the variable Gini Net are reported in Table 2.[18]

Table 2 indicates that economic performance play a decisive role for the electoral fortune of the FLVS in accordance to the previous table. This can be seen from the point of view that there is a positive statistical relationship between Gini Net, the growth rate of real GDP per capita and housing prices with FLVS. Although the unemployment rate also influences positively the FLVS, this variable is statistically insignificant. In addition, the inflation rate and credit to households become statistically significant and also affect positively and negatively, respectively the FLVS. These results also corroborates the *clientele hypothesis* after which far-left parties benefit from economic downturns. Again, the electoral support for far-right parties cannot be explained by macroeconomic developments.

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[16]Nonetheless, the Gini Net lose statistical significance.

[17]For example, parliamentary elections in Italy took place in (...), 1996, 2001, 2006, (...). Then, for the observation of the year 2001 in Italy, we calculate the average from 1996-2000. For the observations of the year 2006, we calculate the average from 2001 to 2005 and so on. This calculation was done for all independent variables in all countries.

[18]Table 8 in Appendix F reports the results of the panel OLS regressions with fixed effects using average values with the variable Gini Market.

Table 2: Panel OLS regressions of FLVS and FRVS with Gini Net (average). Sample: 1970-2016

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net	0.505*	0.472*	0.099	0.137
Unemployment rate	0.194	0.121	0.094	0.141
RGDP growth	-0.176**	-0.210**	-0.179*	-0.143
Inflation	0.394*	0.240**	-0.054	-0.004
Credit to HH/GDP growth	-0.267***	-0.308***	0.055	0.079
Real house price growth	0.143*	0.198**	0.126	0.103
Gov. expenditure/GDP growth	-0.077***	-0.072**	-0.044	-0.049
Globalization Index	-0.225		0.060	
Economic glob.		-0.124		-0.169
Social glob.		-0.518*		0.357**
Political glob.		0.269**		-0.094**
Observations	177	177	177	177

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In order to investigate in more detail the apparent structural shift in the relationships between income inequality, globalization and the electoral support for far-left and far-right parties, we estimate rolling regressions of the Model 2 specification using an estimation window of the length of the first subsample (1970-1999) up to the last estimation subsample (1987-2016). This procedure may provide an important opportunity to advance the understanding of the political consequences of a larger economic integration with the introduction of the Euro, as previously mentioned.[19]

Table 3 illustrates exemplarily the results of the standardized coefficients of the OLS regression with fixed effects with one lag with the Gini Net for the first subsample (1970-1999).[20] Two results in this table are particularly important. First, the income inequality coefficient is not statistically significant for the FLVS in this shorted subsample as in the previous regressions using the complete sample 1970-2016. Further, most of the explanatory variables are also not statistically significant in this first subsample besides from the unemployment rate for both FLVS and FRVS and social globalization for FRVS, suggesting that a structural change in these relationships may have happened over the estimation sample. Further, it is interesting to note that an increase in the unemployment rate seems to have led to a shift in the electoral support from far-right to far-left countries in this first subsample. Further, it seems also possible that the relative political stability experienced in this period of time diminished the electoral success of far-left/right parties.

Figure 3 shows the point estimates and the corresponding standard errors of four key coefficients: the Gini Net on the FLVS (Figure 3a), the Gini Net on the FRVS (Figure 3b), the Globalization Index on FLVS (Figure 3c) and the Globalization Index on the FRVS (Figure 3d) from the rolling

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[19]It should be however noted that this procedure comes at the cost of estimation accuracy because of the shorter estimation sample used in each of the rolling regressions.

[20]Table 9 in Appendix F illustrates the results of the panel OLS regressions using average values with the variable Gini Net.
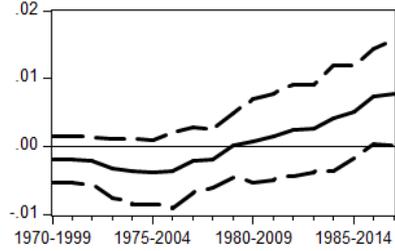
Table 3: Panel OLS regressions of FLVS and FRVS with Gini Net (1 lag). Subsample: 1970-1999

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net $(t-1)$	0.303	0.273	-0.182	-0.141
Unemployment rate $(t-1)$	0.353*	0.322**	-0.376*	-0.451**
RGDP growth $(t-1)$	-0.023	0.006	-0.218	-0.219
Inflation $(t-1)$	0.062	-0.076	-0.230	-0.119
Credit to HH/GDP growth $(t-1)$	0.121*	0.128**	-0.021	-0.072
Real house price growth $(t-1)$	0.069	0.006	0.057	0.115
Gov. expenditure/GDP growth $(t-1)$	0.031	-0.014	-0.123	-0.089
Recession dummy $(t-1)$	0.019	0.082	0.071	0.044
Financial crisis dummy $(t-1)$	0.037	0.066	0.009	0.009
Globalization Index $(t-1)$	-0.471		0.384	
Economic glob. $(t-1)$		-0.108		-0.025
Social glob. $(t-1)$		-0.763		0.712**
Political glob. $(t-1)$		0.013		-0.025
Previous_left		0.316*		
Previous_right				0.320
Observations	87	87	87	87

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
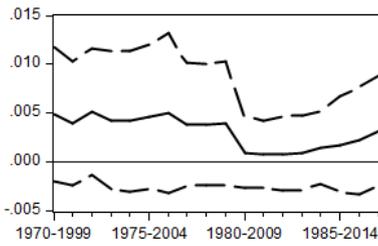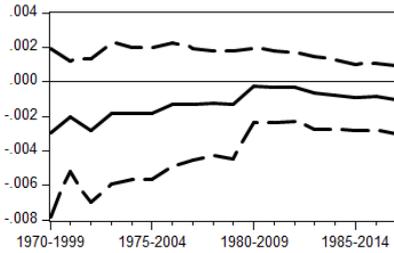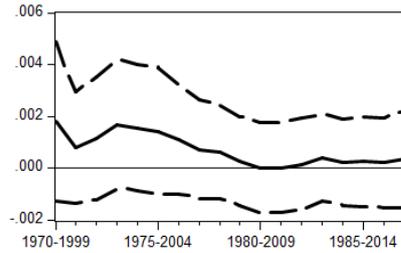

(a) Gini Net Coefficient on FLVS

(b) Gini Net Coefficient on FRVS

(c) Glob. Coefficient on FLVS

(d) Glob. Coefficient on FRVS

Figure 3: Time-varying coefficients (not standardized) obtained from rolling panel regressions of FLVS and FRVS.

panel regressions with different subsamples with a fixed estimation window length from (1970-1999)

up to (1987-2016).[21] While in the Figures 3a, 3c and 3d the point estimates are relative constant over time, according to Figure 3b, the effect of Gini net of the FRVS was negative and remained relative constant until 2005, when it started to gradually increase until it became positive in the year 2008. These coefficients are statistical insignificant for all estimation subsamples but the last one, which is related and is consistent with the estimation results summarized in Table 4. Income inequality seems thus to become a major driving force behind the rise of far-right parties in recent times.

Further, we run the same Model 1 and Model 2 specifications only for the subsample (2000-2016) using all 20 advanced countries, and using only the European countries in our country sample in order to assess whether the introduction of the euro changed the voting behavior relative to the pre-euro sample in all considered countries, as well as in European countries in particular. Tables 4 reports the estimation results for all countries for the 2000-2016 sample and for the European countries for the same sample. In general terms, this Table provides quite similar results, with the statistically significant coefficients being larger in the European estimations. Two differences should however be highlighted: while neither the Globalization Index nor its components are statistically significant in the FLVS regressions using all countries, in the European regressions the social component has a significant predictive power for the FLVS. By contrast, the political component of the Globalization Index is statistically significant and of a quite similar dimension in both all countries and European regressions.

In addition, when compared with the results reported in Table 3, we find that the results of the 2000-2016 sample are significantly different in various dimensions. While in the estimation of the subsample 1970-1999 using all countries the unemployment rate seemed to be the driving force behind the electoral outcomes of far-left and far-right parties, the estimates for the 2000-2016 sample reported in Table 4 suggest that income inequality cannot explain the electoral support of far-left parties, but it can very well, in a statistically significant manner, explain the recent popularity of far-right parties. This finding corroborates the ideas of Jesuit et al. (2009), who suggested that higher levels of income inequality increase the electoral support of far-right parties. As the sharp increase in economic inequality cannot be considered as an exogenous process but it has been instead promoted by active tax and labor market policies, the rise of far-right parties can be considered, to a certain extent, a product of failed political decisions.[22]

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[21]We also estimated rolling regressions using the components of the Globalization Index. These results can be found in Figure 6 in Appendix F. Moreover, we estimated rolling regressions using only the European countries in our sample, and found that the results remained unchanged both in terms of tendencies as well as of statistical significance. These Figures are available upon request.

[22]As a robustness check for the results for these two subsamples we estimated these regression models with the two- to five-year averages of all independent variables. Tables 9 and 10 in Appendix F corroborate the findings just discussed.

Table 4: Panel OLS regressions of FLVS and FRVS with Gini Net (1 lag).
Subsample: 2000-2016

| | All countries | | | |
	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net $(t-1)$	0.201	0.228	0.579**	0.636**
Unemployment rate $(t-1)$	0.758***	0.700**	0.098	0.160
RGDP growth $(t-1)$	-0.231***	-0.217***	-0.067	-0.052
Inflation $(t-1)$	0.085	0.088	0.047	0.039
Credit to HH/GDP growth $(t-1)$	-0.095	-0.110	-0.215*	-0.147
Real house price growth $(t-1)$	0.168**	0.153**	0.118	0.129*
Gov. expenditure/GDP growth $(t-1)$	-0.188***	-0.201***	0.139	0.117
Recession dummy $(t-1)$	-0.005	0.011	-0.041	-0.042
Financial crisis dummy $(t-1)$	0.075**	0.059	0.024	0.018
Globalization Index $(t-1)$	0.092		0.425**	
Economic glob. $(t-1)$		0.005		0.137
Social glob. $(t-1)$		0.072		0.122
Political glob. $(t-1)$		0.020		0.293*
Previous_left		0.111		
Previous_right				0.105
Observations	87	86	87	87
	European countries			
	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net $(t-1)$	0.262	0.284	0.606**	0.690*
Unemployment rate $(t-1)$	0.860**	0.839**	0.096	0.161
RGDP growth $(t-1)$	-0.269***	-0.265***	-0.127	-0.114
Inflation $(t-1)$	0.106	0.130	0.038	0.026
Credit to HH/GDP growth$(t-1)$	-0.060	-0.047	-0.269*	-0.194*
Real house price growth $(t-1)$	0.216***	0.231**	0.141	0.151*
Gov. expenditure/GDP growth $(t-1)$	-0.174***	-0.182**	0.136	0.116
Recession dummy $(t-1)$	-0.038	-0.031	-0.052	-0.069
Financial crisis dummy$(t-1)$	0.076*	0.057	0.050	0.035
Globalization Index $(t-1)$	0.174		0.161	
Economic glob. $(t-1)$		-0.086		0.122
Social glob. $(t-1)$		0.157***		0.026
Political glob. $(t-1)$		0.068		0.286*
Previous_left		0.120		
Previous_right				0.090
Observations	69	68	69	69

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Tables 4 contains other important results. Our estimation results for the 2000-2006 sample do not provide statistical support for Hypothesis 2 that recessions and financial crises increase the electoral support particularly for far-right parties as argued by Funke et al. (2016). Instead, we find that far-left parties have profited at the polls from the occurrence of financial crises in the last fifteen years. Further, we find that real house prices and the Globalization Index, and its political component in particular, may have influenced positively the electoral support for far-right parties in the last

fifteen years. We thus find empirical support for our Hypothesis 4 that far-right parties benefit from globalization and social changes.

3.4.2 Middle, government and opposition vote shares

Next, we analyze the determinants of the voting share of the "mainstream" parties (MVS)[23], the government coalition (GOV) and the opposition block (OPO). Table 5 contains the standardized coefficients of the panel OLS regressions with fixed effects with one lag $(t-1)$ using the variable Gini Net.[24]

Table 5: Panel OLS regressions of MVS, GOV and OPO with Gini Net (1 lag). Sample: 1970-2016

	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net $(t-1)$	-0.304*	-0.309**	-0.297**	-0.258*	0.293**	0.253*
Unemployment rate $(t-1)$	-0.294**	-0.268**	0.092	0.080	-0.089	-0.075
RGDP growth $(t-1)$	0.261**	0.267**	0.107	0.130*	-0.108	-0.130*
Inflation $(t-1)$	-0.017	0.029	0.131	0.113	-0.113	-0.097
Credit to HH/GDP growth $(t-1)$	0.027	0.042	-0.186	-0.197	0.184	0.194
Real house price growth $(t-1)$	-0.106**	-0.125***	-0.019	-0.014	0.026	0.023
Gov. expenditure/GDP growth $(t-1)$	0.167**	0.163**	0.118	0.111	-0.106	-0.096
Recession dummy $(t-1)$	-0.026	-0.013	0.036	0.047	-0.037	-0.053
Financial crisis dummy $(t-1)$	-0.034	-0.033	-0.101**	-0.104**	0.100**	0.103**
Globalization Index $(t-1)$	0.279		0.337*		-0.330*	
Economic glob. $(t-1)$		0.302*		-0.046		0.010
Social glob. $(t-1)$		0.086		0.327		-0.302
Political glob. $(t-1)$		-0.007		0.027		-0.007
Previous_populist		-0.121		0.128		-0.142
Observations	174	173	174	173	174	173

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We begin by describing the first two columns which report the results of the Model 1 and Model 2 specifications with respect to the MVS for the sample 1970-2016.[25] In general terms, these results are consistent with our previous findings and with the existing theories on economic voting behavior in many dimensions. First, we find that income inequality, the labor market situation, the overall macroeconomic performance and the fiscal stance, among other have a statistically significant linkage of the expected sign with the electoral support for mainstream parties. The comparison between this Table and Table 1 suggests that the variables that affect negatively (positively) the MVS, affect at

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[23]As a reminder, in an attempt to illustrate the development of the electoral support from the traditionally established parties over time, we calculate the middle vote share (MVS) which is equal to the sum of the vote shares from those political parties that are no categorized into far-left/right, i.e. those parties that do not possess populist and/or radical positions. These parties sometimes belong to the government coalition and sometimes to the opposition block.

[24]To check the robustness of our results, we also estimated Model 1 and Model 2 using panel OLS with random effects and standard Pooled-OLS, finding no significant differences in our results. As in the previous estimations, we also control for voter turnout.

[25]Table 11 in Appendix G contains the standardized coefficients of the OLS regressions with fixed effects with one lag $(t-1)$ using the variable Gini Market. Additionally, we estimated the regressions using average values as in Table 2. The estimation results are summarized in Table 12 in Appendix G.

the same time positively (negatively) the FLVS. In other words, far-left parties seem to benefit under economic distress at the expense of traditionally established parties. Further, according to the MVS Model 2 estimation results reported in Table 5, the variable Gini Net is the main negative driver of the MVS which means that an increase in the Gini Net by one standard deviation will reduce, on average, the MVS by 0.309 standard deviations.

Table 5 also illustrates that there is a statistically significant and positive relationship between the government expenditures with the MVS. These results not only match those observed in Kriesi (2014) and Bartels (2014), but we also show that the voting pattern shifts from traditionally established parties in favor to far-left parties in hard economic periods and vice versa. Table 5 also indicates that the Globalization Index in Model 1 influences the MVS in a positive manner, but its coefficient is not statistically significant. When we control for the components of the Globalization Index separately (Model 2), we find that there is a statistically significant and positive relationship between the economic component and traditional parties, but not with the government or opposition blocks. Higher levels of economic globalization thus not only increase the electoral support of the MVS, but also decrease the electoral support of far-left parties, as Table 1 suggested.

When we examine the results of the government coalition (GOV) and the opposition block (OPO), we find statistically significant impacts of the expect signs of the Gini Net, the real GDP growth, the financial crisis dummy and the Globalization Index on both dependent variables. Further, it can be observed that the government coalitions are penalized as net income inequality increases. This situation not only benefits far-left parties as shown in Table 1, but also opposition parties. Similarly, the occurrence of financial crises (represented by the financial crises dummy) reduce the political support of MVS and support indeed the rise of opposition parties, as argued by Funke et al. (2016).[26] Moreover, we can observe that the Globalization Index affects positively (negatively) the GOV (OPO). Unfortunately, we are unable to identify which component is the main driver of this effect since the three components of the Globalization Index are statistical insignificant. Taken together, we find empirical support for our Hypothesis 1a and we conclude that indeed incumbent political parties are punished at the polls in periods of weak economic performance.

Comparing these results using the Gini Net with the results obtained with the Gini Market reported in Table 11 in Appendix G, it becomes clear that not only the variable G^{Market} is not statistically significant, but also that the impact of other explanatory variables is lower when the variable G^{Market} is used. This suggests that the results obtained using the variable G^{Net} are more appropriate to

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[26]However, we are not able to corroborate the findings of Funke et al. (2016) that far-right parties in particular experience more electoral support after financial crises (see Tables 1, 3 and 4). The discrepancy of our results with those of Funke et al. (2016) may be due to the different sample size, control variables (they do not use a measure of income equality, for instance), and estimation techniques.

identify the determinants that lead to an increase/decrease of the political support for the traditional mainstream parties.[27]

Again, we estimate rolling regressions using the same procedure as in Figure 3 to gain further insights on the variation of the main coefficient estimates of our analysis.[28]

(a) Gini Net Coefficient on MVS   (b) Gini Net Coefficient on GOV   (c) Gini Net Coefficient on OPO

(d) Glob. Coefficient on MVS   (e) Glob. Coefficient on GOV   (f) Glob. Coefficient on OPO
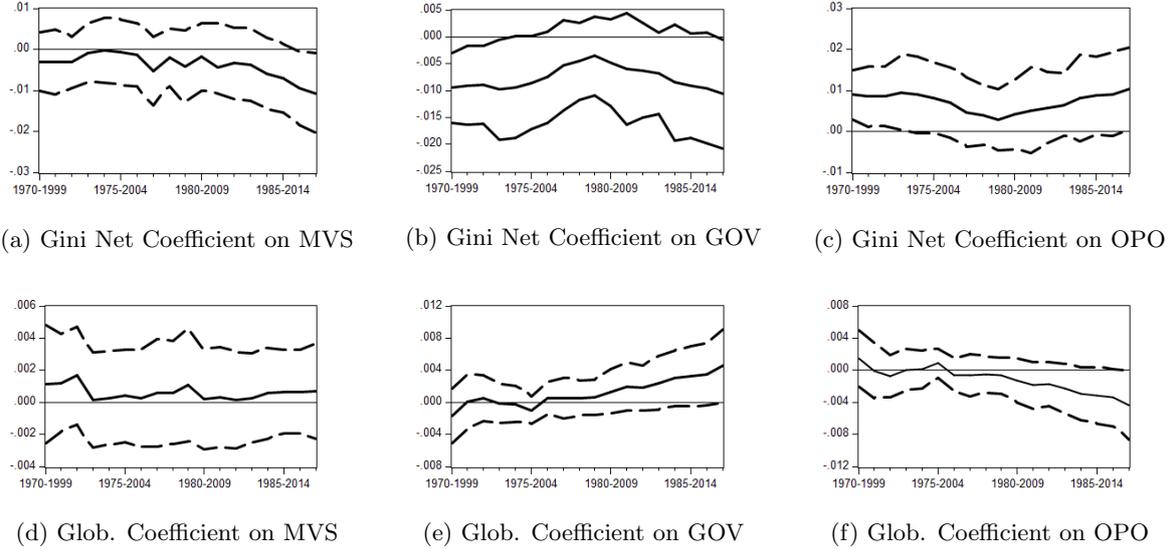
Figure 4: Time-varying coefficients (not standardized) obtained from rolling panel regressions of MVS, GOV and OPO.

Figure 4 illustrates two important results: First, the Gini coefficient on MVS (4a) shows a clear downwards tendency (i.e. a more negative value) in the subsamples starting from 1979-2008, implying that the loss of electoral support from mainstream parties can be related to the increasing income inequality in the considered countries in recent times. A similar development (though always in a statistically insignificant sense) can be observed for the decreasing electoral support of government coalition parties (4b), and the increasing success of opposition parties (4c). Second, the points estimates of the Globalization Index on the MVS remain relative constant over time (4d). Nonetheless, it seems to increase in the GOV (4e), while it decreases in the OPO (4f) regressions. This suggests that government coalitions have benefited from higher levels of globalization, while this is not true for the OPO. This may be surprising at first but is in line with findings about the effect of economic openness and globalization on the economic vote: 'In nations with open economies that are especially dependent on foreign trade, citizens might find it difficult to decide whom to hold responsible for economic ups

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[27]As a consequence of excluding those populist government coalitions, a statistical positive association between the government expenditures (as % of GDP) and the OPO at 5% level can be observed. These results are available upon request. Moreover, we also estimate the same regressions with two and three lags to identify whether voters also react to large shocks. Here, we can confirm that the Gini Net affects negatively (positively) the GOV (OPO) until three lags.

[28]Figure 7 in Appendix G illustrates rolling regressions using the components of the Globalization Index. Analogous rolling regressions using only European countries deliver same results. These Figures are available upon request.

and downs. (Lewis-Beck and Stegmaier, 2013, p. 372; see also Hellwig, 2001 and Fernández-Albertos, 2006)

Analogously to the previous subsection, we split our estimation sample in two shorter subsamples with the objective to analyze the political consequences of a more economic integration with the introduction of the Euro. While Table 13 in Appendix G reports the results of the standardized coefficients of the OLS regressions for the first subsample which covers the period from 1970 to 1999, Table 6 does so with the results of the second subsample from 2000 to 2016.

Table 6: Panel OLS regressions of MVS, GOV and OPO with Gini Net (1 lag). Subsample: 2000-2016

| | All countries | | | | | |
	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net $(t-1)$	-0.552***	-0.563***	-0.148	-0.141	0.147	0.138
Unemployment rate $(t-1)$	-0.557***	-0.584***	0.142	0.163	-0.132	-0.153
RGDP growth $(t-1)$	0.197***	0.188**	0.144	0.152	-0.142	-0.148
Inflation $(t-1)$	-0.089	-0.090	0.110	0.112	-0.093	-0.094
Credit to HH/GDP growth$(t-1)$	0.218**	0.180*	0.286	0.319	-0.280	-0.308
Real house price growth $(t-1)$	-0.193**	-0.202***	-0.243*	-0.237*	0.259*	0.252*
Gov. expenditure/GDP growth $(t-1)$	0.019	0.033	-0.014	-0.026	0.036	0.047
Recession dummy $(t-1)$	0.033	0.037	0.023	0.018	-0.018	-0.015
Financial crisis dummy $(t-1)$	-0.066	-0.053	-0.188**	-0.199**	0.184**	0.194**
Globalization Index $(t-1)$	-0.370**		0.430*		-0.428*	
Economic glob. $(t-1)$		-0.082		0.100		-0.136
Social glob. $(t-1)$		-0.142		0.190		-0.177
Political glob. $(t-1)$		-0.217		0.187		-0.186
Observations	87	87	87	87	87	87
	European countries					
	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net $(t-1)$	-0.658***	-0.694***	-0.118	-0.099	0.093	0.072
Unemployment rate $(t-1)$	-0.681**	-0.718**	0.191	0.255	-0.176	-0.227
RGDP growth $(t-1)$	0.289***	0.270***	0.082	0.081	-0.089	-0.092
Inflation $(t-1)$	-0.104	-0.116	0.093	0.111	-0.084	-0.099
Credit to HH/GDP growth $(t-1)$	0.253*	0.192	0.375*	0.436	-0.357*	-0.412
Real house price growth $(t-1)$	-0.262**	-0.273***	-0.215	-0.185	0.232	0.208
Gov. expenditure/GDP growth $(t-1)$	0.016	0.041	-0.024	-0.034	0.035	0.047
Recession dummy $(t-1)$	0.067	0.069	-0.047	-0.066	0.045	0.059
Financial crisis dummy $(t-1)$	-0.092	-0.070	-0.191*	-0.206*	0.195*	0.210*
Globalization Index $(t-1)$	-0.248		0.275		-0.313	
Economic glob. $(t-1)$		-0.017		0.025		-0.059
Social glob.$(t-1)$		-0.129		0.159		-0.172
Political glob. $(t-1)$		-0.239		0.213		-0.211
Observations	69	68	69	68	69	68

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Finally, we run again estimation for the 2000-2016 with all countries and only European countries to investigate possible differences in European countries resulting from the European monetary uni-

fication. As in Table 4, the statistically significant coefficient estimates in the European estimations reported in Table 6 are larger in absolute size than those using all 20 countries in our sample, implying that the significant determinants have a larger impact in Europe than in the rest of the world. More specifically, we find a negative influence of a higher income inequality on MVS, as well as a positive influence of real GDP growth per capita, as expected. The Globalization Index coefficient is statistically significant in the MVS (negative), in the GOV (positive) and in the OPO (negative) regressions, but turns out to be statistically insignificant in all European regressions.

In summary, the results reported in these two last Tables suggest that the increase in income inequality has contributed to the loss in electoral acceptance of mainstream parties in the second subsample, indicating that the results from Table 5 are mainly driven by the second subsample which covers the period from 2000 to 2016.[29]

4   Concluding Remarks

In recent decades, many mature liberal democracies in Europe and beyond have experienced growing social inequality on the one hand and increasing social protest and political polarization on the other. Yet, despite a great deal of sophisticated quantitative and qualitative research, the link between social and economic change and its political repercussions still requires further work. While it is a well-established finding in scholarship on 'economic voting' that governments will be penalized for poor economic performance, less is known on the conditions for voters to switch to politically radical parties on the left or right rather than abstaining or voting for a mainstream opposition party. Not least, scholarship seeking to explain the rise of populist parties of the radical right or left has not specified the conditions for voters to switch either to a radical right-wing or, alternatively, a radical left-wing party. Finally, crises often have a delayed impact while most empirical studies of the effect of economic crises have been relatively short-term. Also, the current literature in political science offers few insights into the question whether, and to what extent, the effect of social inequality and other variables has changed over time historically.

This paper seeks to address some of these questions. Answers are normatively important as they help us to understand the conditions for social and political grievances to be translated into political responses at the systemic level. The responsiveness of liberal democracies is often seen as a key condition for their 'input-oriented legitimacy' (Scharpf, 1999). Given the close link between liberal democracies and liberal market economies as institutions, the way discontent with growing inequality is translated in representative democracies is a crucial question for both sets of institutions. *When grievances are translated by strengthening radical parties of the left and/or right, they will lead to the polarization of political conflict in legislatures and other decision-making bodies, potentially*

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[29]The two subsamples 1970-1999 and 2000-2016 were also estimated with the calculations of the average of all independent variables and are reported in Table 14 and Table 15 in Appendix G. They support these results.

reducing the effectiveness of the system in responding to crises. This constitutes a challenge to the 'output-oriented legitimacy' (Scharpf, 1999) of political systems.

Against this background we investigate the determinants of political polarization from the demand-side of voters using a panel analysis based on annual aggregate data for 20 advanced economies between 1970 and 2016. The study covers 291 parliamentary elections. Our empirical analyses deliver a variety of interesting insights to complement the existing literature on economic voting: On the one hand, our analyses support the accepted wisdom of the literature on economic voting showing that government parties get penalized for poor economic performance. In addition, our results support accounts claiming that far-left parties have benefited from periods of weak economic performance, while mainstream parties (irrespective of their government status) have been penalized at the polls. Moving beyond standard accounts, we find that income inequality has become a main driver for the growing electoral support of far-right parties and opposition parties, while it is simultaneously associated with electoral losses for mainstream and government parties. Rather than focusing on a 'second', cultural dimension of political conflict (a claim investigated in a large number of analyses), we demonstrate that hard bread-and-butter issues and social inequality matter in explaining the recent popularity of far-right parties in Western European democracies. Our findings on the effect of globalization and social change suggest that potential cultural factors are an important part of the story, but that social inequality should not be ignored and is an important part of a more complete explanation. Our results also reveal that the effect of many explanatory variables has changed over time: our rolling panel design allows us to discern several interesting changes. Not only do our findings suggest a time-varying and/or regime-dependent nature of voter support for far-left and far-right parties, but also an interesting interplay between macroeconomic and social electoral outcomes. While we do not explicitly model the effect of different government policies (e.g., redistributive taxation or welfare expenditure), policy studies demonstrate that the increase in income inequality is not a natural phenomenon but the result of policy choices made by governments, including policies on taxation benefiting the more affluent groups in Western societies to the detriment of groups at the lower end of the income ladder (OECD, 2010). Thus, the rise of far-right parties can be considered to a certain extent as a home-made problem which can be addressed through public policy.

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Appendix

A Parliamentary elections 1970-2016

Australia	1969, 1972, 1974, 1975, 1977, 1980, 1983, 1984, 1987, 1990, 1993, 1996, 1998, 2001, 2004, 2007, 2010, 2013, 2016
Austria	1970, 1971, 1975, 1979, 1983, 1986, 1990, 1994, 1995, 1999, 2002, 2006, 2008, 2013
Belgium	1968, 1971, 1974, 1977, 1978, 1981, 1985, 1987, 1991, 1995, 1999, 2003, 2007, 2010, 2014
Canada	1968, 1972, 1974, 1979, 1980, 1984, 1988, 1993, 1997, 2000, 2004, 2006, 2008, 2011, 2015
Switzerland	1967, 1971, 1975, 1979, 1983, 1987, 1991, 1995, 1999, 2003, 2007, 2011, 2015
Germany	1969, 1972, 1976, 1980, 1983, 1987, 1990, 1994, 1998, 2002, 2005, 2009, 2013
Denmark	1968, 1971, 1973, 1975, 1977, 1979, 1981, 1984, 1987, 1988, 1990, 1994, 1998, 2001, 2005, 2007, 2011, 2015
Spain	1977, 1979, 1982, 1986, 1989, 1993, 1996, 2000, 2004, 2008, 2011, 2015, 2016
Finland	1970, 1972, 1975, 1979, 1983, 1987, 1991, 1995, 1999, 2003, 2007, 2011, 2015
France	1968, 1973, 1978, 1981, 1986, 1988, 1993, 1997, 2002, 2007, 2012
United Kingdom	1970, 1974, 1979, 1983, 1987, 1992, 1997, 2001, 2005, 2010, 2015
Greece	1974, 1977, 1981, 1985, 1989, 1990, 1993, 1996, 2000, 2004, 2007, 2009, 2012, 2015
Ireland	1969, 1973, 1977, 1981, 1982, 1987, 1989, 1992, 1997, 2002, 2007, 2011, 2016
Italy	1968, 1972, 1976, 1979, 1983, 1987, 1992, 1994, 1996, 2001, 2006, 2008, 2013
Japan	1969, 1972, 1976, 1979, 1980, 1983, 1986, 1990, 1993, 1996, 2000, 2003, 2005, 2009, 2012, 2014
Netherlands	1967, 1971, 1972, 1977, 1981, 1982, 1986, 1989, 1994, 1998, 2002, 2003, 2006, 2010, 2012
Norway	1969, 1973, 1977, 1981, 1985, 1989, 1993, 1997, 2001, 2005, 2009, 2013
Portugal	1975, 1976, 1979, 1980, 1983, 1985, 1987, 1991, 1995, 1999, 2002, 2005, 2009, 2011, 2015
Sweden	1970, 1973, 1976, 1979, 1982, 1985, 1988, 1991, 1994, 1998, 2002, 2006, 2010, 2014
United States	1970, 1972, 1974, 1976, 1978, 1980, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016

There are in total 291 parliamentary elections. The data has been drawn by Döring and Manow (2015). Dictatorial regimes are not considered throughout this paper. This means Spain 1970-1976, Greece 1970-1973 and Portugal 1970-1974.

B Far-left and far-right parties from 1970 to 2016

Australia	Right	Australia First, Citizens Electoral Council, One Nation, Rise Up Australia
	Left	Communist Party of Australia, Democratic Socialist Electoral League, Democratic Socialist Perspective, Socialist Alliance
Austria	Right	Alliance for the Future of Austria, Freedom Party of Austria, Movement for Political Renewal
	Left	Socialist Left Party, Communist Party of Austria
Belgium	Right	Flemish Block, Flemish Interest, Libertarian-Direct- Democratic, National Front, People's Party, People's Union
	Left	Communist Party of Belgium, Left Socialist Party, Worker's Party of Belgium
Canada	Right	No parties identified
	Left	Communist Party of Canada, Communist Party of Canada - Marxist-Leninst
Switzerland	Right	Freedom Party of Switzerland, Geneva Citizens' Movement, Swiss Democrats, Swiss People's Party, Ticino League
	Left	Alternative Left, Autonomous Socialist Party, Progressive Organizations of Switzerland, Solidarity, Swiss Party of Labour
Germany	Right	Alternative for Germany, Civil Rights Movement Solidarity, German Party, German People's Union, Law and Order Offensive, National Democratic Party of Germany, Patriots for Germany, Popular Vote, Pro Germany, Pro German Middle, Statt Party, The Offensive
	Left	Action Democratic Progress, Alliance of Germans, Collection to Actions, German Communist Party, German Union for Peace, Marxist-Leninist Party of Germany, The Left
Denmark	Right	Danish People's Party, Progress Party
	Left	Communist Party of Denmark, Common Course, Left Socialists, Socialist People's Party, Unity List-Red?Green Alliance
Spain	Right	Basque Left, Basque Nationalist Party
	Left	Communist Party of Spain, We Can, In Common We Can, Workers' Party of Marxist Unification, United Left
Finland	Right	Finns Party, Finish Rural Party
	Left	Communist Worker's Party, Communist Party of Finland, Finnish People's Democratic League, Left Alliance
France	Right	Movement for France, National Front, National Republican Movement
	Left	French Communist Party, Unified Socialist Party, Left Front, Revolutionary Communist League, Worker's Struggle
United Kingdom	Right	British National Party, Democratic Unionist Party, English Democrats, National Democratic Party, National Front, United Kingdom Independence Party
	Left	Communist Party of Great Britain, Green Party of England and Wales, Plaid Cymru, Respect Party, Scottish Socialist Party, Sinn Féin, Socialist Alternative, Socialist Labor Party
Greece	Right	Golden Dawn, Independent Greeks, National Democratic Union, National Political Union, Popular Orthodox Rally
	Left	Coalition of the Radical Left, Communist Party of Greece, Communist Party of Greece (Interior), Democratic Left, Synaspismos, United Democratic Left
Ireland	Right	No parties identified
	Left	Communist Party of Ireland, Democratic Left, People Before Profit Alliance, Sinn Féin, Socialist Labour Party, Socialist Party, Workers Party
Italy	Right	Brothers of Italy, Casa Pound, Italian Social Movement, National Alliance, New Force, No Euro, Northern League, Social Alternative, The Freedomites, The Right, Tricolour Flame
	Left	Civil Revolution, Communist Refoundation Party, Communist Worker's Party, Critical Left, Democratic Party of the Left, Five Star Movement, Italian Communist Party, Party of Italian Communists
Japan	Right	Japan Restauration Party
	Left	Japanese Communist Party
Netherlands	Right	Centre Democrats, Centre Party, Democratic Political Turning Point, Liveable Netherland, One NL, Party for Freedom, Patriotic Democratic Appeal, Pim Fortuyn List, Proud of the Netherlands
	Left	Communist Party of the Netherlands, New Communist Party of the Netherlands, Pacifist Socialist Party, Socialist Party
Norway	Right	Democrats in Norway, Fatherland Party, Norwegian People's Party, Progress Party, The Democrats
	Left	Communist Party of Norway, Socialist Left Party, The Red Party
Portugal	Right	Democratic and Social Centre-People's Party, National Renovator Party
	Left	Unified Democratic Coalition, Bloc of the Left, Left Revolutionary Front, People's Democratic Union, People's Socialist Front, Portuguese Communist Party, Portuguese Labour Party, Portuguese Workers' Communist Party, Revolutionary Socialist Party, United People Alliance, Workers Party of Socialist Unity
Sweden	Right	New Democracy, Sweden Democrats
	Left	Communist Party of Sweden, The Left Party
United States	Right	No parties identified
	Left	No parties identified

C   Recessions

Country	year
Australia	1971, 1975, 1977, 1981, 1990
Austria	1974, 1980, 1982, 1983, 1992, 2000, 2008, 2012
Belgium	1974, 1976, 1980, 1992, 2000, 2008, 2012
Canada	1974, 1980, 1981, 1990, 2008, 2014
Switzerland	1974, 1977, 1981, 1990, 1992, 1994, 1996, 1998, 2002, 2008
Germany	1974, 1980, 1982, 1992, 1995, 2001, 2002, 2008, 2012
Denmark	1973, 1977, 1980, 1987, 1990, 1992, 1997, 2001, 2006, 2007, 2011, 2015
Spain	1974, 1978, 1980, 1992, 2008, 2010
Finland	1975, 1976, 1980, 1990, 2007, 2012, 2013
France	1974, 1980, 1992, 2008
UK	1973, 1974, 1979, 1990, 2008
Greece	1973, 1976, 19980, 1981, 1985, 1990, 1992, 1992, 2007, 2014
Ireland	1975, 1982, 1985, 2007, 2012, 2016
Italy	1974, 1977, 1981, 1992, 1997, 2001, 2002, 2008, 2011, 2013
Japan	1973, 1993, 1997, 2001, 2008 ,2010, 2012, 2014
Netherlands	1973, 1074, 1976, 1979, 1982, 2003, 2008, 2011
Norway	1980, 1981, 1987, 1992, 2002, 2007, 2010, 2015
Portugal	1974, 1980, 1983, 1992, 2002, 2008, 2010
Sweden	1970, 1976, 1980, 1990, 2007, 2011
USA	1973, 1980, 1981, 1990, 2007

We use quarterly real GDP per capita from Federal Reserve Bank of St. Louis to identify the peaks and troughs of economic activity for each country by applying the algorithm of Bry and Boschan (1971).

D   Systemic Financial Crises

Country	year
Australia	1989
Austria	2008
Belgium	2008, 2012
Switzerland	1991, 2008
Germany	2008
Denmark	1987, 2008
Spain	1977, 2008
Finland	1970
France	2008
UK	1974, 1991, 2007
Greece	2008
Ireland	2008
Italy	1990, 2008, 2011, 2013
Japan	1997
Netherlands	2008
Norway	1988
Portugal	2008
Sweden	1991, 2008
USA	1984, 2007

This refers a systematic crisis characterized by government intervention. This dataset is drawn from Jordà et al. (2017).

E   Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Far-left vote share	0.053	0.071	0	0.533	291
Far-right vote share	0.052	0.075	0	0.359	291
Middle vote share	0.896	0.11	0.373	1	291
Government vote share	0.541	0.122	0.123	0.865	291
Opposition vote share	0.459	0.122	0.135	0.877	291
Gini Market	44.442	5.344	26.301	56.572	915
Gini Net	28.537	4.401	16.605	38.736	915
Unemployment rate	0.068	0.041	0.01	0.275	909
RGDP growth	0.018	0.023	-0.09	0.096	904
Inflation	0.05	0.05	-0.045	0.288	924
Real house price growth	0.02	0.069	-0.177	0.388	838
Gov. expenditure/GDP growth	0.001	0.007	-0.038	0.031	894
Recession dummy	0.319	0.466	0	1	924
Financial crisis dummy	0.03	0.172	0	1	924
Globalization index	75.487	12.425	36.661	92.848	924
Economic glob.	25.499	5.178	11.98	34.974	924
Social glob.	26.414	6.147	9.050	34.56	924
Political glob.	23.429	2.846	12.495	26.54	924
Voter turnout	0.764	0.127	.422	.9577	921

F Far-left vs far right vote shares

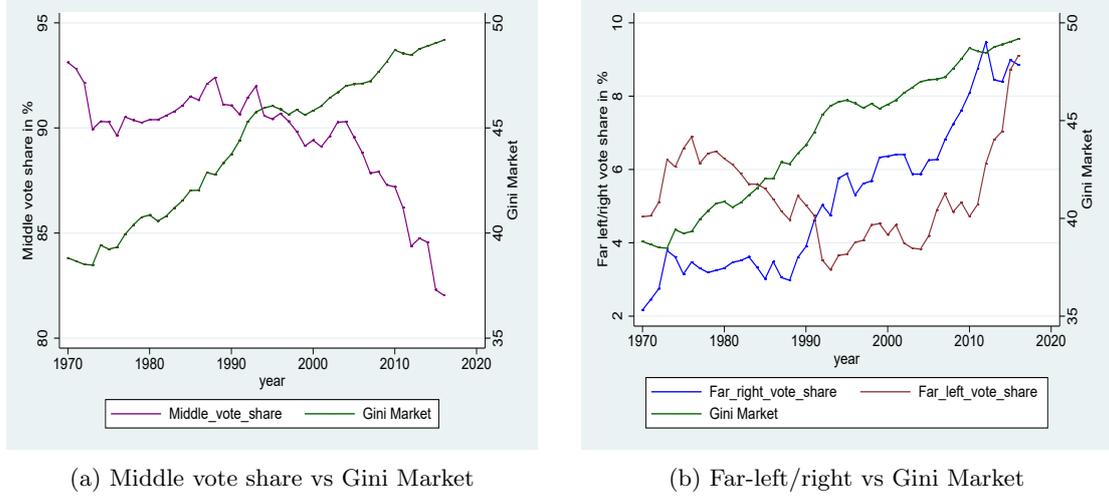(a) Middle vote share vs Gini Market (b) Far-left/right vs Gini Market

Figure 5: Average vote shares vs Gini Market

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$$Y_{it} = \beta G_{it-1}^{Market} + \theta X_{it-1} + \delta Glob_{it-1} + \alpha_i + \epsilon_{it} \tag{3}$$

$$Y_{it} = \beta G_{it-1}^{Market} + \theta X_{it-1} + \delta EcoGlob_{it-1} + \gamma SocGlob_{it-1} + \zeta PolGlob_{it-1} + \alpha_i + \epsilon_{it} \tag{4}$$

Table 7: Panel OLS regressions of FLVS and FRVS with Gini Market (1 lag). Sample: 1970-2016

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini gross $(t-1)$	0.300	0.246*	-0.059	-0.034
Unemployment rate $(t-1)$	0.371**	0.304*	0.012	0.035
RGDP growth $(t-1)$	-0.177**	-0.235***	-0.220**	-0.184*
Inflation $(t-1)$	0.089	-0.041	-0.095	-0.059
Credit to HH/GDP growth $(t-1)$	0.032	0.028	-0.039	-0.047
Real house price growth $(t-1)$	0.078	0.095	0.070	0.077
Gov. expenditure/GDP growth $(t-1)$	-0.166**	-0.195***	-0.060	-0.034
Recession dummy $(t-1)$	0.074**	0.051	-0.047	-0.051
Financial crisis dummy $(t-1)$	0.036	0.018	0.012	0.024
Globalization Index $(t-1)$	-0.604*		0.175	
Economic glob. $(t-1)$		-0.334**		-0.119
Social glob. $(t-1)$		-0.483*		0.358***
Political glob. $(t-1)$		0.052		-0.048
Previous_left		0.264**		
Previous_right				0.098
Observations	174	173	174	174

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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Table 8: Panel OLS regressions of FLVS and FRVS with Gini Market (average). Sample: 1970-2016

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini market	0.416	0.354	-0.063	-0.030
Unemployment rate	0.080	0.024	0.085	0.121
RGDP growth	-0.123	-0.164*	-0.173*	-0.136
Inflation	0.378*	0.252*	-0.069	-0.022
Credit to HH/GDP growth	-0.203**	-0.252***	0.034	0.062
Real house price growth	0.103	0.152**	0.117	0.091
Gov. expenditure/GDP growth	-0.057*	-0.052	-0.034	-0.037
Globalization Index	-0.342		0.134	
Economic glob.		-0.081		-0.123
Social glob.		-0.550*		0.363***
Political glob.		0.189*		-0.076
Observations	177	177	177	177

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Panel OLS regressions of FLVS and FRVS with Gini Net (average). Subsample: 1970-1999

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net	0.558	0.460*	-0.329	-0.160
Unemployment rate	0.322	0.200	-0.362	-0.137
RGDP growth	-0.018	-0.026	-0.157	-0.153
Inflation	0.242	0.133	-0.142	-0.089
Credit to HH/GDP growth	-0.023	-0.066	0.035	0.055
Real house price growth	0.088	0.092	0.112	0.150
Gov. expenditure/GDP growth	-0.052	-0.041	-0.004	-0.014
Globalization Index	-0.426		0.500	
Economic glob.		-0.080		-0.259
Social glob.		-0.614		0.787
Political glob.		0.256		-0.041
Observations	86	86	86	86

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Panel OLS regressions of FLVS and FRVS with Gini Net (average). Subsample: 2000-2016

	FLVS(1)	FLVS(2)	FRVS(1)	FRVS(2)
Gini net	0.481	0.478	0.687**	0.689**
Unemployment rate	0.375***	0.418***	0.223	0.212
RGDP growth	-0.189*	-0.227*	-0.140	-0.139
Inflation	0.090	0.088	0.052	0.050
Credit to HH/GDP growth	-0.497***	-0.452***	0.035	0.025
Real house price growth	0.255**	0.256**	0.088	0.089
Gov. expenditure/GDP growth	0.002	-0.017	-0.025	-0.020
Globalization Index	0.170		0.245	
Economic glob.		0.361		0.101
Social glob.		-0.089		0.156
Political glob.		0.164		-0.023
Observations	91	91	91	91

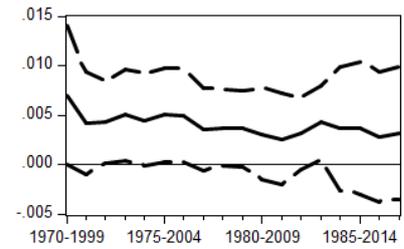Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
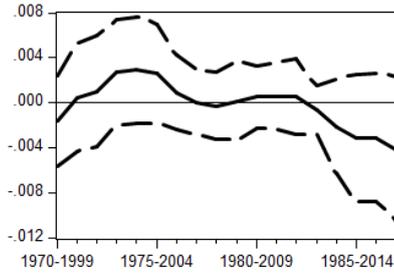
(a) EcoGlob. Coefficient on FLVS
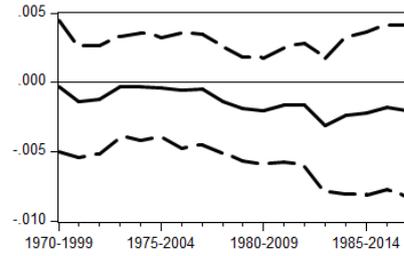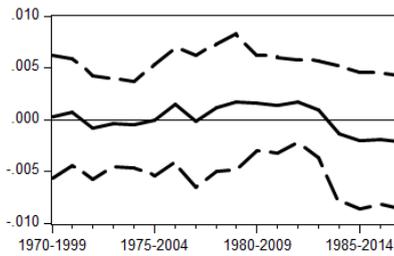

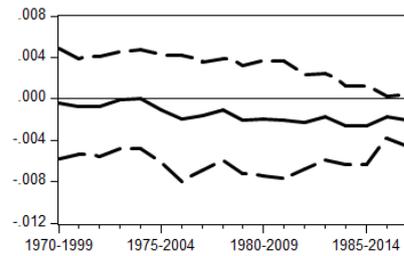(b) EcoGlob. Coefficient on FRVS
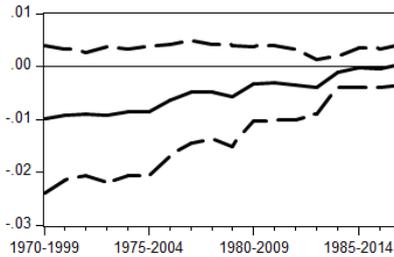
(c) SocGlob Coefficient on FLVS

(d) SocGlob Coefficient on FRVS

(e) PolGlob Coefficient on FLVS

(f) PolGlob Coefficient on FRVS

Figure 6: Time-varying coefficients obtained from rolling panel regressions of FRVS and FLVS.

G Middle, government and opposition vote shares

Table 11: Panel OLS regressions of MVS , GOV and OPO with Gini Market (1 lag).
Sample: 1970-2016

	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini market $(t-1)$	-0.157	-0.155	-0.132	-0.125	0.121	0.115
Unemployment rate $(t-1)$	-0.230*	-0.209	0.126	0.110	-0.119	-0.102
RGDP growth $(t-1)$	0.244**	0.250**	0.072	0.088	-0.076	-0.090
Inflation $(t-1)$	0.001	0.040	0.166	0.146	-0.149	-0.132
Credit to HH/GDP growth $(t-1)$	0.003	0.015	-0.187	-0.196	0.183	0.190
Real house price growth $(t-1)$	-0.094*	-0.109**	0.013	0.015	-0.004	-0.004
Gov. expenditure/GDP growth$(t-1)$	0.145*	0.138*	0.110	0.108	-0.100	-0.094
Recession dummy $(t-1)$	-0.014	-0.000	0.032	0.038	-0.034	-0.043
Financial crisis dummy $(t-1)$	-0.034	-0.036	-0.060	-0.061	0.059	0.061
Globalization Index $(t-1)$	0.240		0.333**		-0.311***	
Economic glob. $(t-1)$		0.261**		-0.022		-0.008
Social glob. $(t-1)$		0.091		0.278		-0.245
Political glob. $(t-1)$		-0.035		0.057		-0.037
Previous_populist		-0.083		0.121		-0.130
Observations	198	197	198	197	198	197

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Panel OLS regressions of MVS , GOV and OPO with Gini Net (average).
Sample: 1970-2016

	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net	-0.361**	-0.368**	-0.427***	-0.417***	0.421***	0.417***
Unemployment rate	-0.196	-0.191	0.150	0.143	-0.141	-0.131
RGDP growth	0.236***	0.230***	-0.065	-0.057	0.063	0.061
Inflation	-0.187**	-0.136**	0.054	-0.003	-0.047	-0.000
Credit to HH/GDP growth	0.100	0.103	0.129	0.123	-0.131	-0.124
Real house price growth	-0.171*	-0.184**	0.047	0.063	-0.046	-0.059
Gov. expenditure/GDP growth	0.085**	0.087**	0.071	0.070	-0.068	-0.068
Globalization Index	0.086		0.451***		-0.444***	
Economic glob.		0.189		0.008		-0.075
Social glob.		0.033		0.222		-0.185
Political glob.		-0.078		0.216		-0.192
Observations	178	178	177	177	177	177

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Panel OLS regressions of MVS, GOV and OPO with Gini Net (1 lag). Subsample: 1970-1999

|	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net $(t-1)$	-0.120	-0.124	-0.467***	-0.399*	0.444***	0.384*
Unemployment rate $(t-1)$	-0.050	-0.011	0.179	0.152	-0.191	-0.158
RGDP growth $(t-1)$	0.137	0.121	0.056	0.071	-0.053	-0.066
Inflation $(t-1)$	0.081	0.115	-0.090	-0.089	0.087	0.085
Credit to HH/GDP growth $(t-1)$	-0.077**	-0.062*	-0.391***	-0.383***	0.392***	0.381***
Real house price growth $(t-1)$	-0.082**	-0.081	-0.063	-0.042	0.050	0.032
Gov. expenditure/GDP growth $(t-1)$	0.045	0.058	-0.064	-0.100	0.058	0.095
Recession dummy $(t-1)$	-0.053	-0.076	0.094	0.152	-0.097	-0.155
Financial crisis dummy $(t-1)$	-0.032	-0.040	-0.038	-0.085	0.043	0.090
Globalization Index $(t-1)$	0.131		-0.235		0.211	
Economic glob. $(t-1)$		0.069		0.003		-0.052
Social glob. $(t-1)$		0.166		-0.010		0.036
Political glob. $(t-1)$		-0.002		-0.434		0.426
Previous_populist		-0.170		0.332		-0.322
Observations	87	87	87	87	87	87

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Panel OLS regressions of MVS , GOV and OPO with Gini Net (average).
Subsample: 1970-1999

	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net	-0.214	-0.256*	-0.683***	-0.708***	0.648***	0.687**
Unemployment rate	-0.050	-0.113	0.138	0.094	-0.152	-0.089
RGDP growth	0.107	0.109	-0.184	-0.179	0.181	0.176
Inflation	-0.075	-0.038	-0.047	0.019	0.032	-0.039
Credit to HH/GDP growth	-0.046	-0.031	0.069	0.095	-0.067	-0.095
Real house price growth	-0.117	-0.144	-0.026	-0.056	0.015	0.052
Gov. expenditure/GDP growth	0.053	0.053	-0.011	-0.014	0.015	0.018
Globalization Index	0.013		0.158		-0.169	
Economic glob.		0.235		0.298		-0.363
Social glob.		-0.073		0.079		-0.052
Political glob.		-0.123		-0.177		0.195
Observations	87	87	86	86	86	86

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Panel OLS regressions of MVS , GOV and OPO with Gini Net (average).
Subsample: 2000-2016

	MVS(1)	MVS(2)	GOV(1)	GOV(2)	OPO(1)	OPO(2)
Gini net	-0.782***	-0.783***	-0.285	-0.284	0.289	0.288
Unemployment rate	-0.370**	-0.385**	-0.283	-0.217	0.273	0.201
RGDP growth	0.208*	0.227*	-0.110	-0.192	0.106	0.195
Inflation	-0.088	-0.085	-0.113	-0.125	0.101	0.115
Credit to HH/GDP growth	0.236*	0.221*	0.127	0.199	-0.115	-0.193
Real house price growth	-0.203*	-0.204*	0.087	0.092	-0.083	-0.089
Gov. expenditure/GDP growth	0.018	0.025	-0.010	-0.040	0.005	0.037
Globalization Index	-0.278**		-0.019		0.089	
Economic glob.		-0.269		0.538		-0.551
Social glob.		-0.073		-0.265		0.321
Political glob.		-0.069		0.156		-0.162
Observations	91	91	91	91	91	91

Standardized coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
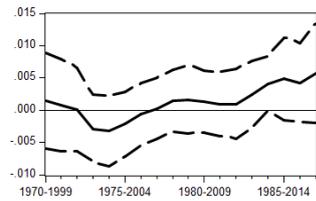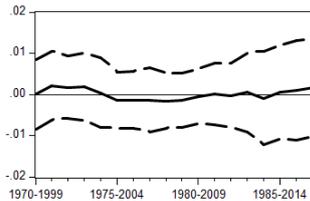
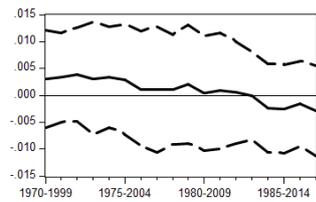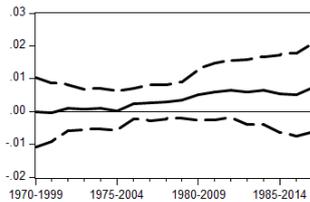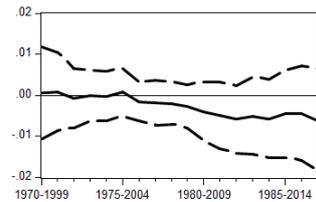(a) EcoGlob Coefficient on MVS   (b) EcoGlob Coefficient on GOV   (c) EcoGlob Coefficient on OPO
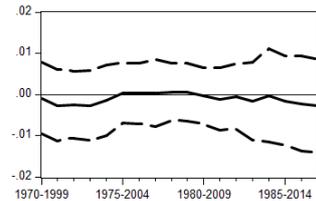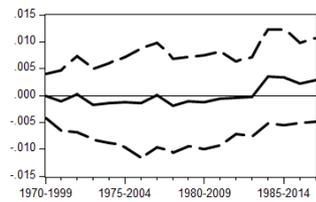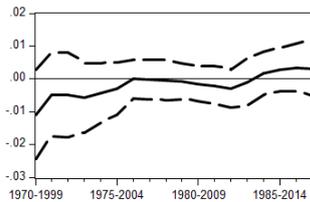
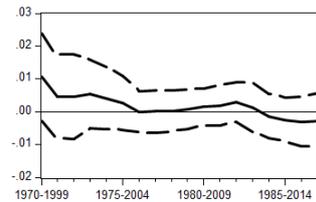(d) SocGlob Coefficient on MVS   (e) SocGlob Coefficient on GOV   (f) SocGlob Coefficient on OPO

(g) PolGlob Coefficient on MVS   (h) PolGlob Coefficient on GOV   (i) PolGlob Coefficient on OPO

Figure 7: Time-varying coefficients obtained from rolling panel regressions of MVS, GOV and OPO.

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