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Growth, Inequality, and Party Support: Valence and Positional Economic Voting

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ABSTRACT

Economic growth helps governments get reelected. But does growth, as a valence issue, exhaust the possibilities for the economic vote? What about the impact of inequality, as as a positional economic issue? Can rising economic inequality make or break a government, independent of the country's growth trajectory? We show, via an examination of 310 elections in established democracies, across time and space, that growth and inequality both matter for incumbent government support. Somewhat surprisingly, we find that both left-wing and right-wing incumbents are held accountable for changes in inequality. While these effects appear unaltered by structural factors such as federalism or the electoral system, their impact seems to depend, to some extent, on whether the country is going through economic hard times.

Keywords: Economic voting; growth; inequality; valence; positional economic voting; social welfare spending.

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INTRODUCTION

The economy, to a noteworthy degree, shapes the fate of government parties at the ballot box. This proposition has great intuitive appeal among people, politicians and pundits. As well, a wealth of scholarship, macro-and micro-, on economies and elections around the world, supports it.[1] Further, the proposition holds regardless of the research design employed: cross-sectional or time-series, aggregate or survey, observational or experimental.[2] What serves as the central economic motor for this electoral change? Certainly, economic growth stands as the most popular response. In a current, time-series cross-national European investigation, Dassonneville and Lewis-Beck (2014b, 382) quantify that impact: *'a 1 percentage increase in GDP growth yields about a 0.7 percentage point increase in incumbent support'*. In other words, it has a healthy effect, at almost unit elasticity.

Of course, as important as economic growth may be in democracies, that tells us little about the distribution of the growth (Burkhart and Lewis-Beck, 1994; Inglehart and Welzel, 2009). Certain sectors of the polity, elite and mass, care as much, if not more, about economic inequality as compared to economic growth. This forms a special concern for those who believe that growth, at least unfettered growth, actually increases economic inequality (Inglehart, 2016; Stiglitz, 2013). In this paper, we explore the impact of inequality on party support, in competition with the impact of growth itself. We wish to establish whether the two, potentially opposing, economic forces manage to exercise independent effects on incumbent electoral returns. More subtlely, we want to compare the relative impact of the two. Do the factors of growth and equality work in tandem, or in opposition? Does one dwarf the other?

With answers to the above questions, we go on to assess how the impact of growth and inequality on the vote are influenced by the extraordinary conditions flowing from the economic crisis of 2008

[1] See the contemporary literature reviews by Lewis-Beck and Stegmaier, 2013; Stegmaier, Lewis-Beck and Park, 2017.

[2] See the recent special issues of Dassonneville and Lewis-Beck, 2014a; Lewis-Beck and Whitten, 2013.

(Lewis-Beck and Costa Lobo, 2017) and whether effects are conditioned by structural factors such as the electoral system or federalism (Anderson, 2006; Powell and Whitten, 1993). Below, after a review of relevant economic voting literature, we specify a macro-model of the economic vote, explain its measures, then estimate it over a series of equations tested against a data-set of 310 elections (from 1964-2015) on 37 established democracies. From these analyses, we are able to draw sharp conclusions on the foregoing questions.

THE ECONOMIC VOTE: GROWTH VERSUS INEQUALITY IN THE LITERATURE

In democratic elections, the economy has long been considered a central campaign issue. Of course, many other issues arise in a campaign besides economics, but *'none of these other issues correlate as highly or as consistently with vote choice'* (Lewis-Beck, 1988, 157). This arresting fact receives theoretical support from the reward-punishment hypothesis, first attributed to Key (1966), to wit: when the economy has been going well, voters reward the government with their support; but when the economy has been going badly, voters punish the government by withdrawing their support. The "economy", then, receives evaluation as a whole, in a collective assessment of the national economy. At the micro-level of the individual voter, as measured via survey research, that notion commonly translates into a retrospective judgement about whether the country's economy has been doing "better" or "worse" over the last year (Fiorina, 1978; Lewis-Beck and Stegmaier, 2007). At the macro-level of the national electoral outcome, that sentiment routinely finds itself measured by economic growth, e.g., the annual percentage change in the Gross Domestic Product, GDP (Norpoth, Lewis-Beck, Lafay, 1991; Wlezien and Kayser, 2011).

The "economy", viewed in the above ways, clearly represents a "valence" issue (Green and Jennings, 2017). That is, virtually all voters agree that economic prosperity, or growth, is a "good thing" (Stokes, 1963). This valence perspective, although not always acknowledged, has dominated the economic voting literature (Kiewiet, 1983, 13). However, another perspective has begun to appear, i.e.,

positional economic voting, where voters disagree over government policy ends or means, e.g., progressive taxation, government regulation of business, or income inequality (Lewis-Beck and Nadeau, 2011). There are now a few micro-economic voting studies that look at positional, along with valence, issues (Lewis-Beck and Nadeau, 2009; Nadeau et al., 2017). A particular study by Lewis-Beck et al. (2013) on the 2010 British General Election stands out:

'Valence economics operates as expected. Those who saw the economy as worsening were more likely to punish the ruling Labour party, and to vote for the Tory opposition. But positional economic preferences are also at work. Where voters place themselves on the economic policy spectrum makes a difference for their vote. In particular, those less inclined to progressive taxation were clearly more likely to support the Tories'.

Positional economic voting studies have also begun to appear at the comparative, macro-level. In a recent study, Hellwig (2012) develops a strategic model, where voters respond to different economic policy positions parties take. Investigating a cross-section of Western European countries, Dassonneville and Lewis-Beck (2013, 64) show that left parties gain from increasing unemployment, concluding that positional issues *'as well as valence, matter'*. The impact of positional and valence issues also appears in work by De Sio and Weber (2014), who explore a party manifesto index and the 2009 European Election Study. Our effort builds on these, examining a comparative pool of democratic nations, explicitly examining the impact of valence and positional economic voting issues.

With respect to economic issues chosen, for valence we settle on economic growth, as measured by change in GDP, a precedent well-established in the literature. With regard to policy position, we focus on economic inequality (Brady et al., 2003; Franko, Tolbert, Witko, 2013).

In terms of expectations, our dominant valence hypothesis reads as follows:

H1: The greater the economic growth, the higher the incumbent vote share.

Our dominant positional hypotheses read as follows:

H2a: The greater the economic inequality, the higher the left incumbent vote share.

H2b: The greater the economic inequality, the weaker the right incumbent vote share.

As can be seen, the impact of economic inequality, as hypothesized, depends on the political ideology (left v. right) of the incumbent. Further, the impact of economic issues, valence or positional, may be conditioned by whether it occurs under the Great Recession and in what institutional context voters and parties operate. More on these conditional effects as the analysis unfolds. For now, we turn to the broader model specification in which these hypotheses, conditional or not, will be embedded.

TWO FACES OF ECONOMIC VOTING: A GENERAL MODEL SPECIFICATION

Several earlier studies have examined economic voting comparatively, but at the micro-level (Duch and Stevenson, 2008; Lewis-Beck, 1988; Nadeau et al. 2013; van der Brug et al. 2007). A key question then, and now, concerns the model specification. What variables should be included? We make a central departure here, in comparison to these past studies, by explicitly introducing variables on positional economics as well as valence. How should these variables be measured? How should the control variables be measured? A rather complete specification seems required, in order to reduce bias in the coefficients of special interest, in this case the economic voting coefficients. Conceptually, our modeling unfolds in stages, as stylized below.

$$\text{Incumbent Vote}_{t} = f(\text{Incumbent Vote}_{t-1}, \text{Growth, Inequality}) \quad \text{Eq.1.}$$

$$\text{Incumbent Vote}_{t} = f(\text{Incumbent Vote}_{t-1}, \text{Growth, Inequality, Interactions}) \quad \text{Eq.2.}$$

$$\text{Incumbent Vote}_{t} = f(\text{Incumbent Vote}_{t-1}, \text{Growth, Inequality, Interactions, Controls}) \quad \text{Eq.3.}$$

Always, in this set of equations, the dependent variable Incumbent Vote $_t$, equals the vote share for the party (or parties) of the incumbent government. In Eq. 1, which serves as a point of orientation, incumbent vote share is a function of past incumbent vote share (partially serving as a control for omitted variables such as other issues), economic growth, and economic inequality. In Eq.2, interaction terms are added, including the interaction of growth and inequality, respectively, with the ideological (left) complexion of government. In Eq.3, besides the variables of Eq.2, different structural or institutional controls are taken into account, i.e., economic crisis, majoritarian rules or federalism. Thus, the specification is systematically elaborated, with an eye to challenging the stability of the economic voting coefficients. For estimation, linear regression models, with panel-corrected standard errors, are employed. After this background the following details on data, measurement, and estimation can be better appreciated.

DATA AND METHODS

For investigating these research questions, we make use of a uniquely constructed dataset that includes information on incumbent electoral performance in a varied set of established democracies. Information on party electoral performance and their incumbency comes from the Parliament and Government database (Döring and Manow, 2016). Our dataset therefore restricts itself to the countries covered in the ParlGov dataset, which includes all European democracies[3], three additional Westminster democracies

[3] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

(Australia, Canada and New Zealand) plus Japan. The dependent variable is the incumbent vote share, operationalized as the sum of the vote share of all parties in government in case of a coalition.[4]

The economic indicators that we include as independent variables should tap both the valence and the positional effects of economic voting. For the valence dimension, we focus on economic growth which we, as well as others, have previously argued to be the most general indictor for measuring economic conditions (Dassonneville and Lewis-Beck, 2014b). We include a yearly measure of GDP growth that we lag one year. By lagging this indicator, we take into account the observation that voters are backward looking when evaluating the performance of the government (Healy and Malhotra, 2013). The fairly short (one-year) lag structure corresponds to how popularity-functions generally model the impact of the economy (Lewis-Beck and Stegmaier, 2013). Information on GDP growth in these countries is obtained from The Conference Board (2017).

For investigating the role of positional economic considerations on the incumbent's electoral fate, we include two indicators that capture how the government handles economic inequality. First, we examine a Gini indicator of inequality, obtained from Solt's (2016) Standardized World Income Inequality Database.[5] In line with how we investigate the impact of economic growth, we measure change in inequality, and we apply the same lag structure. That is, we include an indicator of the *change* in the Gini measure in the year before the election year.[6]

[4] We also verify, however, whether results are robust to focusing on the party of the Prime Minister only. See the discussion in the robustness section.

[5] Note that Solt's dataset includes 100 separate imputations of the inequality data, which allows taking into account uncertainty in the estimates. For reasons of parsimony, and in order to estimate panel models, we rely here on the average estimate of these 100 imputed variables. We make use of Solt's gini_disp variable, an estimate of Gini index of inequality in equivalized household market income (Solt, 2016). We use version 6.0. of the SWIID dataset.

[6] We also verified whether our conclusions hold when analysing the impact of change in the economic indicators (GDP growth and Gini) during the cabinet's term in office (taking the difference between the indicator at time t-1 and

We also verify whether the effects of the valence and positional economic indicators on the incumbent vote share are dependent on contextual factors. In particular, we examine the impact of the Great Recession, and we explore two approaches measuring its impact. First, we distinguish between the period before the recession and the period since (i.e., 2008 and later) by means of a dummy variable. Second, we investigate the conditioning impact of economic recession more generally by applying spline regression models (e.g., distinguishing between the impact of negative and positive GDP growth).

While our interest lies with the effect of growth and inequality on the incumbent vote share, we need to account for other covariates of incumbent electoral success, in order to achieve less biased estimates. In particular, we control for the partisan leaning of the incumbent government, using a measure of the governing coalition share in the hands of left-wing parties.[7] Information on the ideological leanings of parties comes from ParlGov, a source that groups parties into different "families". (Descriptive statistics of the dependent and independent variables are reported in Appendix 1.)

Our data can be characterized as time-series cross-sectional, with multiple elections included for each country. We make use of an estimation technique that accounts for the characteristics of these data. First, we set up a panel structure and deal with heteroskedastic residual terms by estimating panel corrected standard errors (Beck and Katz, 2001). We also account for differences between countries by inclusion of country-fixed effects. Finally, we include in the models a lagged dependent variable (LDV). On the one hand, an LDV addresses autocorrelation problems.[8] On the other hand, LDV serves as a

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the indicator in the year the government enters office. The results of these additional analyses are reported in Appendix 2.

[7] Our focus is on 'traditional' left-wing parties, which means we only take into account social-democratic, socialist and communist parties – excluding green and other left-leaning parties. The share of left-wing parties in the coalition is calculated as the proportion of seats in parliament for left-wing incumbent parties out of the total of seats in parliament of the governing coalition.

[8] There is indeed significant correlation between the errors of the model that we estimate (without a LDV) and a model in which both the dependent and the independent variables were lagged one election.

substantively important variable, rendering the model dynamic and broadening the interpretation of the coefficients. In short, the inclusion of an LDV implies investigation of how economic indicators affect the *change* in incumbent support, corresponding to our interest in how the economy affects accountability mechanisms.

MAIN RESULTS

We first estimate baseline models, explaining the incumbent vote share by means of a lagged dependent variable and our economic indicators of interest; GDP growth and change in Gini. The results appear in Table 1. We begin by estimating the impact of GDP and Gini separately. Then, we estimate a model including the two indicators simultaneously (Model 3 in Table 1).

TABLE 1. Explaining the incumbent vote share, valence and positional economic voting

	Model 1	Model 2	Model 3	Model 4
	b	b	b	b
	(SE)	(SE)	(SE)	(SE)
Incumbent vote e-1	0.678***	0.636***	0.668***	0.669***
	(0.051)	(0.065)	(0.050)	(0.049)
GDP growth t-1	1.005***		0.981***	1.081***
	(0.191)		(0.176)	(0.221)
Δ Gini t-1		-573.816***	-510.396***	-662.954*
		(169.921)	(153.662)	(280.900)
Left-wing incumbent share				1.762
				(1.510)
Left-wing × GDP growth t-1				-0.597
				(0.463)
Left-wing × Δ Gini t-1				297.848
				(390.256)
Country FE	Yes	Yes	Yes	Yes
Constant	9.168***	14.696***	10.425***	9.926***
	(2.553)	(3.127)	(2.524)	(2.497)
(N)	310	310	310	310
R^2	0.725	0.675	0.737	0.740

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p <$ 0.001.

Looking at the results in Table 1, we first note the good fit statistics of the model. The R^2-values are quite high, indicating that these baseline models explain about three-quarters of the variance in the incumbent vote share. Next, and not surprisingly, a strong and significant impact of the lagged dependent variable appears, suggesting system inertia, with over half the current votes accounted for by past votes.

Moving to the economic variables, then, our results confirm earlier research, showing a significant positive impact of economic growth on the incumbent vote share. Further, the economic growth effect achieves considerable strength, reaching unit elasticity, and appearing largely unaffected when we additionally control for the positional economic indicator (Model 3). These results offer powerful indications of the importance of the economy as a valence issue.

With respect to the positional economic indicator (i.e., change in Gini), our results are mixed. First, we find evidence that actual changes in inequality, measured by means of a Gini-coefficient, affects the incumbent vote share (Model 2). The effect is in the expected negative direction (meaning more inequality costs the incumbent votes), and easily significant at conventional levels. This result is robust to controlling for valence economic voting in Model 3. The coefficient for the impact of Gini appears very large, but that appearance merely reflects the scale of the change in Gini variable, that runs from -0.013 to 0.014. To get a better grasp of the impact of changes in Gini, and how this effect compares to the effect of GDP growth, we estimated the change in the incumbent vote share when moving both GDP growth and Δ Gini from their mean value to the mean plus one standard deviation.[9] We find that increasing the GDP growth rate by one standard deviation increases the estimated incumbent vote share by 3.8 percentage points. In contrast, increasing the change in Gini by one standard deviation, the estimated incumbent vote share becomes 1.8 percentage points lower.

Thus, economic issues appear to matter at election time, both in a valence (growth) and in a positional (equality) sense, though growth appears to have a stronger (about double) impact than inequality. However, with respect inequality we should go on to distinguish between how inequality affects parties on the left and parties on the right. Left-wing parties can be thought of as 'owners' of these inequality issues, so leading to more scrutiny from voters with regard to what they deliver, e.g., left incumbents might benefit more under conditions of higher inequality. To test our hypotheses, then,

[9] Estimates are based on Model 3 in Table 1, estimated effects on observed values for all other variables.

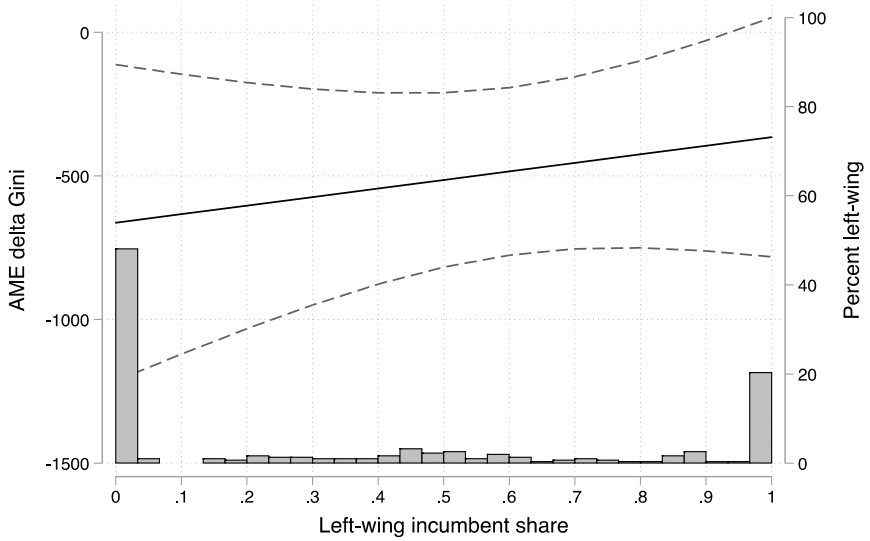
regarding the positional effects of the economy (H2a and H2b), we need to add an interaction term with left-right ideology.

We have done so by adding a measure of the left-wing parliamentary seats held by left incumbent parties, as well an interaction between this indicator and inequality (Note that we also take into account the possibility that the effect of growth is conditional on the ideological position of the incumbent by means of an interaction with GDP growth, cf. Eq. 2). The results are reported in Model 4, and graphically summarized in Figure 1. The results in Table 1 and Figure 1 show no indications of a conditioning impact of the ideological position of the incumbent on the effects of inequality. That is, for the full range of the distribution in the left-wing incumbent share-variable, we find – in contrast to expectations – consistently negative effects of changes in Gini (lower panel).

In line with expectations, the results of Model 4 furthermore suggest that GDP growth functions in a valence way, as its effect is not conditioned by the incumbent's ideological position. The results – that is, the absence of a conditioning impact of incumbent ideology on the effect of inequality – hold when focusing on inequality over the government's term (Appendix 2) and when excluding the interaction between GDP growth and ideology from the analysis (Appendix 3).

Overall, these results offer strong indications that the economic effects that we reported in Model 3 apply generally: voters hold all incumbents accountable for economic growth and – more surprisingly – for changes in inequality, regardless of whether the incumbent is left-wing or not.

FIGURE 1. Explaining the incumbent vote share, the moderating role of incumbent ideology on valence and positional economic voting



Note Average marginal effect and 95% confidence intervals of GDP growth (upper panel) and Δ Gini (lower panel) at varying levels of left-wing incumbent share. Estimates obtained from Model 4 in Table 1.

CRISIS EFFECTS

We now ask whether the main valence and positional effects that we uncovered are altered in times of an economic shock, such as the Great Recession, or economic downturn more generally. This possibility is explored in Table 2.

TABLE 2. Explaining the incumbent vote share, the impact of crisis on valence and positional economic voting

	Model 1		Model 2	
	b	(SE)	b	(SE)
Incumbent vote e-1	0.669***	(0.049)	0.673***	(0.049)
Post-2008	0.404	(1.380)		
GDP t-1	1.010***	(0.190)		
Post-2008 × GDP t-1	-0.172	(0.596)		
Δ Gini	-537.440***	(155.511)		
Post-2008 × Δ Gini	310.025	(513.693)		
Negative GDP t-1			1.108**	(0.394)
Positive GDP t-1			0.860***	(0.245)
Negative Δ Gini t-1			-653.853*	(313.913)
Positive Δ Gini t-1			-403.224	(249.465)
Country fixed effects?	Yes		Yes	
Constant	10.360***	(2.465)	10.342***	(2.611)
(N)	310		310	
R^2	0.738		0.738	

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p <$ 0.001.

In Model 1 we verify whether the impact of GDP and Gini has been altered by the Great Recession. To that end, we add to the model a dummy variable that marks all elections since 2008 as held during that economic period or not. We also add interactions between the two economic indicators and this dummy. We note, first, that the effect of GDP appears unchanged by the Great Recession, as the lack of a significant interaction effect reveals, thereby confirming our conclusion from earlier research (Dassonneville and Lewis-Beck, 2014b). Second, the results of Model 1 indicate that inequality, measured by means of a Gini coefficient, has not become a significantly more important factor post-2008.

But, the Great Recession cannot be considered a unique economic experience, in that earlier periods have also gone through negative economic growth cycles. Thus, we go beyond the specifics of the Great Recession, testing the impact of good and bad economic times more generally. We do so by estimating a spline regression model (Marsh and Cormier, 2002), where we specify a spline knot (at zero) for the three economic indicators. Doing so, we can estimate the impact of negative and positive GDP growth and the impact of negative and positive changes in the Gini-index. The results of Model 2 indicate asymmetries in the effects of GDP growth and Gini-index change. First, we find significant effects of growth in both negative and positive GDP growth sets, but a stronger effect under negative growth. This finding corroborates earlier findings of an asymmetry in economic voting (Bloom and Price, 1975; Dassonneville and Lewis-Beck, 2014b). Looking at asymmetries in the effect of inequality, we find negative significant coefficients for both negative and positive changes in Gini, but the coefficient only attains significance for negative Gini. These results go against the expectation of a negativity bias and imply that decreasing inequality influences the incumbent's vote share more strongly than increases in inequality – measured by the Gini index.

STRUCTURAL EFFECTS: THE ELECTORAL SYSTEM, COALITION GOVERNMENTS AND FEDERALISM

The main results presented in Table 1 suggest that incumbents in our sample of countries are held accountable for both GDP growth and changes in inequality. In this section, we assess whether these effects apply generally or whether they are conditioned by political and institutional characteristics that distinguish the countries in our dataset.

First, building on earlier work on how the clarity of responsibility can condition the economic vote (Dassonneville and Lewis-Beck, 2017; Hobolt, Tilley and Banducci, 2013; Powell and Whitten, 1993), we study the moderating influence of electoral systems. Further, we investigate whether these results are affected, if at all, by prevailing lines of central political authority in the democracy. In particular, do federal

systems "cushion the economic blows" better than unitary systems, or vice-versa (Anderson, 2006)? Finally, we take into account the possibility that accountability is essentially directed towards the main government party when a coalition governs (Debus, Stegmaier and Tosun, 2014; Larsen, 2016).

For verifying the impact of electoral systems, we distinguish between majoritarian and other non-majoritarian systems. Information on electoral systems comes from Borman and Golder (2013). For investigating whether federalism moderates the effects, we use a continuous and dynamic measure of federalism; the Regional Authority Index (RAI), developed and constructed by Hooghe et al. (2016). Information on the party of the Prime Minister – which we consider the main party in government – comes from the ParlGov data.

We first account for the moderating impact of majoritarian systems and federalism on the effects of GDP growth and changes in Gini by adding to Model 3 in Table 1 interactions between each of these conditioning variables and GDP growth and Δ Gini.[10]

The results of these additional models (reported in Appendix 4) suggest, first, that our main results are robust to accounting for conditional effects of electoral systems or federalism, as both the main effect of GDP and the main effect of changes in Gini are largely unaffected by the inclusion of these interactions (when accounting for federalism, the significance level of the effect of change in Gini drops to .1, however). Second, with regard to the conditional effects themselves, the results do not offer indications that majoritarian electoral rules or federalism significantly alter the effects.

A second way to probe the robustness of our results relates to the operationalization of our dependent variable. While we have focused on the incumbent vote share as the combined result of all government parties, a number of studies have recently argued that economic voting is more strongly

[10] Note that we do not include country fixed effects in these models, as we explicitly model differences between countries by means of, e.g., the majoritarian system variable.

directed towards the party of the Prime Minister, at least in the context of coalition governments (Debus, Stegmaier and Tosun, 2014; Larsen, 2016). Taking this possibility into account, we have replicated our results with a focus on the party of the Prime Minister only. The results of these additional analyses, reported in Appendix 5, are generally in line with the main results reported here.

CONCLUSIONS

Traditionally, the European voter has responded to economic change at the ballot box, punishing governments for good performance, rewarding them for bad. In this way, they have held their democratic rulers accountable for their actions, even if imperfectly. Incumbents who do not deliver the economic goods have had a right to fear that, like the last "rascals," they will be thrown out. The study at hand offers confirmation that this longstanding reward and punishment mechanism for deciding elections remains in place on the European continent, and beyond. The valence issue of economic growth continues to be highly salient for these voters, and its general strength as a sanctioning tool for failing governments does not show signs of diminishing here.

The presence of such an economic vote lacks surprise. But what does surprise comes from another kind of economic vote – reward and punishment for changes in inequality. Increased inequality of income elicits a voter response, with heightened calls for the government to step down or be cast down.

In contrast to what we hypothesized, inequality does not function as a positional issue, as both incumbent parties to the left and to the right face vote losses when inequality increases. This finding deserves elaboration. Why is it that left-leaning parties, though generally and historically associated with inequality-reducing policies (Schumacher, Vis and Van Kersbergen, 2013), are not rewarded (punished) more when they (do not) succeed in reducing inequalities? One possibility is that the issue ownership of inequality is not clearly in the hands of left-wing parties, or that their claim on this issue is only weak.

Another explanation would be that inequality effectively is a valence issue, and that the only positional element of inequality relates to the means to fight inequality –via redistributive policies (a left-wing strategy) or via measures to stimulate economic growth (a right-wing strategy). In other words, it is inequality as an *instrument*, e.g., social spending, rather than an *outcome*, e.g., income redistribution, that makes it a positional issue for voters. Relatedly, there may be a micro-macro problem where, over time, left-wing policy choices are cancelled out by right-wing policy choices (and vice-versa), in the aggregate rendering the same apparent impact on income inequality. In a different vein, the current Gini measures may be more error prone than we realize. These potential explanations are only speculative, but we hope that further research on the impact of changes in inequality on incumbent's performance will shed light on this question.

Finally, the electoral effects of these economic issues are not fully stable. While structural effects, e.g., majoritarian rule, coalition government or federalism, appear very weak, the changing economic context can matter. In particular, during periods of negative economic growth voters are more volatile, with bad economic news generating a stronger punishment of the incumbent, as compared to times of generally positive growth, when voters are more forgiving of the occasional downturn. The same does not hold for changes in inequality, as we find somewhat stronger effects for decreases in Gini than for decreases in Gini. Of course, the political and economic contextual variables examined here do not compose an exhaustive list. Those variables not considered here promise fertile ground for future research.

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Supplementary materials

APPENDIX 1. DESCRIPTIVE STATISTICS OF VARIABLES INCLUDED IN THE ANALYSES

TABLE 1. Descriptive statistics

Variable	Minimum	Maximum	Mean	SD	*(N)*
Incument vote share	2.63	81.70	39.87	14.11	310
Incument vote share e-1	6.90	84.40	44.82	12.97	310
GDP growth t-1	-32.10	12.90	2.75	3.87	310
Δ Gini t-1	-.01	.01	0.00	0.00	310
Left-wing vote share	0.00	1.00	0.36	0.41	310
Post-2008	0.00	1.00	0.17	0.38	310
Majoritarian electoral rules	0.00	1.00	0.18	0.39	239
Federalism (rai index)	0.00	37.00	13.30	10.77	246

Note Descriptive statistics of variables included in the main analyses and in the additional robustness tests.

FIGURE 1. Distribution of the dependent variable

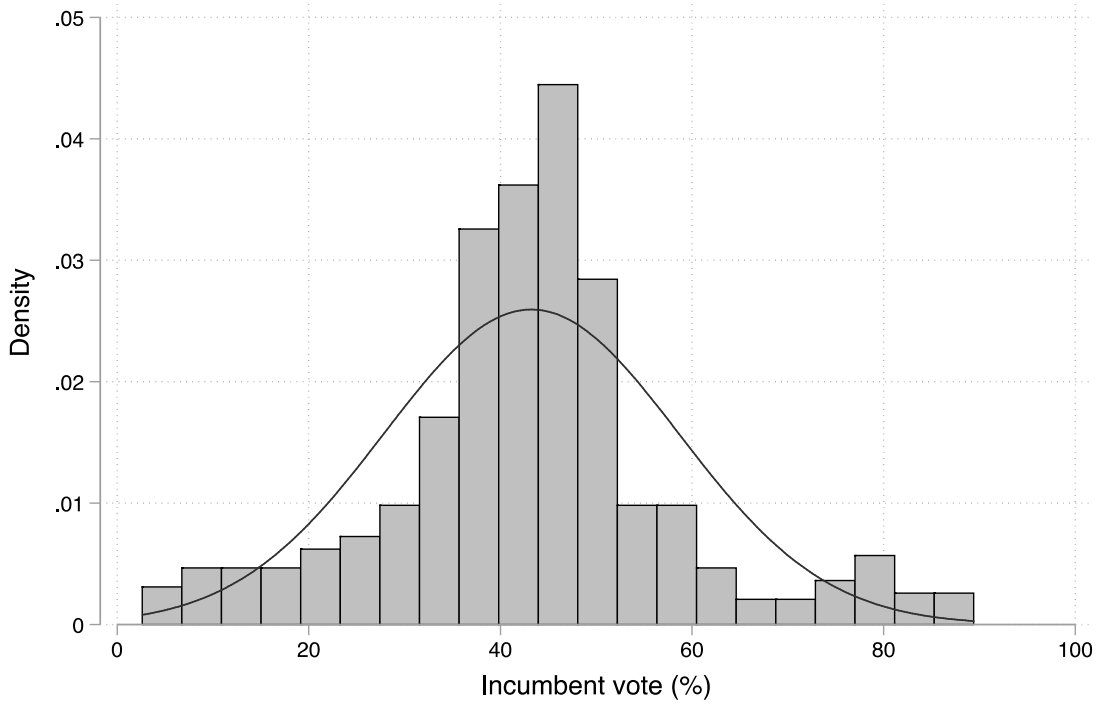


FIGURE 2. Distribution of gdp growth variable by country

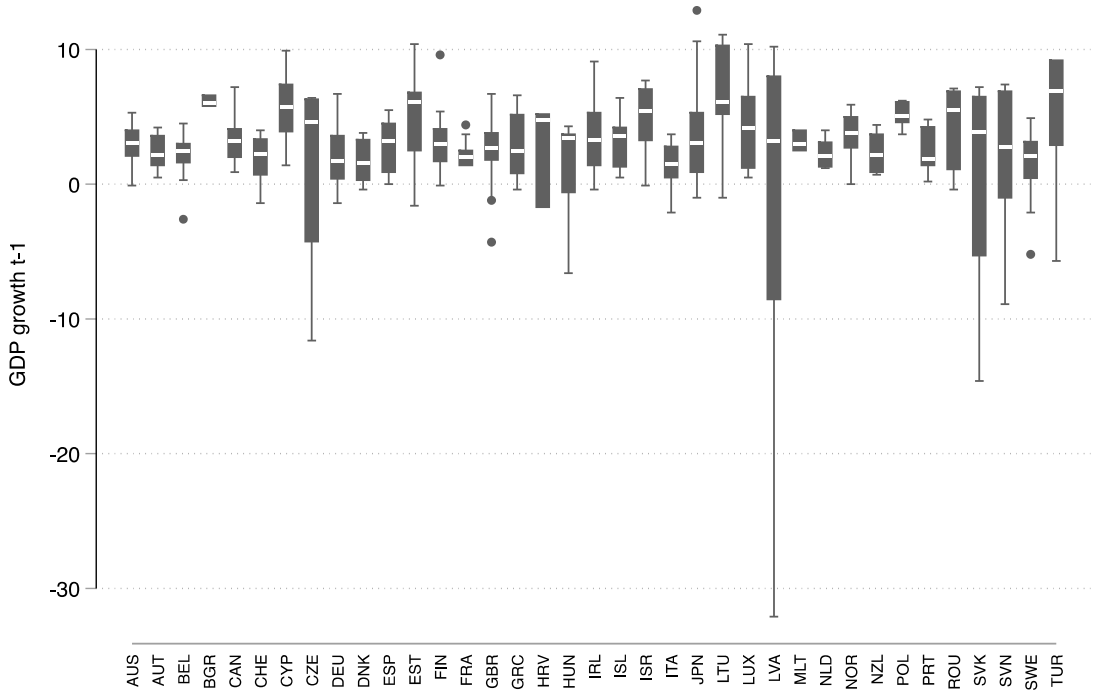
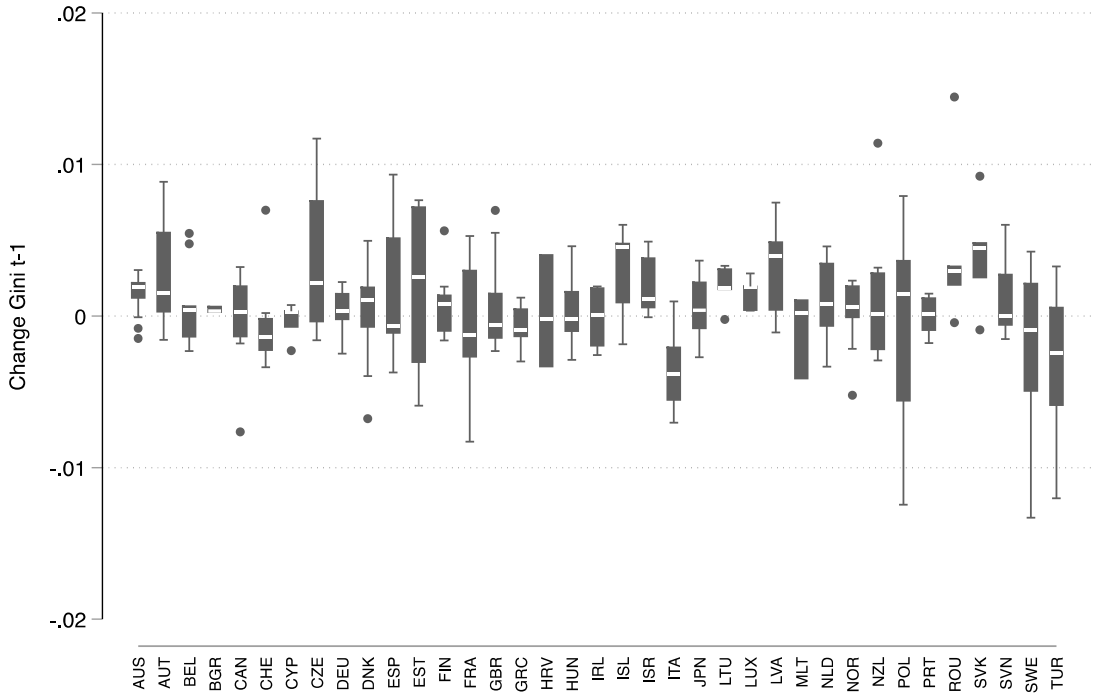


FIGURE 3. Distribution of change in gini variable by country



APPENDIX 2. IMPACT OF CHANGE IN ECONOMIC INDICATORS DURING THE CABINET'S TERM IN OFFICE

TABLE 1. Explaining the incumbent vote share, change in economic indicators over the government term

	Model 1 b (SE)	Model 2 b (SE)	Model 3 b (SE)	Model 4 b (SE)
Incumbent vote e-1	0.744***	0.743***	0.752***	0.741***
	(0.051)	(0.055)	(0.051)	(0.052)
Δ GDP growth term	0.397**		0.427**	0.629***
	(0.143)		(0.141)	(0.144)
Δ Gini term		-145.929	-150.183	-110.379
		(89.407)	(95.140)	(142.897)
Left-wing vote share				1.123
				(1.230)
Left-wing × Δ GDP growth				-1.060*
				(0.426)
Left-wing × Δ Gini				-20.373
				(225.469)
Country FE	Yes	Yes	Yes	Yes
Constant	9.643***	10.077***	9.715***	9.461***
	(2.554)	(2.709)	(2.516)	(2.518)
(N)	267	260	260	260
R^2	0.740	0.725	0.735	0.742

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

APPENDIX 3. CONDITIONAL EFFECT OF IDEOLOGY, EXCLUDING THE IDEOLOGY × GDP GROWTH INTERACTION

TABLE 1. Explaining the incumbent vote share, valence and positional economic voting

	Model 1	
	b	(SE)
Incumbent vote share e-1	0.667***	(0.049)
GDP growth t-1	0.976***	(0.174)
Left-wing vote share	0.152	(0.989)
Δ Gini t-1	-641.447*	(281.983)
Left-wing × Δ Gini t-1	260.453	(397.819)
Country FE	Yes	
Constant	10.407***	(2.531)
(N)	310	
R^2	0.738	

Note Results of a linear regression model with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

APPENDIX 4. ACCOUNTING FOR ELECTORAL SYSTEMS AND FEDERALISM

TABLE 1. Accounting for electoral systems and federalism

	Model 1		Model 2	
	b	(SE)	B	(SE)
Incument vote share e-1	0.835***	(0.052)	0.817***	(0.051)
Majoritarian rules	0.609	(2.283)		
GDP growth t-1	0.834***	(0.238)	0.859**	(0.281)
Majoritarian × GDP growth t-1	0.121	(0.531)		
Δ Gini t-1	-615.343**	(234.147)	-593.225	(325.022)
Majoritarian × Δ Gini t-1	648.199	(453.288)		
Federalism (rai index)			0.173*	(0.080)
Federalism × GDP growth t-1			-0.019	(0.019)
Federalism × Δ Gini t-1			10.863	(16.203)
Constant	0.263	(2.376)	-0.301	(2.828)
(N)	239		246	
R^2	0.628		0.640	

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

APPENDIX 5. EXPLAINING THE VOTE SHARE OF THE PARTY OF THE PRIME MINISTER

Table 1. Explaining the PM party vote share, valence and positional economic voting

	Model 1 b (SE)	Model 2 b (SE)	Model 3 B (SE)	Model 4 b (SE)
PM vote share e-1	0.521***	0.508***	0.529***	0.522***
	(0.066)	(0.081)	(0.065)	(0.066)
GDP growth t-1	0.872***		0.828***	0.828***
	(0.109)		(0.107)	(0.114)
Δ Gini t-1		-575.927***	-483.809***	-581.918**
		(154.298)	(146.768)	(218.595)
Left-wing PM				0.736
				(1.282)
Left-wing PM × GDP t-1				-0.051
				(0.357)
Left-wing PM × Δ Gini t-1				197.209
				(313.724)
Country FE	Yes	Yes	Yes	Yes
Constant	15.056***	18.880***	15.574***	15.545***
	(2.926)	(3.513)	(2.954)	(2.973)
(N)	278	278	278	278
R^2	0.643	0.600	0.660	0.662

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p <$ 0.001.

Table 2. Explaining the PM vote share, crisis effects

	Model 1		Model 2	
	b	(SE)	B	(SE)
PM vote share e-1	0.527***	(0.063)	0.530***	(0.067)
Post-2008	-1.187	(1.275)		
GDP t-1	0.772***	(0.116)		
Post-2008 × GDP t-1	0.844*	(0.361)		
Δ Gini t-1	-566.347***	(148.414)		
Post-2008 × Δ Gini t-1	826.174	(521.333)		
Negative GDP t-1			0.851***	(0.177)
Positive GDP t-1			0.809***	(0.183)
Negative Δ Gini t-1			-509.579*	(249.673)
Positive Δ Gini t-1			-461.945*	(233.747)
Country fixed effects?	Yes		Yes	
Constant	15.855***	(2.920)	15.513***	(2.984)
(N)	278		278	
R^2	0.668		0.660	

Note Results of linear regression models with panel-corrected standard errors (in parentheses). Country fixed effects are included. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p <$ 0.001.