

**Ruth Dassonneville**

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**Michael S. Lewis-Beck**

**Economic Policy Voting and Incumbency: Unemployment in  
Western Europe**

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**ABSTRACT**

The economic voting literature has been dominated by the incumbency-oriented hypothesis, where voters reward or punish government at the ballot box according to economic performance. The alternative, policy-oriented hypothesis, where voters favor parties closest to their issue position, has been neglected in this literature. We explore policy voting with respect to an archetypal economic policy issue – unemployment. Voters who favor lower unemployment should tend to vote for left parties, since they “own” the issue. Examining a large time-series cross-sectional (TSCS) pool of Western European nations, we find some evidence for economic policy voting. However, it exists in a form conditioned by incumbency. According to varied tests, left incumbents actually experience a net electoral cost, if the unemployment rate climbs under their regime. Incumbency, then, serves to break any natural economic policy advantage that might accrue to the left due to the unemployment issue.

Virtually all economic voting studies, and there are hundreds, examine a variant of the classic reward-punishment hypothesis. (See the reviews in Duch (2007); Hellwig (2010); Norpoth (1996); Lewis-Beck and Stegmaier (2000; 2007)). That is, voters are assumed to vote with the government when economic times are good, but vote against the government when economic times are bad. In his seminal work, Kiewiet (1983, 7-8) labelled this sort of economic voting as *incumbency-oriented*. However, he distinguished another kind of economic voting as *policy-oriented*. That is, voters are assumed to vote for the party closest to their economic policy position, regardless of whether it governs. Kiewiet (1983,13) goes on to note that studies of policy-oriented economic voting were rare. Writing over 25 years later, Lewis-Beck and Nadeau (2011, 288-290), in their literature review, observe that policy-oriented economic voting studies remain rare. They clarify, as well, that the incumbency-oriented hypothesis sees the economy as a valence issue, whereas the policy-oriented hypothesis sees the economy as a positional issue.

Valence connotes an issue where voters are in wide agreement, while position connotes an issue where voter are in wide disagreement. Pure policy-oriented economic voters, then, select a party closer to their issue position, regardless of its incumbency status. Further, policy-oriented economic voters may continue to select that same party, election after election, if that party appears to “own” the issue (Petrocik 1996). Such issue voters become the “clientele” of the party, continually favoring it at the ballot box, according to Rattinger (1991). As an empirical example, he records the link in Germany between the unemployment issue and vote for the Social Democratic Party (SPD). This early study is suggestive for the present investigation, as shall be seen.

We examine the impact of economic policy-oriented voters in Western European national elections, focusing on the unemployment question. While unemployment has of course been

subject to other electoral research, that work has typically been in the context of unemployment as a classic valence issue, or as a trade-off issue vis-à-vis inflation. [The earliest efforts there are on the British case. See Butler and Stokes (1969) and Goodhart and Bhansali, 1970.)] However, the notion that unemployment stands as a positional issue along a left-right scale, in the Downsian sense, has been virtually absent from the traditional economic voting literature (Downs, 1957). Here we expand this limited literature, bringing to it this positional perspective on unemployment. Specifically, we explore the connection between changes in the unemployment rate and left party voting, utilizing a large time-series cross-sectional pool. Below, we examine further the available literature, and formulate testable hypotheses. Then, we present our data and measures. After explicating our statistical methods, we show the results, and challenge them to different robustness checks. The policy issue of unemployment works to shape vote choice in these advanced democracies. However, perhaps unexpectedly, incumbency-oriented voting intrudes to condition this policy-oriented vote.

## **THEORY AND LITERATURE**

As Stokes (1963) long ago observed, the economy offers the perfect example of a valence issue. Among voters, consensus prevails, as everyone wants economic prosperity. While this clearly stands as a paramount idea, taken alone it limits the potential space of economic issues. In particular, it does not take into account differing voter positions on economic policy. As Stokes (1963, 373) himself explained, “Let us call ‘position issues’ those that involve advocacy of government actions from a set of alternatives over which a distribution of voter preferences is defined.” With respect to the economy, these position issues could include questions such as unemployment, regulation, taxation, or nationalization.

For example, voter opinion might be distributed along a continuum with respect to taxation, where those at one extreme favor a highly progressive system, while those at the other extreme do not. The political question, then, is whether these different economic policy positions influence vote choice. We know, in fact, that policy views on tax progressivity have shaped the vote in at least two electorates – the United States and the United Kingdom. Lewis-Beck and Nadeau (2009) found that the more voters favored progressive taxation, the more likely they were to vote for Obama in the 2008 presidential election. In an investigation of the 2010 British general election, Lewis-Beck et al. (forthcoming) discovered that voters favoring tax progressivity were more likely to support Labour. Moreover, these effects persisted in the face of stringent statistical controls. The implication is that positional economic voting has an impact, independent of valence economic voting.

What about the positional issue at hand, that of unemployment policy? Kiewiet (1983, 8) treats voting on the unemployment issue as the archetypal example of policy-oriented economic voting. Using the United States case, he identifies voters who always vote Democratic, regardless of the president's party, because they believe that Democrats are more likely to deliver on their policy preference for lower unemployment. In a Western European context, this argument underpins Rattinger's (1991) finding that the SPD generally benefits from rising unemployment; German voters tend to feel that that leftist party will be more likely to solve the problem. A contemporary work, from Spain, suggests that increasing unemployment helps Socialists at the ballot box, even when they are incumbent (Magalhães et al. 2012). In their investigation of Hungarian legislative elections, Stegmaier and Lewis-Beck (2009) also show that the Socialists, in office or not, always reap votes from rising unemployment. However, Dassonneville and Hooghe (2012) find that in Belgium a Socialist Party incumbent is actually punished for rising

unemployment. The results of Pacek and Radcliff (1999) point in the same direction, with respect to leftist parties in Scandinavia. By way of contrast, Arnesen (2012) concludes that the relationship in Norway is conditional, with the left gaining votes from increasing unemployment when in opposition, but losing votes when in government.

Together, the foregoing studies suggest that unemployment change can influence the left vote. However, the studies vary by country and by time period. Further, they are inconclusive with respect to the form of the relationship takes, e.g., is positive, negative, or interactive? In answer, we propose to look at a large number of countries, over a long time period. First, taking inspiration from Kiewiet's theoretical proposition linking unemployment to the vote, we offer for testing the following hypothesis:

**H1:** As the unemployment rate worsens, the left vote share increases.

As stated, H1 posits a general monotonic relationship between unemployment rate change and left vote. However, some of the above empirical case studies imply that incumbency itself may condition the relationship (Arnesen 2012; Dassonneville and Hooghe 2012; Magalhães et al. 2012; Pacek and Radcliff 1999). In particular, it appears that when the Socialists are in office, they may benefit less electorally from worsening unemployment. Therefore, we offer a follow-up hypothesis:

**H2:** As the unemployment rate worsens, the left vote share increases less, under a left incumbent.

## DATA AND MEASURES

When investigating the electoral success of left parties, the definition of a left party needs to be clear. We use the classification of party families provided in the ParlGov dataset (Döring and Manow 2011). Their dataset distinguishes basic party categories, including Christian democratic, Communist/socialist, Conservative, Green/Ecologist, Liberal, Regional, Right-wing, Social democratic and Special issue parties.<sup>1</sup> For the calculation of the left vote share, we summed the electoral results of Communist/socialist and Social democratic parties.<sup>2</sup> Doing so, we focus on the traditional left vote. Data on electoral results (for legislative elections only) also come from the ParlGov database. We focus on established Western European democracies, with parties and voters accustomed to participating in legislative elections. As the histogram of Figure 1 shows, there is good variation in the dependent variable of left vote share, and the distribution approaches normality. (To allow for dynamic modeling, a lagged dependent variable is included in the data-set as well: the summed vote share of left parties in the previous legislative elections).

[Figure 1 about here]

We are interested in the impact of economic policy voting on left parties. As an economic indicator to capture this effect, we make use of the *change* in the unemployment rate. (Measurement experiments, looking at the unemployment rate as a level rather than a change score, demonstrated that the level measure did not significantly influence the left vote share. Results available upon request). For calculating changes in unemployment rates in the countries analyzed, we make use of yearly unemployment rates as provided in the World Economic

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<sup>1</sup> Not all parties in their dataset have received a party family label; some are categorized as ‘no family’, others still have to be coded. Furthermore, electoral alliances between parties from different party families are coded as ‘electoral alliances’. Only parties that received more than 1% of the votes were included in the ‘Left parties’ vote share’.

<sup>2</sup> For an overview of which parties are included and the categories these parties are in, see the Appendix.

Outlook Database of the IMF (*World Economic Outlook Database* 2012). Changes in unemployment over the legislative cycle, i.e., from the year beginning the term to the year before the election at time  $t$ , are calculated. Doing so, we include the trend in unemployment rates as observed by  $t-1$  in the analyses, thereby ensuring some lead time. Data on unemployment rates are available from the early 1980s onwards. (Interestingly, across the period this change in unemployment rate variable ranges from -6.44 to 10.00, with a standard deviation = 2.39. Further, that distributional pattern hardly varies under left incumbent versus non-left incumbent governments, i.e., standard deviation = 2.19 and 2.67, respectively.) Elections in Western Europe from 1982 to 2012 are taken into account, yielding a data-set of 149 elections from 21 countries.<sup>3</sup> The elections and countries included are listed in Table 1.

[Table 1 about here]

Since the mechanisms of left voting may depend on whether leftist parties are part of the ruling coalition, we include a measure of incumbency. Of course, a dummy variable scored 1 if a leftist party is in the governing coalition and 0 if no leftist parties are in the coalition, is one possibility. But another, more telling measure, is the percentage of incumbent seats in parliament that are held by members of a left party; thus, we use this measure, labelling it left incumbency share.

Additionally, some elements of the political context are taken into account. First, the effective number of parties is controlled for, since the electoral success of leftist parties may be affected by the number of parties competing in elections. Data on the effective number of parties (ENEP) in the elections analyzed come from Gallagher's (2012) database on electoral systems.

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<sup>3</sup> For Germany, data on West Germany are included before unification and data on Germany as a whole afterwards. These are considered different countries.

(Experiments were carried to determine if main results were altered if ENEP was excluded, and/or the least squares index of party disproportionality were included. The disproportionality measure failed to demonstrate significance. Further, if ENEP is excluded, the pivotal result, as reported in Table 3, Model III, maintains itself virtually intact. Results available upon request). Second, turnout in the elections analyzed is controlled for, since the vote share of left parties may be higher when turnout is higher (Pacek and Radcliff 1995). Data for turnout in the elections analyzed come from the IDEA on-line database (*Voter Turnout. International Institute for Democracy and Electoral Assistance (IDEA) data 2012*). Third, a variable measuring time between elections is controlled for, on the notion that there might be significant erosion of left support, as temporal distance from the last contest increases. The maximum score on this variable is five years, while the minimum is one year; the average is 3.66 years. Descriptive statistics on this and for the other variables mentioned are provided in Table 2. For both turnout and ENEP, lagged effects as well are included in the dynamic models, referring to turnout and ENEP in previous elections in the countries analyzed.

[Table 2 about here]

## **METHODS**

The data analyzed are time series cross sectional (TSCS) data, with multiple elections observed for all countries. Different approaches can be taken for analysing such data (Bell and Jones 2012). Given that our interest concerns the causal effect of unemployment on left party voting regardless of contextual differences, we begin with a fixed effects approach. Thus, the variance at the country level is controlled for by means of country dummies, leaving just the



within-country effects to be estimated (Allison 2009; Bell and Jones 2012). However, to provide robustness checks, we go on to include other approaches as well.

## **INITIAL RESULTS**

As a first step, we investigate the effect of unemployment rate change on left party vote share, without controlling for the lagged dependent variable. Results of Model I in Table 3 indicate a noteworthy unemployment rate effect. The coefficient, significant and in the expected direction, suggests that when the unemployment rate rises 1 percentage point, traditional leftist parties gain .41 of a percentage point in vote share. Hence our first hypothesis, H1, receives preliminary support. What about influence from the control variables? On the one hand, turnout does not seem to significantly affect the electoral success of left parties, contrary to earlier findings of Pacek and Radcliff (1995). The effective number of parties, on the other hand, quite logically has a strong and significant impact. Leftist parties obtain fewer voters as the number of parties in an electoral system increases. With respect to the other control variables, no significant effects appear. That is, no net incumbency effect emerges, i.e., leftist parties do not attain a significantly larger vote share as left parties gain majority seats in parliament. Finally, while the distance from the last election carries the expected (negative) sign, it falls short of significance. Apparently, no “disillusionment” of the left occurs with this passing of time.

Model II goes on to include a lagged dependent variable, so reducing omitted variable bias. This vote share of leftist parties at  $t-1$  is actually a strong control, making causality claims more convincing. Clearly, changes in the unemployment rate are still significantly related to left party vote share, with the effect at least as strong, when compared to the static model.

(Furthermore, the significant negative effect of more parties in an electoral system holds). Lastly, the model fit shows a substantial boost, with the addition of this lagged term.

Model III adds an interaction effect between changes in unemployment rate and the incumbency dummy. Doing so allows us a first test of H2, the hypothesis that left parties benefit less from rising unemployment rates when a left party is in government. This hypothesis receives support. The main effect of an increasing unemployment rate remains significantly positive for the left. However, the interaction effect shows that, for a left incumbent, that effect diminishes considerably. Indeed, the interaction effect more than cancels out the main effect ( $.97 - 1.46 = -.49$ ), turning electoral benefits to the left into electoral costs.

[Table 3 about here]

These effects are graphically presented in Figure 2. Initially, growing unemployment rates increase the vote share of leftist parties, if these are all in opposition. Further, decreasing unemployment rates are associated with a significantly smaller left vote share, if all left parties are in opposition (see Figure 2a). However, as the left incumbency share increases, the positive effect on the left vote share begins to decline (compare Figure 2a to Figure 2b). By the time the left incumbency share reaches 100 percent, the trend of left vote impact of rising unemployment is highly negative (see Figure 2c). Taking the confidence bands into account, the left only makes gains in this graph at higher ends of decreasing unemployment, and that effect appears quite small.

[Figure 2 about here]

## FIRST ROBUSTNESS CHECKS

The estimates of Table 3 support the hypothesis that economic policy-oriented voting may exist. In the face of a worsening unemployment rate, voters may turn leftward. However, this benefit to the left appears blunted, even reversed, as left assumes a larger role in government (see Model III). Thus, the left in office cannot depend on winning more support if unemployment rises, despite the fact that it might be perceived by some to “own” that issue. If such a proposition rings true, the finding certainly has implications for left policy strategy in government. Because of these implications, some caution is in order. Therefore, we perform additional analyses (on the specification of Model III, Table 3) in order to ascertain the robustness of these findings: a general random effects maximum likelihood estimation (MLE), a within-between random effects MLE, and a panel-corrected standard errors (PCSE) estimation. These new estimates appear in Table 4.

[Table 4 about here].

Model I of Table 4 presents the results of a standard random effects specification. Instead of including dummies for capturing the country effects, a nested structure of elections within countries is specified. As can be observed, results are robust to this modeling approach. The main effect of unemployment on the vote share of left parties is still positive and significant, while the interaction with the incumbency dummy holds its sign and significance level as well. Substantively, this Model I says about the same thing as Model III in Table 3: on net, a left incumbent loses from a rising unemployment rate ( $.93 - 1.37 = - .44$ ). Model II additionally includes the means of all independent variables, thus capturing heterogeneity and transforming

the model into a within-between random effects model. This more elaborate specification sustains the Model I results regarding unemployment effects. Indeed, the precise estimate of net effects is almost the same:  $(.97 - 1.46 = -.49)$ .

The above multi-level models (I and II in Table 4) indicate that the unemployment rate change does not vary significantly across countries, thereby providing further support for the fixed effects results of Table 4. One caution with these corroborative multi-level model findings concerns their limited sample base of 21 countries. However, the fixed effects results receive support from yet another approach, that of a panel-corrected standard errors (PCSE) model, appearing in Model III, Table 4. Such estimation has further value, too, because of the over-time nature of the data-set. Clearly, these results support the initial fixed effect results (of Table 3, Model III), yielding almost the same negative net effect of the changing unemployment rate ( $.90 - 1.31 = -.41$ ). An additional insight gleaned from the PCSE approach is the strength of overall model fit, with an R-squared = .71.

## **SECOND ROBUSTNESS CHECKS**

Estimation using the various approaches of Table 4 suggest the soundness of the initial fixed effects result – under a left incumbency the impact of rising unemployment on left vote becomes unambiguously negative. Nevertheless, the finding may still be threatened by autocorrelation. Therefore, in further testing, we examine three difference designs. We begin with a simple first differenced design, removing country level differences and autocorrelation at once. In this highly controlled specification, we regress (via ordinary least squares) change in unemployment rate on change in left vote share (reporting cluster-robust standard errors). Again we observe the earlier result: the estimated negative unemployment effect overwhelms the

positive unemployment effect, under the condition of left incumbency. Moreover, the magnitude of the effect appears at least as strong ( $1.04 - 1.60 = -.54$ ).

[Table 5 about here]

Besides autocorrelation, there can be concerns regarding the endogeneity of explanatory variables (Roodman 2009). Building on the work of Anderson and Hsiao (1982), who proposed to eliminate correlated errors in a dynamic specification by means of first differencing, Arellano and Bond (1991) have suggested a GMM estimator that additionally makes use of a set of lagged variables as instruments. Although the GMM differences estimator of Arellano and Bond clearly has some advantages, it also has been found to suffer from a large finite sample bias, with estimates of this method regularly found to be imprecise (Blundell and Bond 1998). Therefore, elaborating on the GMM differences estimator, Arellano and Bover (1995), and Blundell and Bond (1998), suggest including additional moment conditions in levels in the estimations. Given the added value of GMM estimators for dynamic modeling, plus their popularity within the research literature (Roodman 2009) for validating robustness, we will present an Arellano-Bond differences GMM estimation and an additional levels specification, also called system-GMM (Blundell and Bond 1998). See Models II and III, respectively, in Table 5.

These GMM estimation approaches are particularly suited for data having many panels but few time periods, such as we have (with more countries than time periods for each country). The estimations, however, come with additional assumptions. First, there should be no second-order serial correlation. Second, instruments are only valid if they are not correlated with the errors of the first-differenced equation. (We test for violations of these assumptions by means of an Arellano-Bond and a Sargan-test, respectively.) These estimations permit inclusion of time

effects; consequently the GMM models include election dummies (coefficients not reported). Their estimations are based on the use of lagged values of the dependent variable as instruments, with two lags as suggested by Arellano and Bond (1991). Further, lagged values of the independent variables can be used. Given that previous values on some of our independent variables (i.e. turnout and the effective number of parties) can be expected to have an impact on current values, the estimations also include two lags of these independent variables.

The GMM estimations (Models II and III, Table 5) again show that the direction and significance levels of the unemployment variable, and its interaction variable with the left incumbency share variable, are stable in Models II and III (when compared to the fixed effects Model III in Table 3). The size of the interactive effect however, is clearly much stronger than the main effect of unemployment. In fact, here the main effect and the interaction effect are very far from cancelling out. Instead, their combination ( $1.18 - 2.10 = -.92$ , and  $1.34 - 2.14 = -.80$ , respectively) suggest a still stronger net negative impact of rising unemployment on left vote, to the degree that left parties govern.

This very strong GMM result may be taken with a grain of salt, given that the method requires looking at somewhat fewer elections, with many instrumental variables. Nevertheless, it does confirm the robustness of the initial, straightforward, fixed effects finding: when the left governs, rising unemployment costs that government votes. When a left coalition governs, then, it will be punished for rising unemployment. It cannot escape the blame for bad economic policy, even if it “owns” the unemployment issue. Indeed, the electorate appears to hold it accountable to this “ownership”, punishing it for failure to fulfill its promise.

## **THE LEFT ELECTORAL STRATEGY VIS-À-VIS UNEMPLOYMENT**

The left vote share in these Western European nations responds to the unemployment picture. In particular, changes in the unemployment rate clearly reduce the left vote under a left incumbency. This circumstance raises a strategic question for left governments: what should they do when they face a rising unemployment rate? If they do nothing, they almost certainly will lose votes. So what if they make program changes, or initiate counter-cyclical policies, aimed at cushioning the unemployment shock, in that way perhaps saving votes for the left. We have evidence on two such strategies, one general and one specific. For the former, we distinguish between different types of welfare regimes. Ferrera (1996) offers the following Western European typology: Anglo-Saxon, Bismarckian, Scandinavian, and Southern.

Using this typology, we assign each country in the sample, creating a time-invariant variable situated at the country-level. Then, we explore a hierarchical linear model to investigate the effect of welfare system on left party vote share, adding these variables as main and interactive effects to our general multi-level model (Table 4, Model I). As expected, countries under certain welfare regimes, as a block, vote significantly more left in general, namely the Southern welfare regimes (Italy, Greece, Portugal, Spain, Cyprus and Malta). However, with respect to the cross-level interactions with the unemployment rate change variable, none are significant. Thus, welfare regime differences do not appear to alter the effect of unemployment rate change, with respect to the left vote. Rising unemployment, then, will hurt a left government just as much, regardless of the type of national welfare system it administers.

However, perhaps this finding on welfare regime type fails to be fine-grained enough to pick up policy differences. Therefore, we carried out analysis on a more direct measure- national public spending on unemployment policies (measured as a percentage of GDP according to OECD data). We include this variable as a main effect, and as an interaction effect with the

unemployment rate change, in our baseline fixed effects model (Table 3, Model III). Because of missing data, the sample is reduced (121 elections, in 19 countries). The interaction term between spending on unemployment policies and change in unemployment rates attains marginal significance, also hinting at a collinearity problem ( $t = -.39/.19 = 2.05$ ). This result, though fragile, does suggest that left government spending on the negative consequences of rising unemployment can mitigate the vote losses they will suffer from this unemployment. Further, although these are macro-data, it does imply that unemployed individuals themselves can make some difference. However, in terms of strategies of the left in power, even this weak result sends a message: if it wishes to curb vote losses in the face of increasing unemployment, it should consider implementation of programs targeted at those most directly harmed by that unemployment.

## CONCLUSION

The policy-oriented hypothesis of economic voting receives naïve support, according to our initial analysis of this Western European pool. In general, an increase in the unemployment rate appears to lead voters to reward left parties. In particular, a percentage point increase in the unemployment rate is associated with just under a one-half percentage point rise in support for left parties. Thus, positional issues on the economy, as well as valence issues, can matter to voters. However, the presence of positional economic voting, as discerned here, remains far from a negation of incumbency-oriented voting.

We observe that, when left parties are in office, the left receives much less electoral benefit from rising unemployment. In fact, voters seem to hold the ruling left responsible, to



considerable degree, for the deteriorating unemployment rate. At least a faction of them punish the left by withdrawing their support. Overall, the punishment is severe enough that it largely cancels out any long-term benefit coming from left “ownership” of the unemployment issue. According to our central finding, a finding sustained under tough statistical testing, the left in government clearly loses votes from hikes in the unemployment rate. They may own the issue, but since they are not displaying “pride of ownership” in the face of growing unemployment under their leadership, they lose support.

Thus, they are judged as incumbents, failing in their responsibility to deliver good economic policy, and thereby held accountable at the ballot box. In this way, incumbency-oriented economic voting continues to operate, even in the face of policy-oriented economic voting undercurrents pulling in the opposite direction. Ultimately, the left parties appear not that special when it comes to unemployment issues. When they are in government, a decreasing unemployment rate benefits them, while an increasing unemployment rates costs them. Under this condition, unemployment operates as a valence issue, with incumbency-oriented economic voting trumping policy-oriented economic voting.

## REFERENCES

- Allison, Paul D. 2009. *Fixed Effects Regression Models*. Edited by T. F. Liao, *Quantitative Applications in the Social Sciences*. Los Angeles: Sage.
- Anderson, T.W., and Cheng Hsiao. 1982. Formulation and Estimation of Dynamic Models Using Panel Data. *Journal of Econometrics* 18 (1):47-82.
- Arellano, Manuel, and Stephen Bond. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies* 58 (2):277-297.
- Arellano, Manuel, and Olympia Bover. 1995. Another Look at the Instrumental Variable Estimation of Error-Components Models. *Journal of Econometrics* 68:29-51.
- Arnesen, Sveinung. 2012. Forecasting Norwegian Elections: Out of Work and Out of Office. *International Journal of Forecasting* 28 (4):789-796.
- Bell, Andrew, and Kelvyn Jones. 2012. Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel-Data: University of Bristol.
- Blundell, Richard, and Stephen Bond. 1998. Initial Conditions and Moment Restrictions in Dynamic Panel Data Moments. *Journal of Econometrics* 87 (1):115-143.
- Butler, David, and Donald, Stokes. 1969. *Political Change in Britain*. London: Macmillan.
- Dassonneville, Ruth, and Marc Hooghe. 2012. Election Forecasting under Opaque Conditions: A Model for Francophone Belgium, 1981-2010. *International Journal of Forecasting* 28 (4):777-788.
- Döring, Holger, and Philip Manow. 2012. *Parliament and Government Composition Database (ParlGov): An Infrastructure for Empirical Information on Parties, Elections and*

- Governments in Modern Democracies* 2011 [cited November 2012]. Available from <http://www.parl.gov.org/>.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Duch, Raymond M. 2007. Comparative Studies of the Economy and the Vote. In *Encyclopedia of Comparative Politics*, edited by C. Boix and S. Stokes. Oxford: Oxford University Press.
- Ferrera, Maurizio, 1996. The 'Southern Model' of Welfare in Southern Europe. *Journal of European Social Policy* 6 (1): 17-37.
- Gallagher, Michael. 2012. *Electoral Systems Website* 2012 [cited December 2012]. Available from [http://www.tcd.ie/Political\\_Science/staff/michael\\_gallagher/EISystems/](http://www.tcd.ie/Political_Science/staff/michael_gallagher/EISystems/).
- Goodhart, Charles A.E., and R.J., Bhansali. 1970. Political Economy. *Political Studies* 18 (1): 43-106.
- Hellwig, Timothy T. 2010. Elections and the Economy. In *Comparing Democracies 3: Elections and Voting in Global Perspective*, edited by L. LeDuc, R. G. Niemi and P. Norris. London: Sage.
- Kiewiet, D.Roderick 1983. *Macroeconomics and Micropolitics: The Electoral Effects of Economic Issues*. Chicago: University of Chicago Press.
- Lewis-Beck, Michael S., and Richard Nadeau. 2009. Obama and the Economy in 2008. *PS: Political Science and Politics* 42 (3):479-483.
- Lewis-Beck, Michael S., Richard Nadeau, and Martial Foucault. forthcoming. The Complete Economic Voter: New Evidence from the UK. *British Journal of Political Science*.
- Lewis-Beck, Michael S., and Mary Stegmaier. 2000. Economic Determinants of Electoral Outcomes. *Annual Review of Political Sciences* 3 (1):183-219.
- . 2007. Economic models of voting. In *The Oxford Handbook of Political Behavior*, edited by R. J. Dalton and H.-D. Klingeman. Oxford: Oxford University Press.

- Lewis-Beck, Michael Steven, and Richard Nadeau. 2011. Economic Voting Theory: Testing New Dimensions. *Electoral Studies* 30 (2):288-294.
- Magalhães, Pedro, C., Luís Aguiar-Conraria, and Michael S. Lewis-Beck. 2012. Forecasting Spanish Elections. *International Journal of Forecasting* 28 (4):769-776.
- Norpoth, Helmuth. 1996. The Economy and Elections. In *Comparative Democratic Elections*, edited by L. LeDuc, R. G. Niemi and P. Norris. Newbury Park: Sage Publications.
- Pacek, Alexander C., and Benjamin Radcliff. 1995. Turnout and the Vote for Left-of-Centre Parties: A Cross-National Analysis. *British Journal of Political Science* 25 (1):137-143.
- . 1999. Economics and the Left Party Vote in Scandinavia: A Cross-National Analysis. *Scandinavian Political Studies* 22 (4):295-306.
- Petrocik, J.R. 1996. Issue Ownership in Presidential Elections, with a 1980 Case Study. *American Journal of Political Science* 40 (3):825-850.
- Rattinger, Hans. 1991. Unemployment and Elections in West Germany. In *Economics and Politics: The Calculus of Support*, edited by H. Norpoth, M. S. Lewis-Beck and J. D. Lafay. Ann Arbor: Michigan University Press.
- Roodman, David. 2009. Practitioners' Corner. A Note on the Theme of Too Many Instruments. *Oxford Bulletin of Economics and Statistics* 71 (1):135-158.
- Stegmaier, Mary, and Michael S Lewis-Beck. 2009. Learning the Economic Vote: Hungarian Forecasts, 1998-2010. *Politics & Policy* 37 (4):769-780.
- Stokes, Donald E. 1963. Spatial models of party competition. *American Political Science Review* 57 (2):368-377.
- Voter Turnout*. International Institute for Democracy and Electoral Assistance (IDEA) data 2012. 2012 [cited November 2012 2012]. Available from <http://www.idea.int/vt/>.

*World Economic Outlook Database* 2012. International Monetary Fund (IMF) 2012 [cited  
November 2012 2012]. Available from  
<http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx>.

**TABLE 1. Elections included in the analysis**

<b>Country</b>	<b>Time frame</b>	<b># elections</b>	<b>%</b>
Austria	1986-2008	8	5.37
Belgium	1985-2010	8	5.37
Cyprus	2001-2011	3	2.01
Denmark	1984-2011	10	6.71
Finland	1987-2011	7	4.70
France	1986-2012	7	4.70
Germany	1994-2009	5	3.36
Greece	1985-2012	10	6.71
Iceland	1987-2009	7	4.70
Ireland	1982-2011	8	5.37
Italy	1987-2008	7	4.70
Luxembourg	1989-2009	5	3.36
Malta	1992-2008	5	3.36
The Netherlands	1982-2012	10	6.71
Norway	1985-2009	7	4.70
Portugal	1983-2011	10	6.71
Spain	1986-2011	8	5.37
Sweden	1985-2010	8	5.37
Switzerland	1987-2011	7	4.70
United Kingdom	1987-2010	6	4.03
West Germany	1983-1990	3	2.01
<b>Total</b>		<b>149</b>	<b>100.00</b>

**TABLE 2. Descriptive statistics**

	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Traditional left vote share	149	38.08	10.41	10.20	58.90
Traditional left vote share (E-1)	149	38.90	10.86	10.20	59.00
$\Delta$ Unemployment rate (legislative cycle)	149	0.25	2.39	-6.44	10.00
Left incumbency share	149	0.41	0.40	0.00	1.00
Time between elections	149	3.66	1.02	1.00	5.00
ENEP	149	4.66	1.70	2.02	10.28
Turnout	149	77.45	11.78	42.30	98.20

**TABLE 3. Fixed effects regression of left voting, unemployment and incumbency effects**

	<b>Model I</b> <i>Static FE</i>	<b>Model II</b> <i>Auto-regressive</i> <i>FE</i>	<b>Model III</b> <i>Interaction FE</i>
Constant	58.65*** (10.21)	56.58*** (10.63)	56.16*** (10.43)
Traditional left vote (E-1)		0.06 (0.10)	0.09 (0.09)
$\Delta$ Unemployment rate (legislative cycle)	0.41* (0.19)	0.42* (0.19)	0.97*** (0.25)
ENEP	-2.01** (0.58)	-1.97** (0.58)	-1.53** (0.58)
Turnout	-0.15 (0.11)	-0.15 (0.11)	-0.18 (0.11)
Time between elections	-0.03 (0.50)	-0.10 (0.51)	-0.14 (0.49)
Left incumbency share	1.13 (1.24)	0.76 (1.39)	0.79 (1.33)
Left incumbency share* $\Delta$ Unemployment rate			-1.46** (0.45)
N countries	21	21	21
N elections	149	149	149
R <sup>2</sup> within	0.11	0.11	0.18
R <sup>2</sup> between	0.09	0.18	0.14
R <sup>2</sup> overall	0.10	0.17	0.17
Rho	0.73	0.71	0.73

Estimates of a fixed effects regression in Stata. Significance levels \* p<0.05; \*\* p<0.01; \*\*\* p<0.001 (two-tailed test).



**TABLE 4. Random effects and panel regressions of left voting, unemployment and incumbency effects**

	<b>Model I</b> <i>RE</i>	<b>Model II</b> <i>RE within- between</i>	<b>Model III</b> <i>PCSE</i>
Constant	30.22*** (6.89)	4.41 (5.17)	15.06** (5.46)
Traditional left vote (E-1)	0.43*** (0.08)	0.09 (0.09)	0.77*** (0.07)
$\Delta$ Unemployment rate (legislative cycle)	0.93*** (0.25)	0.97*** (0.23)	0.90*** (0.24)
ENEP	-1.29** (0.45)	-1.53** (0.53)	-0.80** (0.26)
Turnout	-0.01 (0.07)	-0.18 (0.10)	0.01 (0.05)
Time between elections	-0.64 (0.48)	-0.14 (0.45)	-0.93 (0.51)
Left incumbency share	-0.14 (1.33)	0.79 (1.23)	-1.19 (1.52)
Left incumbency share* $\Delta$ Unemployment rate	-1.37** (0.45)	-1.46*** (0.41)	-1.31** (0.42)
Traditional left vote (E-1) mean		0.93*** (0.07)	
$\Delta$ Unemployment rate mean		-0.32 (0.93)	
ENEP mean		-0.22 (0.30)	
Turnout mean		-0.01 (0.04)	
Time between elections mean		-0.24 (0.83)	
Left incumbency share mean		-0.17 (2.93)	
Left incumbency share* $\Delta$ Unemployment rate mean		-0.18 (0.95)	
N countries	21	21	21
N elections	149	149	149
R <sup>2</sup>			0.71
$\sigma^2$ level 1	26.82 (4.71)	21.10 (2.44)	
$\sigma^2$ level 2	16.40 (17.15)	0.00 (0.00)	

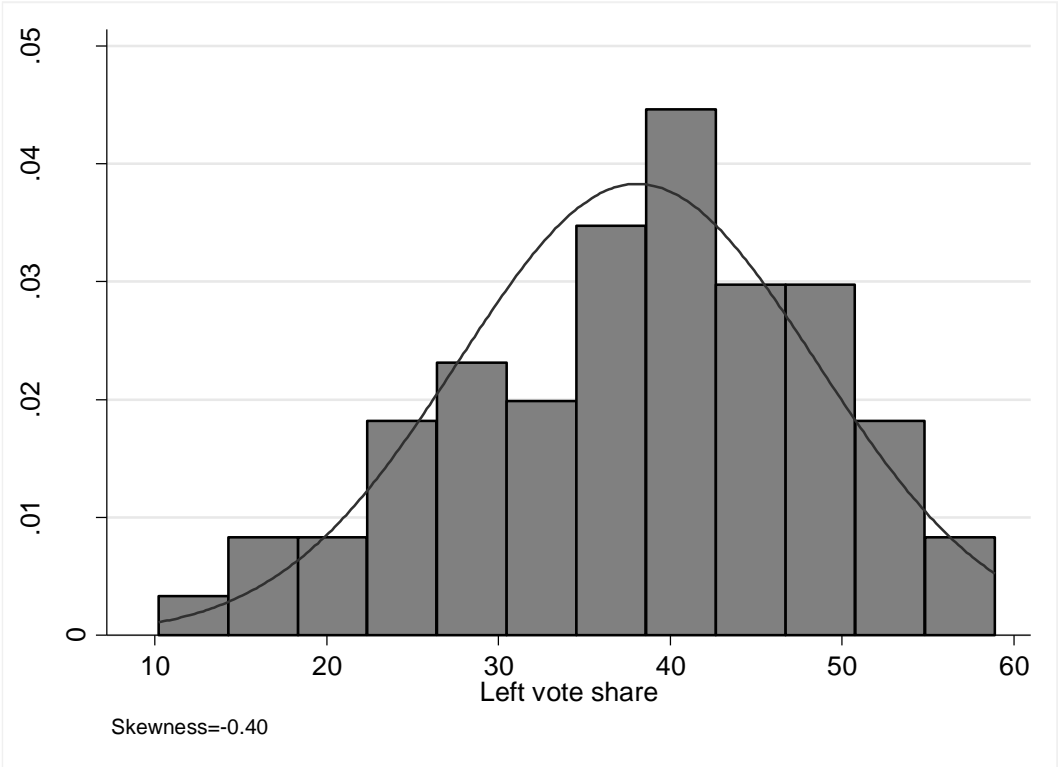
Significance levels \* p<0.05; \*\* p<0.01; \*\*\* p<0.001 (two-tailed test). First and second model estimated through xtmixed and third model through xtpscse in Stata. First order autocorrelation specified for PCSE model.

**TABLE 5. Differences Models as Robustness Checks**

	<b>Model I</b> <i>First Differences</i> <i>FE</i> DV: $\Delta$ Left vote	<b>Model II</b> <i>Arellano-Bond</i> <i>Differences</i> <i>GMM</i>	<b>Model III</b> <i>System GMM</i>
Constant	7.91* (3.69)	85.95** (29.55)	39.19** (13.64)
Traditional left vote (E-1)	-0.32 (0.26)	0.07 (0.18)	0.40** (0.12)
Traditional left vote (E-2)		-0.04 (0.10)	0.15* (0.08)
$\Delta$ Unemployment rate (legislative cycle)	1.04** (0.26)	1.18*** (0.25)	1.34*** (0.27)
ENEP	-0.32 (0.26)	-1.82 (1.00)	-1.79 (0.94)
ENEP (E-1)		-0.23 (0.88)	0.02 (0.92)
ENEP (E-2)		-0.89 (0.90)	-1.04 (0.80)
Turnout	-0.04 (0.03)	-0.29 (0.18)	-0.20 (0.15)
Turnout (E-1)		0.12 (0.18)	0.36* (0.17)
Turnout (E-2)		-0.17 (0.17)	-0.11 (0.16)
Time between elections	-0.75* (0.31)	-0.32 (0.64)	-0.64 (0.61)
Left incumbency share	-3.99** (1.08)	-1.81 (1.65)	-2.21 (1.55)
Left incumbency share* $\Delta$ Unemployment rate	-1.60* (0.35)	-2.10*** (0.45)	-2.14*** (0.49)
Election dummies		Included	Included
N countries	21	20	21
N elections	149	95	116
R <sup>2</sup> within			
R <sup>2</sup> between			
R <sup>2</sup> overall	0.18		
Rho			
Instruments		49	58
Sargan test (p-value)		0.098	0.262
Arellano Bond test AR2 (p-value)		0.061	0.045

Significance levels \* p<0.05; \*\* p<0.01; \*\*\* p<0.001 (two-tailed test). Model I is an OLS run in stata with cluster robust standard errors (for 21 country-clusters). Second model estimated through xtabond and third model through xtdepdys in Stata.

**FIGURE 1. Histogram of dependent variable: Left vote share**



**FIGURE 2 (a, b,c). Marginal effect of unemployment rate change on left vote share when governing majority is 0%, 50% and 100% left respectively**

