Responsiveness, If You Can Afford It: Policy Responsiveness in Good and Bad Economic Times

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Abstract. Traditional theories of representation posit that political parties have incentives to respond to public opinion which, in turn, is reflected in public policy as parties come together to form governments. Absent from this chain of representation, however, is the notion of costs. We advance the study of policy responsiveness by arguing that the government's cost of responding to the electorate is marginal under conditions of strong economic growth but considerable during hard economic times. Cross-national analyses of voters and government welfare policies produces results that are consistent with this expectation. The findings imply that democratic performance, expressed as responsiveness, is conditional on economic growth.

Keywords: government responsiveness, economic decline, party behavior, welfare spending, representation

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Supplementary material for this article is available in an online appendix accessible from the JOP website. Data and replication files are available from Dataverse: https://dataverse.harvard.edu/dataverse/jop.

Representative democracy means that voters choose leaders to represent them in substantive terms. On this point, the weight of the evidence from industrialized democracies finds that elected representatives and the governments they form are responsive to the public's preferences (Budge et al. 2012; Erikson et al. 2002; Kang and Powell 2010; Soroka and Wlezien 2010; but see Achen and Bartels 2016). But while models of government responsiveness necessarily emphasize the influence of public sentiment, policy and performance outcomes in contemporary democracies are, of course, shaped by a range of factors. Some studies examine how responsive government bears on policy outcomes like taxes, interest rates, social spending, or pension reform (e.g., Häusermann 2010; Kang and Powell 2010; Budge et al. 2012). Delving deeper, researchers identify the circumstances shaping these arrangements, including whether the opinion-policy link varies according to electoral systems, power-sharing arrangements, and federalism (Soroka and Wlezien 2010; Peters 2016).

The common refrain running through these studies is that the degree to which elite-crafted policy reflects mass sentiment depends on the larger institutional environment. Certain institutional arrangements facilitate policy responsiveness, and others slow, blunt, or otherwise impede it. Missing from previous studies on the impact of institutional arrangements, however, is something even more basic to politics: the notion of costs. Students of public opinion have long recognized that citizens balance the benefits of government action (for, say better health care) against the costs incurred (higher taxes). And recently, motivated by the fall-out of the 2008 financial crisis, the political parties research has considered how the economic situation influences party behavior.[1]

[1] Recent studies examine the effects of economic crises on party behavior. Traber, Giger, and Häusermann (forthcoming) argue that while voters care about the economy in times of crisis, (governing) parties wish to downplay the issue – thus producing a salience gap between political elites and voters. Clements, Nanou, and Real-Dato (2018) find that (governing) parties

In this article we argue that the responsiveness of policy to public opinion is not inevitable but instead depends on costs, as conscribed by the health of the nation's economy. From this systematic consideration of costs follows an important new expectation: Governments are more responsive to public preferences when the economy is performing well and less when it is not. We evaluate this simple but untested claim using data on government welfare state spending, median voter preferences, and the performance of the economy across fourteen developed democracies from 1978 to 2010, a period that spans a wide range of economic experiences. Encouragingly, we find in the main that governments in these western democracies deliver policy in response to shifts in voter preferences. Yet this responsiveness is stronger in magnitude under robust economic conditions. Conversely, anemic economies suppress government responsiveness to public opinion.

Explaining Government Policy Choices: Two Research Traditions

What explains government policy decisions? Two literatures address this question: research on policy responsiveness, and research on the political economy of the welfare state. The former asserts that government policy choices are informed by the preferences of the electorate and emphasizes the importance of the chain of representation linking citizens to policy outcomes. This chain begins with voters selecting parties to represent their interests. Parties-in-parliaments then come together to form a government. Conflicts among factions and parties must then be overcome to advance a coherent set of policy objectives. Finally, the government implements its objectives in the form of concrete policy solutions that reflect

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are less responsive to voters relative to the preferences of market elites. From a different perspective, analyses performed by Abou-Chadi and Kayser (2017) suggest that voters demand less during periods of economic decline. These studies are different than ours in that they focus on issue salience, party position-taking behavior (as opposed to policies), or are limited to the crisis years.

citizens' preferences. The responsiveness of policy makers to the median voter thus risks derailment at numerous points along this multistage process. Research on party responsiveness has explored the contexts in which the transmission from citizen preferences to policy outputs is facilitated or impeded (Kang and Powell 2010; Soroka and Wlezien 2010). Further, governments may not tend equally to all voters' preferences but favor some subconstituencies over others (Griffin and Newman 2005; Rosset, Giger, and Bernauer 2013); nor is responsiveness constant across issues (Rasmussen, Reher, and Toshkov forthcoming). These caveats aside, the basic conclusion is that responsiveness to the median voter works.

The literature on the political economy of the welfare state emphasizes a different and wider set of factors to understand the bases of government policy. A venerable tradition argues that government partisanship along with the power of labor provides a parsimonious account of policy outcomes (Stephens 1979). Others take a more institutional approach and assert that policy outcomes vary according to long-standing relationships among businesses, financial institutions, workers, and governments (Hall and Soskice 2000). Still another strand of this research highlights how the organization of the macro-economy puts pressure on governments to compensate those adversely affected by globalization, deindustrialization, and other changes associated with advanced capitalism (Iversen and Cusack 2000).

The policy responsiveness and political economy literatures, then, provide very different accounts of government policy decisions. The former highlights how party incentives facilitate responsiveness to the median voter; the latter emphasizes how capitalism's structural factors limit the government's options and assigns little independent role to voters or their party representatives.[2] This matters for how we understand policy change. The first tradition

[2] An exception is Brooks and Manza's (2007) work on how cross-national differences in the size of welfare states are shaped by differences in the opinions of national electorates. However, while Brooks and Manza examine public opinion-spending linkages, they do not con-

implies that policy change is a consequence of changing voter preferences; the latter tradition predicts change to be more evolutionary in nature and dependent on constraints. Of utmost importance for our contribution, the parties scholarship downgrades (if not ignores) the potential costs of policy responsiveness, while the comparative welfare state literature emphasizes structural constraints, or costs, with voters left to the side. We combine insights from these contributions by recognizing that economic downturns reduce public revenues, raising policymakers' pressures to return to acceptable levels of economic growth while stymying their capacity to respond to voter preferences.[3] This generates the following hypothesis: *government policy responsiveness to public opinion is stronger when economic conditions are robust and weaker during lean economic times*.

Measures and Data

We evaluate this claim by examining the determinants of government policy. Data on our key measures are available on an annual basis from 1978 to 2010 for fourteen developed democracies: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. Testing our hypothesis requires measures for three central concepts: policy outcomes, public opinion, and economic conditions. In the set of Western democracies we analyse, social welfare is the most salient dimension of policy contestation.[4] Accordingly, our dependent variable is measured using the social welfare generosity index developed by Scruggs, Jahn, and Kuitto (2017). This in-

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sider responsiveness *per se* (in terms of shifts in spending) nor do they consider variations in the welfare state-public opinion nexus across good and bad economic times.

[3] The supplementary information file extends this theoretical discussion in terms of government's valence and positional considerations in good and bad economic times.

[4] Analyses of party policy positions in Western Europe find that the tax-spend dimension ranks highest in terms of importance (Benoit and Laver 2006, esp. p. 176 and appendix).

dex, *Welfare state generosity*, is comprised of a broad range of social insurance benefits including employment insurance, sick pay insurance, and public pensions.[5] While an annual measure of public preferences for social welfare would be ideal for our purposes, such measures do not exist cross-nationally. Accordingly, for *Median voter position* on policy preferences we rely on the left-right scale from 1 (left) to 10 (right). We use surveys from the Eurobarometer series to calculate the median positions for each country-year. We note that several scholars have analyzed the relationship between redistributive attitudes and Left-Right self-placements, and they report strong estimates of this relationship (Alesina and Giuliano 2009; Benoit and Laver 2006). Our third variable of interest, *Economic growth*, is measured in real terms using data provided in Armingeon *et al.* (2017). [6]

We use a general baseline specification to assess the direct influences of public opinion and the economy on policy outcomes and then move to assess whether the economy conditions the effects of public opinion. Given our annual data, we specify a model which allows the analyst to uncover both the immediate and long-run impact of a shock to X on Y. To do so, we specify an error correction model (ECM) of the form $\Delta Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \beta_0 \Delta X_{it} +$

[5] The index is the sum of the sub-indices for unemployment and sick pay insurance and pension generosity. Country-year values are based on *z*-scores for all available observations for each characteristic. Proponents of this measure argue that it is a better measure of government policy than social welfare spending because the latter is influenced by unemployment rates and the population of pensioners that cause welfare spending to vary even if entitlement policies remain the same.

[6] Real economic growth accounts for inflation. We also control for membership in the European Monetary Union and for the size of the labor force (Armingeon *et al.* 2017; Visser 2015). The supplementary information file reports the robustness of our results over time trends, debt levels, current account balances, and for a set of political institutions.

$\beta_1 X_{it-1} + \varepsilon_{it}$, where Δ is the difference operator, t indexes time (in years), and i countries. Modeling shifts in policy outcomes rather than levels helps address potential issues of non-random error structures (Tromborg 2014). The contemporaneous impact of a shock to X is provided by β_0 while the cumulative impact is β_1/α_1 (De Boef and Keele 2008).[7] To address serial correlation and to allow for inter-panel differences in the dynamic processes we estimate AR(1) terms. Finally, we include country fixed effects to account for unmeasured sources of country-level heterogeneity and panel-corrected standard errors to address heteroscedasticity.

Model 1 of Table 1 reports regression estimates. In this model, our chief interest is in the influence of *Median voter position* on *Welfare state generosity*. A negative coefficient implies responsiveness: if the median voter is moving rightward and increasing in value, this suggests that welfare state generosity should *decrease*. Model 1 shows that the coefficient on *Median voter position* is statistically significant over the long-run. The coefficient on the long run effect for the lagged *Median voter position* variable is precisely estimated negative 0.35. This result of general responsiveness to public opinion shifts is consistent with previous research (e.g., Budge *et al.* 2012; Kang and Powell 2010; Soroka and Wlezien 2010). In particular, the results that support longer-term effects, as opposed to more immediate effects, are consistent with research arguing there are significant lags in time between changes in public opinion and subsequent changes in policy outcomes (Budge et al. 2012).

Model 2 includes the interaction *Median voter position*$_{t-1}$ × *Economic growth*$_{t-1}$ to assess whether this effect of public opinion on welfare state generosity differs across levels of growth. Recall that we expect responsiveness to be greater—that is, the *negative* influence of *Median voter position* on *Welfare state generosity* to be larger—when the economy is grow-

[7] Research on ECMs argues that the order of integration must be consistent across variables (Grant and Lebo 2016). For our case, our series are stationary, or balanced with I(0).

ing at a healthy rate. The negative coefficient on the interaction term indicates that growth rates increase the impact of public opinion on government policy.

Using Model 2 estimates, we illustrate the conditioning influence of the economy on responsiveness in two ways. Figure 1 presents the marginal effects for the long-term across the sample range of values for growth. We see that responsiveness occurs only when growth is sufficiently high (approximately 1%). Figure 2 provides a dynamic representation of this effect. The figure displays a forecast of the change in *Welfare state generosity* when the median voter position shifts one standard deviation to the left (see SI file for details). As we would expect, a leftward opinion shift increases welfare generosity when growth rates are at or above the sample median of 2.5% per annum. But when the economy is stagnant, positions of the median voter register no effect on policy.

[Table 1 and Figures 1 and 2 here]

Conclusion

A consensus has emerged in the cross-national research that the quality of democratic representation is influenced by (largely time invariant) political institutions. Our study sheds light on something more fundamental to democratic performance: the notion of costs. Combining insights from studies of party competition and from the political economy of the welfare state, we argue that the government's responsiveness to the public depends on economic conditions. We find that governments in Western democracies are generally responsive to shifts in public opinion. Yet when growth rates fall below one percent per annum, estimates of long-run policy responsiveness become statistically indistinguishable from zero. This finding suggests that economic growth and government responsiveness operate in tandem. And if countries' economies are as interconnected as some argue, then one would expect economic waves of expansion and depression to produce corresponding "waves" of democratic responsiveness. We conclude there exists a minimum threshold of growth that is neces-

sary for systematic government policy responsiveness. If the degree of economic volatility experienced during the Great Recession returns, we can expect that governments will find the costs of responding to public demands higher than they can bear. Future research should extend these analyses to examine whether what we uncover for welfare policy in general persists for specific policy areas such as immigration and the environment.

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Table 1. Analyses of Changes in *Welfare State Generosity*

	Model 1		Model 2	
Variables	Coeff.	S.E.	Coeff.	S.E.
Welfare state generosity$_{t-1}$	-0.099***	(0.015)	-0.098***	(0.015)
ΔMedian voter position$_t$	-0.162	(0.171)	-0.133	(0.170)
Median voter position$_{t-1}$	-0.347***	(0.111)	-0.165	(0.130)
ΔEconomic growth$_t$	0.014	(0.010)	0.013	(0.010)
Economic growth$_{t-1}$	0.023**	(0.010)	0.305**	(0.143)
ΔMedian voter position$_t$ × *ΔEconomic growth*$_t$			-0.081	(0.094)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$			-0.053**	(0.027)
ΔLabor force$_t$	0.052	(0.059)	0.053	(0.058)
Labor force$_{t-1}$	-0.059***	(0.015)	-0.053***	(0.016)
EMU membership$_t$	0.343***	(0.059)	0.333***	(0.059)
Constant	5.183***	(0.816)	4.187***	(0.923)
R^2	0.15		0.15	

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses.The dependent variable is *Δ Welfare state generosity*$_t$. Country dummies are included and omitted from table. Number of observations = 367, Number of countries = 14,*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Figure 1. Marginal Effect of Median Voter Position on Welfare State Generosity as Economic Growth Varies

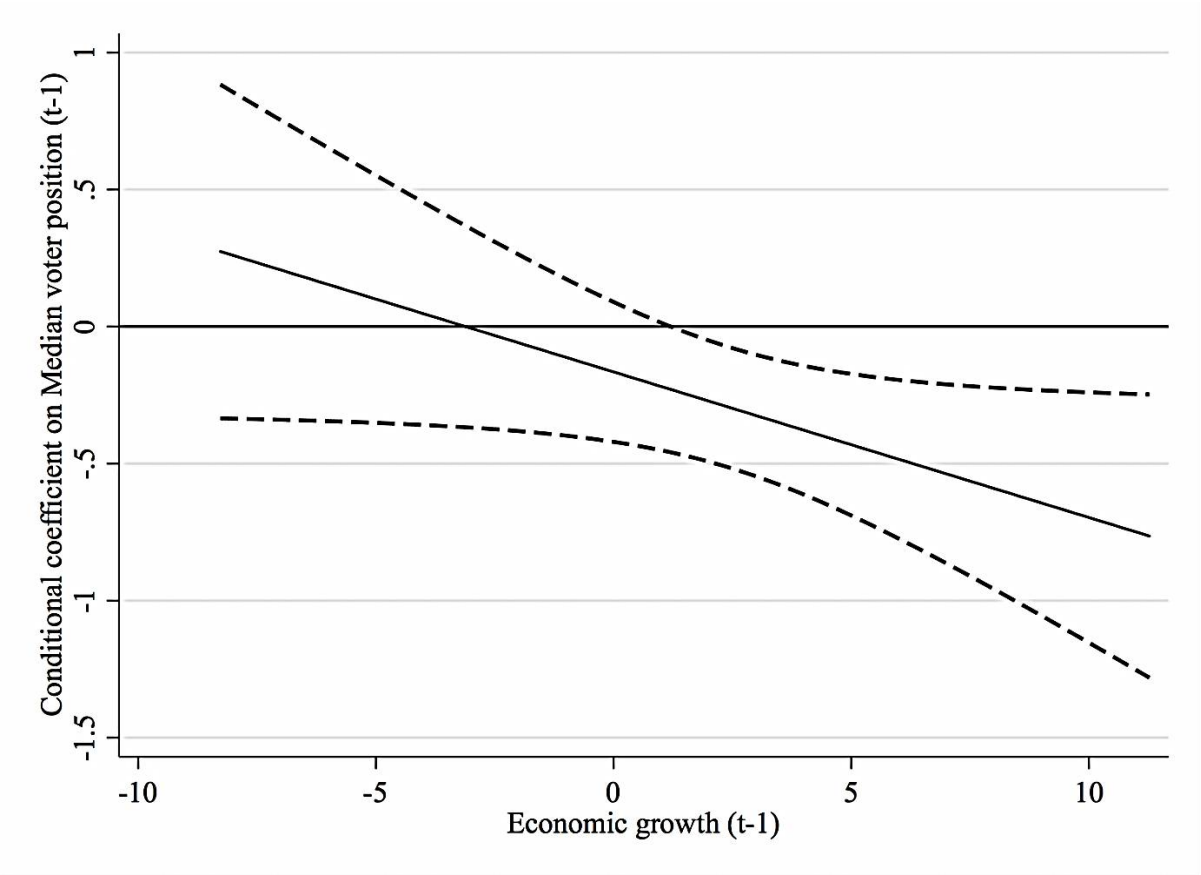


Figure 1 charts the coefficient on *Median voter position*$_{t-1}$ over values of *Economic growth*$_{t-1}$ (based on Table 1 Model 2 estimates). Negative estimates in Figure 1 indicate **stronger** government responsiveness to public opinion. Dashed lines report 95% confidence intervals.

Figure

Figure 2. Forecast of Effect of Leftward Shift in Median Voter Position on *Welfare State Generosity* for High, Average, and Zero Rates of Economic Growth

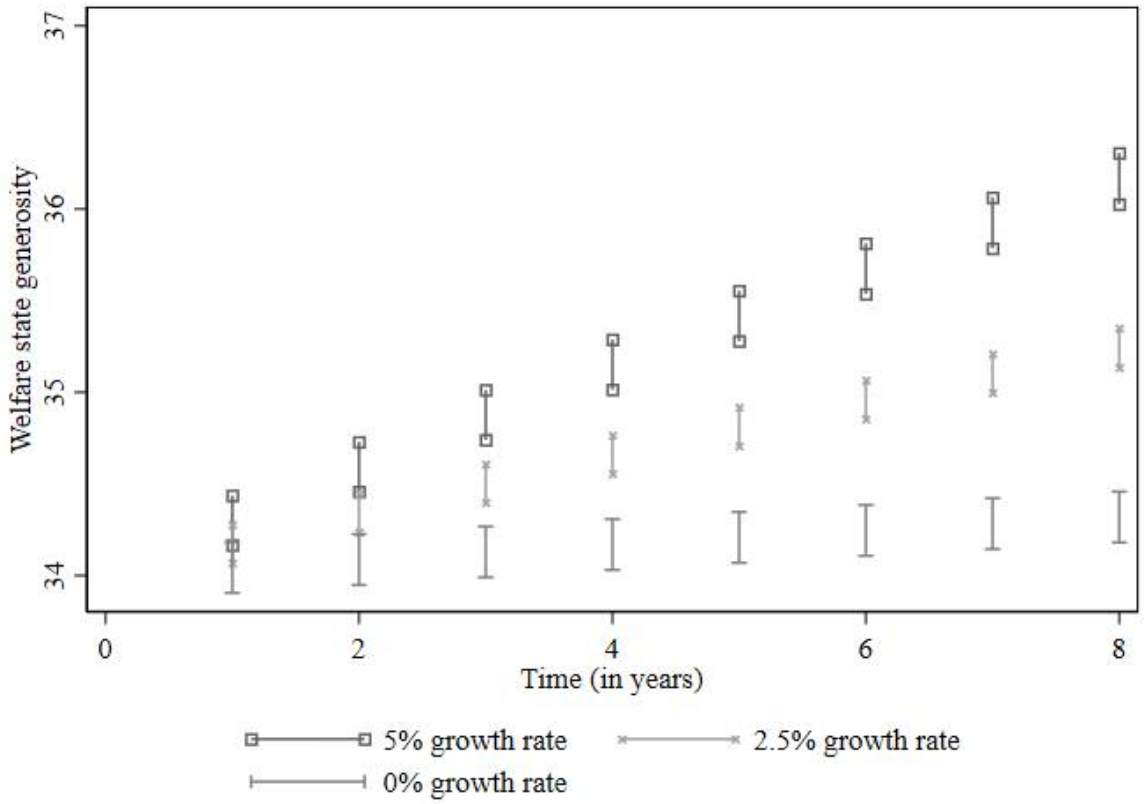


Figure 2 displays forecasted expected values of *Welfare state generosity* when the *Median voter position* is one standard deviation to the left of its in-sample mean, calculated under three different growth scenarios (based on Table 1 Model 2 estimates). Initial value for *Welfare state generosity* is 34. Vertical bars report 95% confidence intervals. Simulations are performed with "dynsim" (Williams and Whitten 2011).

Responsiveness, If You Can Afford It: Government Responsiveness to the Public in Good and Bad Economic Times

Supplementary Information File

I. Considering the Role of Valence for Responsiveness, but with Costs (footnote 3)

The argument developed in the main text borrows insights from political economy to advance an argument about the costs of responsiveness. In this supplementary information file, we extend this theoretical discussion in terms of government's valence and positional considerations in good and bad economic times.

Governments, we argue, respond to public pressures to extent the benefits of doing so exceed current costs. In capitalist democracies, these costs are directly related to the economy. As is well known, the state of the economy affects politics in many ways. Economic conditions shape how voters decide, with incumbent policy makers more likely to be removed from office in weak economies than in robust ones. The economy also matters for party competition: during prolonged downturns, elections are more volatile and contain a greater number of party competitors compared to periods of economic growth (Calvo et al. 2017; Mainwaring and Zucco 2007). And as research out of the political economy tradition notes, the economy structures policy makers' room to maneuver. Good economic times open up wealth of options for governments, while leftward policies become relatively more difficult to fund in difficult economic times.

Survival-oriented governments, then, have incentives to respond to the median voter *and* to respond to economic conditions. Yet these twin objectives cannot be pursued in isolation from one another. To see this, consider a purely "responsive" government whose policy decisions are wholly informed by the signaled preferences of the median voter. This government expands or reduces the government's policy involvement based on the wishes of the median voter. If the median voter, say, advocates for greater social spending, the government will respond in kind and, through some mix of taxing its citizens or deficit spending, will deliver by allocating more resources to social programs.

However, this policy expectation ignores two important considerations that stand to affect its survival in office. The first is that the ability to deliver depends a good deal on the larger

economic environment. In strong economic times, the government's room to maneuver is considerable: taxes may be increased or deficits can rise with few adverse effects (an exception being possible inflationary pressure). In times of austerity, however, budgets are tight and the range of public policies that the government may implement will be more constrained. Instead, any policy decision must be evaluated in light of its effect on an already-strained economic environment.

Thus far the very real straightforward costs have been emphasized of funding responsiveness in difficult economic times, and now the second part of our argument introduces the roles of issue salience and *valence*. In particular, in western democracies, poor economic conditions increase the salience of the economy as a valence issue among national electorates. For instance, there is much evidence that the salience of the economy among the public is greater when the main economic indicators such as growth, prices, and jobs are faring poorly (Traber *et al.* forthcoming). Studies show an inverse relationship between the performance of the economy and the share of the public that identifies these economic factors as the "most important problem" facing their country (Wlezien 2005; Hellwig 2007). Furthermore, during tough economic times voters may care less about the positions parties take and more about their capacity to fix the economy (Green and Jennings 2017). Thus, while the median voter may prefer more spending to less, he or she also prefers that policymakers take action to improve the economy. When the economy performs well the median voter is *position*-oriented, and is considered the conventional median voter prominently featured in spatial models of voter choice (Downs 1957; Adams *et al.* 2005). On the other hand, when the economy performs poorly, our voter of interest cares mainly about performance or valence considerations (Stokes 1963). As the valence consideration of fixing the economy becomes more important and "competence" comes to the fore in voter choice (Green and Jennings 2017; Clarke *et al.* 2009), positional considerations become less important in vote choice and policy responsiveness decreases.

In short, the state of the economy complicates the decisions of survival-oriented, office-seeking governments. When the growth rates are positive and predictable, prices stable, and jobs plenty, then governments are able to respond to voter preferences because they will, on balance, have more revenue to respond to public demands. But when the economy is faring poorly, responsiveness can come with a cost. Furthermore, poor economies increase the importance of valence relative to policy positions in explaining vote choice.

II. Descriptive Statistics

Table S1(a). Descriptive Statistics for Continuous Variables

Variable		Obs	Mean	Std. Dev.	Min	Max
Welfare state generosity	*t*	367	33.47	4.89	23.10	43.70
	Δ	367	0.08	0.77	-2.90	7.60
Economic growth	*t*	367	2.37	2.40	-8.27	11.27
	Δ	367	-0.05	2.36	-8.99	11.26
Median voter position	*t*	367	5.20	0.38	4.09	6.21
	Δ	367	-0.01	0.15	-0.62	0.45
Labor force	*t*	367	13.65	12.02	1.21	41.70
	Δ	367	0.13	0.50	-1.34	8.81

Table S1(b). Descriptive Statistics for Categorical Variables

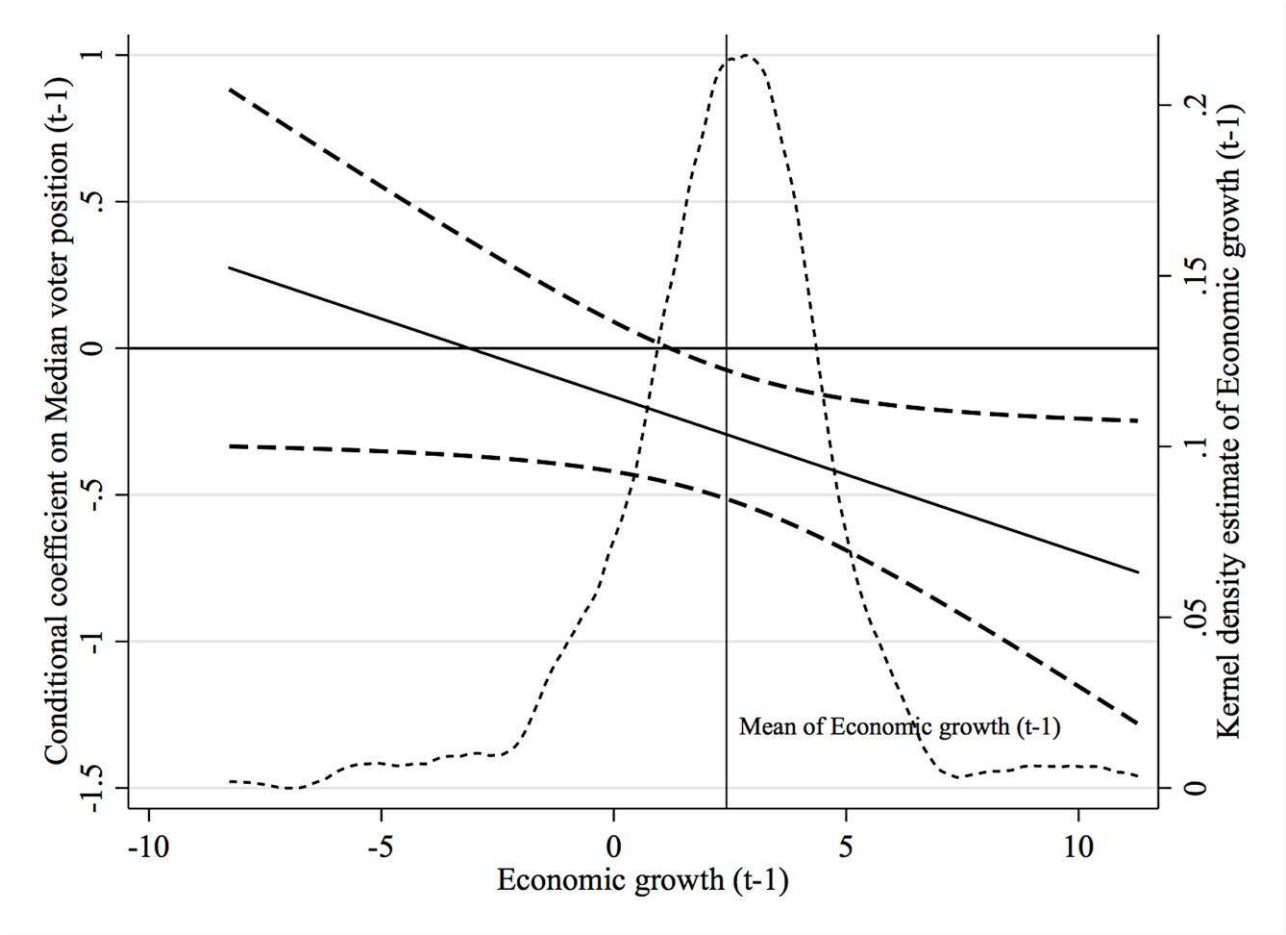
EMU Membership	Freq.	Percent	Cum.
Non-EMU	243	66.21	66.21
EMU	124	33.79	100.00
Total	367	100.00	

Table S1(c). Countries and Years Included in the Analysis

Country	Start year	End year
Austria	1997	2010
Belgium	1978	2009
Denmark	1978	2010
Finland	1997	2010
France	1978	2010
Germany	1978	2009
Greece	1982	2006
Ireland	1978	2010
Italy	1978	2010
Netherlands	1978	2010
Portugal	1997	2010
Spain	1987	2010
Sweden	1997	2010
United Kingdom	1978	2010

Notes. Start and end years indicate when the series included in the estimation sample start and end.

III. Figure S1. Figure 1, Including Sample Mean and Kernel Density of *Economic Growth*



Notes. Figure charts the estimated coefficient of *Median voter position* on *Welfare state generosity* over values of Economic growth, as provided by Table 1 Model 2 estimates. Negative estimates indicate government responsiveness to public opinion on Welfare state generosity. Dashed lines report 95% confidence intervals; while the thin dashed line represents the Kernel density estimate for Economic growth.

IV. Table S2. Replication of Table 1 with Decade Fixed Effects

Variables	(1) Change in generosity	(2) Change in generosity
Welfare state generosity$_{t-1}$	-0.10***	-0.10***
	(0.02)	(0.02)
ΔMedian voter position$_t$	-0.17	-0.14
	(0.18)	(0.17)
Median voter position$_{t-1}$	-0.40***	-0.17
	(0.13)	(0.15)
ΔEconomic growth$_t$	0.01	0.00
	(0.01)	(0.01)
Economic growth$_{t-1}$	0.03**	0.39**
	(0.01)	(0.16)
ΔMedian voter position$_t$ × *ΔEconomic growth*$_t$		-0.09
		(0.09)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$		-0.07**
		(0.03)
ΔLabor force$_t$	0.06	0.06
	(0.06)	(0.06)
Labor force$_{t-1}$	-0.05***	-0.05***
	(0.02)	(0.02)
EMU membership$_t$	0.37***	0.35***
	(0.07)	(0.07)
Decade = 1980s	-0.24**	-0.27**
	(0.11)	(0.11)
Decade = 1990s	-0.27**	-0.30**
	(0.12)	(0.12)
Decade = 2000s	-0.30**	-0.33**
	(0.15)	(0.15)
Decade = 2010s	-0.10	-0.03
	(0.21)	(0.21)
Constant	5.59***	4.37***
	(0.91)	(0.99)
R-squared	0.15	0.16
Observations	367	367
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. To limit the loss of degrees of freedom, time fixed effects are accounted through dummies associated with decades. Time fixed effects are introduced into the model to control for time trends in the *Welfare state generosity* variable. *** p<0.01, ** p<0.05, * p<0.1

V. Table S3. Replication of Table 1 with Public Debt

Variables	(1) Change in generosity	(2) Change in generosity
Welfare state generosity$_{t-1}$	-0.10***	-0.10***
	(0.01)	(0.01)
ΔMedian voter position$_t$	-0.11	-0.07
	(0.17)	(0.17)
Median voter position$_{t-1}$	-0.27**	-0.09
	(0.11)	(0.13)
ΔEconomic growth$_t$	0.03***	0.04***
	(0.01)	(0.01)
Economic growth$_{t-1}$	0.04***	0.29**
	(0.01)	(0.14)
ΔMedian voter position$_t$ × ΔEconomic growth$_t$		-0.13
		(0.09)
Median voter position$_{t-1}$ × Economic growth$_{t-1}$		-0.05*
		(0.03)
ΔLabor force$_t$	0.05	0.05
	(0.06)	(0.06)
Labor force$_{t-1}$	-0.05**	-0.04**
	(0.02)	(0.02)
Δ Gross general government debt$_t$ (% of GDP)	0.01	0.01*
	(0.01)	(0.01)
Gross general government debt$_t$ (% of GDP)	-0.00**	-0.00**
	(0.00)	(0.00)
EMU Membership$_t$	0.37***	0.36***
	(0.06)	(0.06)
Constant	5.07***	4.10***
	(0.79)	(0.89)
R-squared	0.17	0.17
Observations	364	364
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity$_t$* which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. Debt data is from the Organisation for Economic Cooperation and Development, as in Armingeon et al. (2016). Debt is measured in percentage to GDP. We control for debt because our sample includes countries with high debt levels, and because debt potentially constrains policy choices.

*** p<0.01, ** p<0.05, * p<0.1

VI. Table S4. Replication of Table 1 with Current Account Balance Included

Variables	(1) Change in generosity	(2) Change in generosity
Welfare state generosity$_{t-1}$	-0.13***	-0.12***
	(0.02)	(0.02)
ΔMedian voter position$_t$	-0.30	-0.23
	(0.22)	(0.22)
Median voter position$_{t-1}$	-0.42***	-0.27*
	(0.15)	(0.15)
ΔEconomic growth$_t$	0.03**	0.03**
	(0.01)	(0.01)
Economic growth$_{t-1}$	0.02**	0.34**
	(0.01)	(0.15)
ΔMedian voter position$_t$ × *ΔEconomic growth*$_t$		-0.09
		(0.11)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$		-0.06**
		(0.03)
ΔLabor force$_t$	0.04	0.04
	(0.06)	(0.06)
Labor force$_{t-1}$	-0.06***	-0.06***
	(0.02)	(0.02)
Δ Current account balance$_t$ (% of GDP)	-0.05**	-0.04**
	(0.02)	(0.02)
Current account balance$_{t-1}$ (% of GDP)	-0.06***	-0.06***
	(0.01)	(0.01)
EMU Membership$_t$	0.36***	0.35***
	(0.05)	(0.05)
Constant	6.56***	5.66***
	(0.84)	(0.93)
R-squared	0.20	0.21
Observations	298	298
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. The current account balance is measured as percentage of GDP. The current account balance potentially affects welfare state spending (see, e.g., Alesina and Perotti 1997), and we test the robustness of our results to the inclusion of the variable in our model. Data is from the OECD, and accessed from Armingeon *et al.* (2016).
*** p<0.01, ** p<0.05, * p<0.1

Below, Tables S5-S9 control for the political institutions that are highlighted by Budge et al. (2012), Kang and Powell (2010), Soroka and Wlezien (2010), and Peters (2016) as influencing governments' taxation and spending policies.

VII. Table S5. Replication of Table 1 with the Effective Number of Elective Parties Included

Variables	(1) Change in generosity	(2) Change in generosity
Welfare state generosity$_{t-1}$	-0.10***	-0.10***
	(0.02)	(0.02)
ΔMedian voter position$_t$	-0.16	-0.13
	(0.17)	(0.17)
Median voter position$_{t-1}$	-0.34***	-0.16
	(0.11)	(0.13)
ΔEconomic growth$_t$	0.01	0.01
	(0.01)	(0.01)
Economic growth$_{t-1}$	0.02**	0.31**
	(0.01)	(0.14)
ΔMedian voter position$_t$ × *ΔEconomic growth*$_t$		-0.08
		(0.09)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$		-0.05**
		(0.03)
ΔLabor force$_t$	0.05	0.05
	(0.06)	(0.06)
Labor force$_{t-1}$	-0.06***	-0.05***
	(0.02)	(0.02)
Δ Effective Number of Parliamentary Parties$_t$	-0.00	0.02
	(0.07)	(0.07)
Effective Number of Parliamantary Parties$_{t-1}$	0.01	0.01
	(0.04)	(0.04)
EMU Membership$_t$	0.34***	0.33***
	(0.06)	(0.06)
Constant	5.14***	4.09***
	(0.80)	(0.92)
R-squared	0.15	0.15
Observations	367	367
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. The effective number of parliamentary parties is based on parties' legislative seat shares, using the formula by Laakso and Taagepera (1979). Data is from the Comparative Political Data Set (Armingeon *et al*. 2016).
*** p<0.01, ** p<0.05, * p<0.1

VIII. Table S6. Replication of Table 1 with Electoral System Features Included

	(1) Change in generosity	(2) Change in generosity
Welfare state generosity $_{t-1}$	-0.10***	-0.10***
	(0.02)	(0.02)
ΔMedian voter position $_{t}$	-0.14	-0.15
	(0.17)	(0.17)
Median voter position $_{t-1}$	-0.48**	-0.49**
	(0.20)	(0.20)
ΔEconomic growth $_{t}$	0.01	0.01
	(0.01)	(0.01)
Economic growth $_{t-1}$	0.32**	0.32**
	(0.15)	(0.14)
ΔIndex of absolute disproportionality $_{t}$	-0.12	-0.13
	(0.12)	(0.12)
Index of absolute disproportionality $_{t-1}$	-2.54***	-2.53***
	(0.88)	(0.89)
ΔIndex of absolute disproportionality $_{t}$ × *ΔMedian voter position* $_{t}$	-1.00	-0.96
	(0.77)	(0.78)
Index of absolute disproportionality $_{t-1}$ × *Median voter position* $_{t-1}$	0.52***	0.51***
	(0.18)	(0.18)
ΔEconomic growth $_{t}$ × *ΔMedian voter position* $_{t}$	-0.09	-0.09
	(0.10)	(0.10)
Electoral system: Modified PR		6.11***
		(1.23)
Electoral system: PR		6.05***
		(1.21)
Economic growth $_{t-1}$ × *Median voter position* $_{t-1}$	-0.06**	-0.06**
	(0.03)	(0.03)
ΔLabor force $_{t}$	0.04	0.04
	(0.06)	(0.06)
Labor force $_{t-1}$	-0.06***	-0.06***
	(0.02)	(0.02)
EMU membership	0.34***	0.34***
	(0.05)	(0.05)
Constant	6.01***	
	(1.22)	
R-squared	0.17	0.17
Observations	367	367
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is Δ *Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. The index of disproportionality compares the parties that hold parliamentary seats, with the parties that participated in the

election. It is an absolute index, because it does not account for party fractionalization at the electoral level. Data is from Armingeon *et al*. (2016). Electoral system type is instead measured through a categorical variable. The baseline category is single-member districts. *** p<0.01, ** p<0.05, * p<0.1

IX. Table S7. Replication of Table 1, Controlling for Federalism

Variables	(1) Change in generosity
Welfare state generosity $_{t-1}$	-0.10***
	(0.01)
ΔMedian voter position $_{t}$	-0.19
	(0.17)
Median voter position $_{t-1}$	-0.34**
	(0.14)
ΔEconomic growth $_{t}$	0.01
	(0.01)
Economic growth $_{t-1}$	0.27*
	(0.15)
Federalism $_{t-1}$	-1.70
	(1.58)
Federalism $_{t-1}$ × *Median voter position* $_{t-1}$	0.23
	(0.30)
ΔEconomic growth $_{t}$ × *ΔMedian voter position* $_{t}$	-0.10
	(0.09)
Economic growth $_{t-1}$ × *Median voter position* $_{t-1}$	-0.05*
	(0.03)
ΔLabor force $_{t}$	0.05
	(0.06)
Labor force $_{t-1}$	-0.06***
	(0.02)
EMU membership	0.38***
	(0.06)
Constant	5.52***
	(0.94)
R-squared	0.16
Observations	367
Number of countries	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is Δ *Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. Federalism is a dummy variable, coded as 0 when absent; 1 for both weak and federalism. Source for the three categories (that is, no/weak/strong federalism) is from Huber et al. (2004), as coded in Armingeon *et al*. (2016). *** p<0.01, ** p<0.05, * p<0.1

X. Table S8. Replication of Table 1 with Bicameralism Included

Variables	(1) Change in generosity
Welfare state generosity $_{t-1}$	-0.10***
	(0.02)
ΔMedian voter position $_{t}$	-0.16
	(0.17)
Median voter position $_{t-1}$	-0.19
	(0.13)
ΔEconomic growth $_{t}$	0.01
	(0.01)
Economic growth $_{t-1}$	0.34**
	(0.14)
Strong bicameralism $_{t-1}$	-3.16
	(3.04)
Strong bicameralism $_{t-1}$ × *Median voter position* $_{t-1}$	0.79
	(0.48)
Strong bicameralism $_{t-1}$ × *ΔMedian voter position* $_{t}$	0.60
	(1.06)
ΔEconomic growth $_{t}$ × *ΔMedian voter position* $_{t}$	-0.08
	(0.09)
Economic growth $_{t-1}$ × *Median voter position* $_{t-1}$	-0.06**
	(0.03)
ΔLabor force $_{t}$	0.06
	(0.06)
Labor force$_{t-1}$	-0.03
	(0.02)
EMU membership	0.31***
	(0.06)
Constant	4.35***
	(0.91)
R-squared	0.16
Observations	367
Number of countries	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is Δ *Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Country dummies are included but omitted from presentation. For bicameralism, we create a dummy variable. The dummy equals 1 when the categorical index of bicameralism in Armigeon *et al*. (2016; from Lijphart 2012) identifies a case of "strong bicameralism". The variable equals 0 otherwise. *** p<0.01, ** p<0.05, * p<0.1

XI. Table S9. Replication of Table 1, Controlling for Government Ideology

Variables	(1) Government ideology based on Left-Right CMP estimates **("RILE")**	(2) Government ideology based on CMP codings of parties on **Welfare policy**
Welfare generosity$_{t-1}$	-0.097***	-0.100***
	(0.0152)	(0.015)
ΔMedian voter position$_t$	-0.128	-0.154
	(0.172)	(0.171)
Median voter position$_{t-1}$	-0.092	-0.240
	(0.137)	(0.148)
ΔEconomic growth$_t$	0.016	0.013
	(0.010)	(0.010)
Economic growth$_{t-1}$	0.336**	0.281*
	(0.145)	(0.147)
Δ Median voter position$_t$ × *ΔEconomic growth*$_t$	-0.066	-0.079
	(0.096)	(0.093)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$	-0.058**	-0.049*
	(0.027)	(0.028)
ΔGovernment RILE Score$_t$	-0.067**	
	(0.030)	
Government RILE Score$_{t-1}$	-0.052**	
	(0.021)	
ΔGovernment Welfare Score$_t$		-0.001
		(0.084)
Government Welfare Score$_{t-1}$		-0.011*
		(0.063)
ΔLabor force$_t$	0.039	0.052
	(0.057)	(0.058)
Labor force$_{t-1}$	-0.050***	-0.060***
	(0.016)	(0.017)
EMU Membership$_t$	0.320***	0.362***
	(0.058)	(0.060)
Constant	4.049***	5.331***
	(0.938)	(1.190)
Observations	367	367
R-squared	0.16	0.16
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). In Model 1 of Table M4, we include a variable [*Government RILE Score*$_{t-1}$] that weights governing parties' positions by left-right estimates reported in the Manifesto Research on Political Representation (MARPOR) dataset (Volkens et al. 2018). We have recalibrated these government positions to fit on a 1-10 scale, and coalition partners' positions are weighted by their seat share within the coalition. In Model 2, we measure government ideology based on *Welfare policy*, as reported by MARPOR. Country dummies are included but omitted from presentation.*** p<0.01, ** p<0.05, * p<0.10

XII. Table S10. Replication of Table 1, Controlling for Government Turnover

Variables	(1)
Welfare state generosity$_{t-1}$	-0.098***
	(0.015)
ΔMedian voter position$_t$	-0.137
	(0.172)
Median voter position$_{t-1}$	-0.165
	(0.129)
ΔEconomic growth$_t$	0.014
	(0.010)
Economic growth$_{t-1}$	0.304**
	(0.143)
ΔMedian voter position$_t$ × *ΔEconomic growth*$_t$	-0.084
	(0.094)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$	-0.053**
	(0.027)
Government changes per year$_t$	0.012
	(0.035)
ΔLabor force$_t$	0.052
	(0.059)
Labor force$_{t-1}$	-0.053***
	(0.016)
EMU membership$_t$	0.334***
	(0.058)
Constant	4.170***
	(0.920)
Observations	367
R-squared	0.15
Number of countries	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Δ Welfare state generosity*$_t$ which is calculated as the change in welfare state generosity in the current year *t* compared to welfare state generosity in the previous year, as measured by Scruggs et al. (2017). Data on *Government changes per year*$_t$ are retrieved in the Comparative Political Data Set (Armingeon *et al*. 2016), based on Woldendorp, Keman, and Budge (1998, 2000, 2011). Country dummies are included but omitted from presentation. *** p<0.01, ** p<0.05, * p<0.1

XIII. Description of Dynamic Simulation displayed in Figure 2

Figure 2 in the main text leverages the dynamic characteristics of our error correction model to forecast the effect of a given (one standard deviation) shift in the median voter's left-right position on government policy, as gauged by *Welfare state generosity*. To do so, we proceed as follows. First, following De Boef and Keele (2008), and given that our ECM model is estimated on stationary data, we re-specify our equation as follows:

$$\Delta Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \beta_0 \Delta X_{it} + \beta_1 X_{it-1} + \varepsilon_{it} \qquad \text{(s1)}$$

Which may be rewritten without difference operators as

$$Y_{it} - Y_{it-1} = \alpha_0 + \alpha_1 Y_{it-1} + \beta_0 X_{it} - \beta_0 X_{it-1} + \beta_1 X_{it-1} + \varepsilon_{it} \qquad \text{(s2)}$$

Rearranging terms, we have

$$Y_{it} = \alpha_0 + (\alpha_1 - 1) Y_{it-1} + \beta_0 X_{it} + (\beta_1 - \beta_0) X_{it-1} + \varepsilon_{it} \qquad \text{(s3)}$$

We can rewrite this as

$$Y_{it} = \alpha_0 + \alpha_1^* Y_{it-1} + \beta_0^* X_{it} + \beta_1^* X_{it-1} + \varepsilon_{it} \qquad \text{(s4)}$$

where $\alpha_1^* = \alpha_1 - 1$, $\beta_0^* = \beta_0$, and $\beta_1^* = \beta_1 - \beta_0$.[1] We then use equation s4 to re-estimate our main models. Coefficients and standard errors for these autoregressive distributed lag (ADL) models are reported in Table S12. We use these estimates to the long-run multiplier, which depicts the full effect of a change in an exogenous variable through all subsequent quarters in the series.[2] We then simulate the over-time effects of *Median voter position* on the predicted levels of *Welfare state generosity* at t = 1, 2, 3,...,8. Our forecasts depict three states of the world: one in which the economy is performing well above average at 5% annual growth; one in which growth is set to the sample median of 2.5%, and a third for when the economy is not growing at all. *Welfare state generosity* is set to an initial value of 34 (the mean). Model controls are set at their in-sample medians (for *Labor force*) or modes (for *EMU membership*). Simulations are performed with STATA's dynsim package (Williams and Whitten 2011).

[1] De Boef and Keele (2008, 189-190) discuss this Bardsen transformation from the autoregressive distributed lag specification to the ECM specification; here, we perform the transformation in reverse.

[2] With respect to equation s4, the long-term effect of a unit increase in an independent variable is given by $\frac{(\widehat{\beta_0^*}+\widehat{\beta_1^*})}{(1-\widehat{\alpha_1^*})}$, which is equivalent to $\frac{\widehat{\beta_1}}{-\widehat{\alpha_1}}$, or the long-run effect of a one-unit increase in *Median voter position* produced by the ECM specification in equation (s1). To see the equivalencies, we can compare long-run multipliers for Model 1 in Table 1 in the main text (ECM specification) with that of Model 1 in Table S12 (ADL specification). The former is calculated as $\frac{\widehat{\beta_1}}{-\widehat{\alpha_1}} = \frac{-0.347}{-(-0.099)} = 3.50$; the latter is calculated as $\frac{(\widehat{\beta_0^*}+\widehat{\beta_1^*})}{(1-\widehat{\alpha_1^*})} = \frac{-0.161-0.185}{1-0.901} = 3.50$.

XIV. Table S11. Modeling Welfare State Generosity, Autoregressive Distributed Lag Specifications

	(1)	(2)
Variables	Welfare state generosity	Welfare state generosity
Welfare generosity$_{t-1}$	0.901***	0.902***
	(0.015)	(0.015)
Median voter position$_{t}$	-0.161	-0.277
	(0.172)	(0.185)
Median voter position$_{t-1}$	-0.185	0.023
	(0.167)	(0.179)
Economic growth$_{t}$	0.014	-0.221
	(0.010)	(0.147)
Economic growth$_{t-1}$	0.009	0.395***
	(0.010)	(0.145)
Median voter position$_{t}$ × *Economic growth*$_{t}$		0.044
		(0.028)
Median voter position$_{t-1}$ × *Economic growth*$_{t-1}$		-0.072***
		(0.027)
Labor force$_{t}$	0.052	0.054
	(0.059)	(0.058)
Labor force$_{t-1}$	-0.110*	-0.111*
	(0.059)	(0.059)
EMU Membership$_{t}$	0.343***	0.334***
	(0.059)	(0.058)
Constant	5.183***	4.651***
	(0.816)	(0.967)
Observations	367	367
R-squared	0.98	0.98
Number of countries	14	14

Notes. Entries show estimated coefficients, with panel corrected standard errors in parentheses. The dependent variable is *Welfare state generosity*$_{t}$ (Scruggs et al. 2017). Country dummies are included but omitted from presentation. *** p<0.01, ** p<0.05, * p<0.1

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