Changing Political Cleavages in Advanced Democracies: Evidence from the European Parliament

Simon Hix
London School of Economics and Political Science

Abdul Noury
New York University Abu Dhabi

Gerard Roland
University of California, Berkeley, CEPR and NBER

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Abstract

We investigate whether the dimensionality of political conflict in the European Parliament has changed since the 'great recession' (2007-13) and the migration crisis (2015-16) in Europe. Based on standard scaling methods, and the roll call votes from the sixth (2004-09), seventh (2009-14), and eighth (2014-19) European Parliaments, we find that, whereas two dimensions still explain voting behavior in the chamber, the dimensionality of the policy space has changed. Before 2014, the first dimension was clearly the classic left-right dimension and the second dimension was the pro/anti-EU dimension. After 2014, in contrast, the pro/anti-EU dimension has become the main dimension of voting while the left-right dimension has been relegated to the second dimension. This is an important piece of evidence adding to a growing literature suggesting divisions about globalization are replacing the traditional left-right dimension as the main focus of politics in advanced democracies.

Keywords: Populism, globalization, left-right, European Union, European Paliament, dimensions of politics

1 Introduction

The main political cleavage in advanced democracies has traditionally been the (economic) left-right dimension of politics. Whilst parties on the left have advocated more redistribution from the rich to the poor and more regulation of markets, parties on the right have favored lower taxes, freer markets and a smaller public sector. From a theoretical point of view, this main dimension of political conflict has been represented by the standard median voter model (Black 1948; Meltzer and Richard 1981; Roberts 1977), which Persson and Tabellini (2002) also labeled "general interest politics". Empirically, a large body of evidence has documented the prevalence of the left-right conflict in democratic politics since the work of scholars like Bartolini and Mair (2007) on European party systems or Poole and Rosenthal (2000) on voting in the U.S. Congress.

In many advanced democracies there has been a recomposition of the political landscape in the past decade, with the main dimension of politics shifting to a split between anti-globalization forces, mostly on the populist right and radical left, and pro-globalization forces, in the liberal center or amongst traditional mainstream parties. Kriesi and his collaborators had already identified these trends emerging in the early 2000s, with voters and parties in many countries starting to mobilize around cultural/social divisions, and new battles about immigration, sexuality, gender equality, environmental protection and globalization replacing the traditional economic arguments about redistribution, taxation or market regulation (Kriesi et al. 2006, 2008). The great recession of 2007-13 and the European migration crisis of 2015-16 magnified this new divide. In the aftermath of these crises, the new conflict has been

decisive in electoral contests in many established democracies: such as the vote in the UK to leave the EU in 2016, the election of Trump as president of the United States in 2016, the battle between a radical right and a green candidate for the Austrian presidency in 2016, the success of Le Pen and Mélenchon in the 2017 presidential election in France, the rise of AfD and Die Linke in the Germany Bundestag election in 2017, the overwhelming victory of Fidesz on a strongly nationalist platform in Hungary in 2018, and the success of Lega and the Five Star Movement in the Italian parliamentary election in 2018. Anti-globalization forces are particularly potent in Europe, as their opposition to liberal globalization means an opposition to the EU, the Euro, and the general process of European integration. Hooghe and Marks (2018), for example, argue that immigration, EU integration and trade have led to the formation of a new possibly durable cleavage among European political parties. Do these developments mean that the left-right cleavage that has dominated politics in advanced democracies for almost 100 years is being replaced by a new pro-/anti-globalization cleavage?

In this paper, we document that this is exactly what has been happening in the European Parliament. A large body of existing research, based on analyzing recorded (roll call) votes and the positions of parties in the chamber, had shown that the left-right cleavage was the main dimension of political conflict in the EU's main representative institutions (Attina 1990; Kreppel 2002a; Raunio 1997; McElroy and Benoit 2007; Hix and Noury 2007; Hix et al. 2007; Thomassen et al. 2004). We show in this paper that the structure of voting in the European Parliament has started to change substantially, especially since the election of the eighth European

Parliament in 2014. Blumenau and Lauderdale (2018) found evidence that on votes in policy areas related to the 2008 financial crisis, majority coalitions in the European Parliament formed on a pro/anti EU integration dimension rather than a left-right dimension, but not in other policy areas. Our analysis confirms this, but we show that this 'rotation of politics' is more general and persistent, especially since 2014. In contrast to previous decades, the main dimension of politics in the European Parliament has been shifting in a clear way from left-right to pro/anti-EU, where the pro/anti-EU conflict mirrors the pro/anti-globalization conflict we increasingly see in national elections. This dimension had always been a secondary and less important dimension in votes in the European Parliament, but the evidence we present in this paper suggests that this is becoming, indeed has to a large extent become, the dominant conflict in the European Parliament. While, on the positive side, this shows that politics in the European Parliament has responded to the changing structure of politics at the national level in Europe. On the negative side, pro/anti-globalization battles are more difficult to resolve in the European Parliament than the traditional left-right dimension – where coalitions could be built on the center-left or center-right or even across the left-right divide – as the new cleavage challenges the very existence of the European integration project.

We proceed as follows. We first document, using standard scaling techniques this shift in the European Parliament, that pro/anti EU has become the dominant dimension on a large number of issues. Using MEP surveys to identity MEPs' ideological preferences, we show that this shift is not just a matter of interpretation of dimensions from scaling methods, but can be established rigorously through re-

gression analysis. We also show that this change in the main dimension of voting is not only explained by political positions of national parties within the European Parliament, but also by changes in the attitudes and positions of voters, using data from the European Social Survey (ESS). The change in the dominant cleavage in the European Parliament thus reflects changes among voters, national parties and MEPs.

Many papers can be related to the issue of these recent changes in cleavages. Piketty (2018) gives evidence on France, the UK and the US suggesting that left-wing parties have stopped defending the interests of the poor, which is, according to him, why the latter tend increasingly to vote for xenophobic and populist parties, leading class-based politics to be replaced by identity-based politics. Guiso et al. (2017) have recently analyzed the demand and supply of populist politics, where the latter is defined as short-term protection policies without regard for their long-term costs. Their research shows that economic insecurity in the aftermath of the 2008 crisis has led to a loss of trust in traditional left and right parties. Election outcomes underestimate this effect as those pro-populist disappointed voters have significantly lower turnout rates. Populist parties have emerged to cater to this drop of trust and compete with mainstream parties who have started to likewise defend populist policies, instead of vigorously opposing them. Dustmann et al. (2017) show that unemployment shocks are correlated with trust deficit and vote for non-mainstream parties in the European Parliament elections. Algan et al. (2017) found for EU countries a strong link between high increases in unemployment following the Great Recession and votes for populist parties but also a decline in trust in trust

in national and European political institutions. Cantoni et al. (2017) found that since its transformation into a populist extreme-right party, the AfD has higher vote shares in districts that voted more for Hitler's party in 1933. The spectacular rise in vote shares of the AfD can however not be explained by changes in values and beliefs among voters. These studies look at the reasons for the emergence of populist anti-globalization parties, but do not analyze how the rise of populism affects the dynamics of voting and coalition formation in democratically elected parliaments.

2 Measuring Dimensions of Politics in the European Parliament

We use four datasets in our analysis. First, to scale the ideal points of legislators and to analyze the dimensionality of policy space in the European Parliament, we use the roll call votes in the sixth (2004-09), seventh (2009-14), and eighth (2014-19) sessions of the directly-elected European Parliament. In each parliament we have about 6,000 voting decisions by about 800 MEPs.[1] Second, we use the European Social Survey (ESS), which is a biennial cross-sectional survey of about 2,000 residents in most EU member states, as well as several non-EU countries (which we drop from the analysis). Out of the eight rounds of ESS, we focus on the periods covered by our analysis: the third (2006), the seventh (2012) and the eighth round (2016). The ESS includes questions on individual beliefs about social, political, and

[1]Because all votes in the European Parliament are not roll calls, there may be a selection effect. See Hix et al. (2018) for a discussion of selection bias in roll call votes.

economic issues. Third, we use the EPRG survey of MEPs collected by Whitaker et al. (2017). We use the series for the years 2000, 2006, 2010, and 2015. These surveys allow researchers to examine how MEP attitudes have changed as a function of circumstances, such as an economic crisis. Finally, we use the Chapel Hill Expert Survey, which includes national parties' positions on a range of issues, such as left-right, European integration, immigration, environment, and so on (Polk et al. 2017).

To start with, Table 1 shows the party-political composition of the European Parliament in the sessions we study. As the table shows, there has been variation in the size and composition of political groups.

[TABLE 1 ABOUT HERE]

The two main families in the European Parliament have been the Christian Democrats/conservatives (EPP) and the Socialists (S&D), but their seat shares have declined over time. The Liberals (ALDE) have a smaller seat share but have often been pivotal in votes and coalitions due to their centrist position. The Radical Left (GUE/NGL) includes communist or former communist parties and extreme left parties. The Greens (G/EFA) are pro-environment parties allied with some regionalist parties. Outside these five groups, other groups have been unstable. They gather mostly nationalist and/or anti-European parties to the right of the EPP. Since the seventh session of the European Parliament (EP7), the British Conservatives have broken away from the EPP to form a separate party group called European Conservatives and Reformists (ECR).

Existing research on the European Parliament shows that national parties are

the primary principals of the Members of the European Parliament (MEPs) (e.g. Hix and Lord 1997; Raunio 1997; Kreppel and Tsebelis 1999; Hix 2002; Kreppel 2002b). National parties control the selection of candidates in European Parliament elections. European elections are fought mainly as separate national, rather than European-wide, electoral contests. Once inside the European Parliament, national parties decide which European political group 'their' MEPs will belong to, which key committee positions and parliamentary offices their MEPs will seek, and which of their MEPs will get these positions.

How do the political groups vote and form coalitions on votes in the chamber, and along which dimensions do they vote? Hix et al. (2006, 2007), used Poole and Rosenthal's W-NOMINATE method to scale roll call votes along the most relevant dimensions. They consistently found that the first and main dimension could be explained by the standard left-right cleavage, whilst a second dimension could be explained by support or opposition to the European integration process. For EP7 (2009-14), W-NOMINATE failed to produce a smooth distribution of MEPs, and failed to fill the policy space, leaving a large gap between MEPs in the center and a few extremists on either side of the first dimension. Rosenthal and Voeten (2004) document that in the case of the French Fourth Republic, characterized by strong party discipline and near-perfect spatial voting, W-NOMINATE failed to produce reasonable results. As a result, they used Keith Poole's non-parametric Optimal Classification (OC) to scale legislators' ideal points. Following this approach, we apply three alternative scaling methods: (1) Keith Poole's OC method (Poole 2000); (2) alpha-NOMINATE, which is a Bayesian alternative to W-NOMINATE (Carroll

et al. 2013); and (3) a multi-dimensional scaling (MDS) algorithm where ideal points are estimated based on dyadic differences in voting behavior between any two MEPs (Torgerson 1952; Diaconis et al. 2008). A brief description of MDS is reported in the Appendix.

We show the results using MDS, but our main findings are the same when applying OC and alpha-NOMINATE, as we show later on. Although these methods use different algorithms and different utility functions to compute the ideal points, what is common in all these scaling methods is that they use the same starting values, and so estimate similar ideal points. The first dimension in all these methods is the one that best-predicts the roll call votes (yes or no) and minimizes classification errors, whilst the second one is the next best orthogonal dimension for improving the predictions, and so on.

[TABLE 2 ABOUT HERE]

Table 2 reports the goodness-of-fit statistics as produced by MDS. A two-dimensional model correctly classifies just over 89% percent of MEPs' decisions in EP6. Correct classification scores increase in EP7 and EP8 to 92.6% and 93.4%, respectively. Across different parliaments, one can observe that the second dimension becomes more important in the eighth parliament (EP8). This can be seen by looking at the aggregate proportional reduction in classification error (APRE), which is simply:
APRE=1-(Total Classification Errors)/(Total Votes on Minority Side)

In fact, in EP8 the APRE2-APRE1 difference is about 30 percentage points, which is larger than those in EP6 (18%) and EP7 (24%). A large difference in APREs indicates that the votes along the second dimension are important. The

goodness-of-fit statistics by OC and alpha-NOMINATE show a similar pattern.

Figure 1 shows the ideal points of MEPs in EP6, EP7 and EP8 estimated by MDS. The first dimension (on the horizontal axis), in EP6 and EP7 clearly relates to the left-right dimension, as documented in Hix et al. (2006, 2007). On the left-hand side of the spatial map we have left-wing parties such as radical left (M), greens (V), and socialists (S). In the center, we have the centrist liberals (L). On the right, we have the Christian Democrats and conservatives (P) as well as other right-wing parties (G and C). The second dimension (on the vertical axis), in EP6 and EP7 clearly relates to attitudes towards European integration. Pro-EU parties are located on the top part of the map (essentially the socialists, liberals and EPP), while anti-EU parties are located on the bottom of the space (all the other parties). This situation represents the standard structure of European politics since 1979. The eighth parliament, however, shows a quite different configuration. It is as if the map has been rotated clockwise. The first dimension cannot be clearly interpreted. One could argue that it is a combination of the standard two dimensions, suggesting that the pro/anti-EU cleavage is gradually becoming the main dimension of conflict in the European Parliament.

[FIGURE 1 ABOUT HERE]

Figure 1 is based on all roll call votes in EP6, EP7 and EP8. We performed a similar exercise for each sub-set of votes by policy area. Instead of showing 48 (16 per parliament) versions of Figure 1, Table 3 shows in a succinct way how the first dimension can be interpreted by policy area. Regressions of ideal points as a function of Left-Right and EU variables are reported in Table A5 in the appendix.

We classified the policy area of a vote following the committee that proposed the vote. If, for instance, a vote was proposed by the Economic and Monetary Affairs committee, we classify that vote as related to economic and monetary issues.

[TABLE 3 ABOUT HERE]

As the results in Table 3 show, for some policy issues the first dimension of voting was left-right in EP6 and remained so in EP7 and EP8. Those issues include Employment, Environment, Gender, Internal Market and Consumer Protection, and Industry, Research and Energy. For the other policy areas, though, we observe some notable changes. Votes on Budget, Economic and Monetary Affairs, Foreign Affairs, International Trade issues were related to the left-right cleavage but became more strongly associated to a pro/anti-EU dimension. Some of these changes started to happen in EP7, but were more clearly evident in EP8.

3 Explaining the Dimensions of European politics

So far, our evidence is based on an interpretation of the change in cleavages in the European Parliament using what we generally know about the relative ideological positions of the European political groups to interpret the substantive meaning of the 'revealed' dimensions that emerge from applying a scaling method to votes. We can do better than this simple post-hoc interpretation. To do this we use linear regression to explain the revealed location of each MEP (in roll call votes) as a function of exogenous national party positions and other factors. Our dependent variable in this analysis is the average position of each MEP on each revealed dimension based on

our two dimensional scaling estimates. For individual MEP-based regression models we have respectively 934, 848, and 822 observations for EP6, EP7, and EP8, and when pooling across the three parliaments, and after discarding missing data, we have 2,349 observations. As a robustness check we use as the dependent variable the average position of each national party; in other words, we treat each national party's delegation of MEPs in each parliament as a separate observation. This is reasonable because of the high level of voting cohesion of each national party delegation and because our main independent variables are measured at the level of national parties. There were 151 national parties in the sixth European parliament (2004-2009), 137 in the seventh parliament, and 166 in the eighth. With this dependent variable, we have 454 observations in the pooled analysis, although we lose a number of observations as a result of missing data on national party policy positions.

3.1 Independent Variables and Models

We have three types of independent variables. First, to test the hypothesis that the policy space in the European Parliament combines the two underlying policy dimensions we observed in earlier work, we use exogenous measures of national party positions on the left-right dimension and on the pro/anti-EU dimension. These measures are fully exogenous, and allow for a more objective and statistically founded interpretation of the policy dimensions rather than a purely subjective interpretation. We use the Chapel Hill Experts Survey (CHES) data for the left-right and the pro/anti-EU positions of national parties. Second, to capture the effect of government-opposition dynamics at the national and European levels, we use a

dummy variable indicating whether a national party was in government during the relevant parliament (coded 1 if the national party was in government for a majority of the period and 0 otherwise). Table A1 in the Appendix shows summary statistics for this variable. Third, we include a set of dummy variables to capture national (regional) interests. More specifically, we include a dummy variable for MEPs from the United Kingdom, as well as dummy variables for Southern European, Eastern European, and Northern European member states. Descriptive statistics are displayed in Table A2 in the Appendix.

To understand the dimensions of the policy space in the European Parliament, we estimate the following linear regression model:

$$y_{ikt} = \alpha + \beta_1 LR_{kt} + \beta_2 EU_{kt} + X'_{ikt}\gamma + \epsilon_{ikt}$$

Where y_{ikt} is our dependent variable, the estimated ideal point in a particular dimension of legislator i, who is a member of national party k, at time t (during EP6, EP7, EP8). We consider ideal points on both the first and the second dimensions. LR_{kt}, and EU_{kt} are the left-right and pro/anti-EU policy positions of MEPs' national parties, respectively. For the left-right dimension, we use three measures of the national party positions of the national parties: the 'general' left-right position; the 'economic' left-right position; and the 'social' left-right or GALTAN (green/alternative/libertarian-traditional/authoritarian/nationalism) position. For the EU variable we use the national party's position on European Integration. The LR and EU variables are based on several rounds of the Chapel Hill Expert Survey. We also include a set of control variables X_{ikt}, such as European political group dummies, nationality or regional dummies, and whether the national party of the

MEP was in government. α, β_1, β_2, and γ are the parameters of the model to be estimated, and ϵ_{ikt} is the error term.

3.2 Results: the Changing Dimensions

Using OLS with clustered standard errors (around national parties), which allows for intra-national party correlation, we first estimate models separately for each parliament and each dimension. Table 4a provides the estimation results for the first dimension. For EP6 and EP7, the left-right measures, whether general or economic, are highly significant, while the EU stance is not significant. For EP8, we observe a clear reversal. While the EU position of a national party is significant, albeit at the 10 percent level, the general left-right dimension is not significant, although economic left-right is still significant at the 5 percent level.

[TABLES 4a AND 4b ABOUT HERE]

This reversal can also be seen in results for the second dimension, in Table 4b. First, in EP6 the left-right variable is not significant but the EU variable is. In EP7, both the left-right and the EU variables are significant. Finally, in EP8, the left-right variable is significant but the EU variable is not. The results in Tables 4a and 4b thus go further than the interpretative evidence shown in Figure 1. The left-right dimension, which was clearly the first dimension of politics in EP6 and EP7, ceased to be the first dimension in EP8. National party positions on the issue of EU integration correlate with the revealed positions of MEPs on the first dimension, both between and within the European Parliament political groups. Moreover, while

the EU dimension was clearly the second dimension until EP7, in EP8 the left-right position became the second dimension.

As a robustness test, we replicate these analyses using the average position of the national party on a dimension rather than the individual ideal points the unit of observation. The results are show in Tables A3a and A3b (for the first dimension) and Tables A4a and A4b (for the second dimension) in the Appendix. We thus regress the average national party ideal points as a function of the left-right and pro/anti-EU dimensions as well as the set of control variables.[2] The results on the first dimension are similar to those reported in Table 4a. Furthermore, when we use GALTAN as our left-right measure, the results are not altered. When adding the political group dummies, with ALDE being the reference group, these variables all become significant. However, GALTAN in EP6 and the economic left-right, GALTAN and EU in EP8 become insignificant, indicating that there was little variation within the political groups on the first dimension. For the second dimension, Tables A4a and A4b report somewhat similar results to Table A3b.

3.3 Investigation of Annual Changes: When Did the Break Come?

So, we have observed that the pattern of roll call voting in EP8 (after 2014) was systematically different from the patterns in the previous two parliaments: with the pro/anti-EU dimension replacing the left-right as the main dimension of voting.

[2]We estimate the following model: $\bar{y}_{kt} = \alpha + \beta_1 \overline{LR}_{kt} + \beta_2 \overline{EU}_{kt} + \overline{X}'_{kt}\gamma + \bar{\epsilon}_{kt}$ where the dependent variable is the mean ideal point of a given national party.

However, what we do not know from this analysis is whether the break came in 2014, with the election of a new parliament, or whether the break came at some point in EP7 or half-way through EP8.

[FIGURE 4 ABOUT HERE]

To investigate this, we break down the voting data from each parliament into five equal samples, roughly corresponding to a particular calendar year, and scaled the votes in each period using MDS. We then ran simple regressions of the first dimension as a function of economic left-right as well as pro/anti-EU positions of national parties. Figure 4 plots the absolute values of the standardized regression coefficients over time. The figure clearly shows that the change was not gradual but started at the beginning of EP8. It also shows that in the fourth year of EP8 we observe a return to 'normality', where the first dimension is essentially explained by the left-right variable. But, this did not last long, as in the final period of EP, the pro/anti-EU dimension again become more important the left-right variable.

These findings suggest that the shift in voting patterns in the European Parliament were not directly driven by the financial crisis, which occurred during EP7, or the migration crisis, which occurred half-way through EP8. Instead, the shift in voting correlates with the increased representation of populist anti-European parties, following the success of these parties in the 2014 European Parliament elections. This is not to say, though, that the two crises had no indirect effect on voting in the European Parliament, first, via their effect on the election of more populist MEPs, and, second, via the changing policy issues on the EU agenda, which increasingly split national parties, EP groups, and individual MEPs along pro/anti-EU lines.

3.4 Robustness Checks with Different Scaling Techniques

One may wonder to what extent our results are driven by the particular scaling technique used. Recall that in addition to MDS, we also used OC and alpha-NOMINATE to scale MEPs' ideal points. Maps of MEPs ideal points show similar configurations to what we have reported for MDS.[3] The results explaining the determinants of the first and second dimensions over time using OC and alpha-NOMINATE are shown in Tables 5 and 6. Note that we use the same set of controls as in Tables 4a and 4b. Both show results similar to those using MDS. Table 5, using OC, shows that, while the left-right position remains significant through EP6 to EP8, the explanatory power of this dimension declines over time. Moreover, EU positions became significant from EP7 onwards. Similarly, left-right positions became a significant determinant of the second dimension, while the EU dimension remained significant. The results in Table 6, using alpha-NOMINATE are similar. Here, on dimension 1, EU positions became significant only in EP8. Overall, we see that all three scaling techniques (MDS, OC and alpha-NOMINATE) show that the EU dimension gradually became a significant determinant of the first dimension while the left-right dimension gradually became a significant determinant of the second dimension.

[TABLES 5 AND 6 ABOUT HERE]

[3]The figures of MEPs ideal points produced by OC and alpha-NOMINATE are available upon request from the authors.

4 MEPs' and Voters' Ideologies as Predictors of MEP Voting

The question is raised whether the observed changes in the main dimensions of the voting patterns in the European Parliament are mainly a result of political recomposition inside European political parties or whether they also reflect changes in voter ideology. For example, Cantoni et al. (2017) found that the emergence of the extreme-right party AfD cannot be explained by changes in voter ideology, but reflects a political recomposition among Germany's political parties. One approach to answer this question is to explain MEPs' ideal points by their own ideological variables, as above, and to compare with regressions explaining MEPs ideal points by variables measuring voter ideology. It is possible to do this kind of regression because the ESS survey contains information about which party voters chose in the European Parliament election. For MEP ideology, we use the Whitaker et al. (2016) EPRG survey measures on the general left-right dimension and on attitudes towards EU integration. For voter ideology, we use measures from the European Social Survey. For the left-right measure we use voter self-placement on the left-right scale (variable lrscale) and for attitudes towards the EU we use voter trust towards the European Parliament (variable trstep). We use the same time spans for both MEP and voter ideology.

Figure 2 illustrates the results, separately for the first and second dimensions. The left-hand panels show standardized beta coefficients for the effects of MEPs' own ideology on their revealed ideal points on a dimension, whereas the right-hand

panels do the same using ESS measures of voters' ideology. Consistent with the results above, on the first dimension we observe similar patterns for both MEP and voter ideology. The role of the left-right positions decreases between EP6 and EP8 whereas the role of pro/anti-EU positions becomes more important over time. On the second dimension the effects of the left-right variable are similar: not significant in EP6 and EP7, but becoming significant in EP8. There are some differences in the role of the pro/anti-EU variable, but it is significant both for MEPs' personal ideologies and for voters' ideologies.

[FIGURE 2 ABOUT HERE]

Overall, the results in Figure 2 show that the changes in the first and second dimensions of politics in the European Parliament can be explained both by changes in MEP positions and by changes in voter ideology and attitudes. These results are different from Cantoni et al. (2017), as they suggest that the changing dimensions in the European Parliament reflect genuine changes amongst the European electorate.

Table A6 in the appendix reports the results of regressions explaining MEPs' ideal points by voters' left-right and pro/anti-EU positions. In odd-numbered columns no political group fixed effects are included, whereas they are included in the even-numbered columns. The left-right dimension is significant only when no political group fixed effects are included, with EP8 being an exception. In this parliament, when political group fixed effects are included the left-right scale is still significant, though it becomes negative. This, once again, indicates that EP8 is different from EP6 and EP7. In EP8, within a political group a more rightwing national party is located on the left side (anti-globalization) of the first dimension, while a more

leftwing national party is located on the right side (pro-globalization) of the first dimension.

[TABLE 7 ABOUT HERE]

But, have MEPs' and voters' views changed independently of the changes we observe in voting patterns inside the European Parliament? To investigate this we look at the evolution of MEP and voter attitudes over time on a particular set of issues. We first use the EPRG survey of MEPs to examine how their attitude on particular issues has changed over time. Table 7 looks at the overall determinants of MEPs' views on selected EU policies during the period covering EP6 to EP8 (2004-2017): Environment, Migration, World Trade Organization, Free-Trade, and Inequality. Overall, we find that their left-right attitude is the most important explanatory variable followed by the pro-/anti-EU variable. Right-wing MEPs are against environmental regulations, are anti-migration, in favor of the WTO and Free Trade, and against "greater effort to reduce inequality of income".

[FIGURE 3 ABOUT HERE]

Figure 3 shows the results of regressions by period on four of the selected topics: WTO, Free Trade, Migration, and Environment. The results here indicate that after the 2008 crisis, for WTO and Free Trade, the left-right variable became less important and insignificant, while the pro-/anti-EU variable increased in magnitude even though it remained insignificant. In contrast, on Migration and Environment left-right was and remains the most important predictor of MEPs attitude. Hix and Noury (2007) had shown that attitudes towards migration are strongly along the left-right dimension, this seems not to have changed. We thus see that the evolution

of MEP positions from left-right to pro/anti-EU is not across the board, but depends on the policy issue.

[TABLE 8 ABOUT HERE]

Using the ESS, we also analyze the importance of the left-right scale and trust towards the EU on voters' opinions on a range of different questions. Table 8 examines the determinants of voters' preferences on four issues: Migration, Same Sex Marriage, Satisfaction with the Economy, and Inequality Reduction. The results show that left-right preferences explain inequality and same sex marriage, but trust in European parliament is the main predictor of migration and economic satisfaction. While we generally observe some similarities of preferences between MEPs and voters, we also note a difference between MEPs and voters particularly on migration issues. Migration for MEPs is primarily a left-right issue, while for voters it is increasingly correlated with Trust to the European Parliament, though left-right scale remains significant.

5 Conclusion

The 'populist shock' in advanced western democracies suggests that the traditional left-right political dimension may be in the process of being replaced by a pro/anti-globalization dimension. If so, this would be a political earthquake for democracies, with unknown consequences. In this paper, we carefully document the evolution of the political space inside the main representative institution at the European level: the European Parliament. Our previous research found that the

left-right dimension was clearly the most important dimension of politics inside the European Parliament, in line with research on legislatures in the United States and across the democratic world (e.g. Hix and Noury 2016). In this paper, we instead find that, in the aftermath of the 2008 financial crisis and the 2015 migration crisis, the pro/anti-EU dimension, traditionally the second, accessory, dimension in the European Parliament, is gradually becoming the most important dimension of politics in this institution. Our analysis is substantiated by rigorous regression analysis showing that the first dimension of politics, as estimated by the standard scaling methods, has been shifting from the left-right to pro/anti-EU. The latter dimension is closely related to the pro/anti-globalization cleavage that is emerging in national elections in advanced democracies since the European Union is seen as one of the major successes of globalization. Moreover, this shift reflects not only a shift in national party positions, but also a shift inside the European electorate, as we document.

These results convey both good news and bad news. The good news is that politics in the European Parliament adjusts to voter preferences. In that sense, the European Parliament functions like a normal democratic legislative assembly, and is not insulated from shifts in voter preferences. The bad news, though, is that the observed shift in the European Parliament could very well herald the end of the European Union, as anti-European forces gather strength and voice inside the European Parliament. This signals great uncertainty for the future, and the urgent need to understand better the political disturbances that echo the consequences of the 2008 crises and of the related economic policies of austerity that were implemented in the European Union as a response to that crisis.

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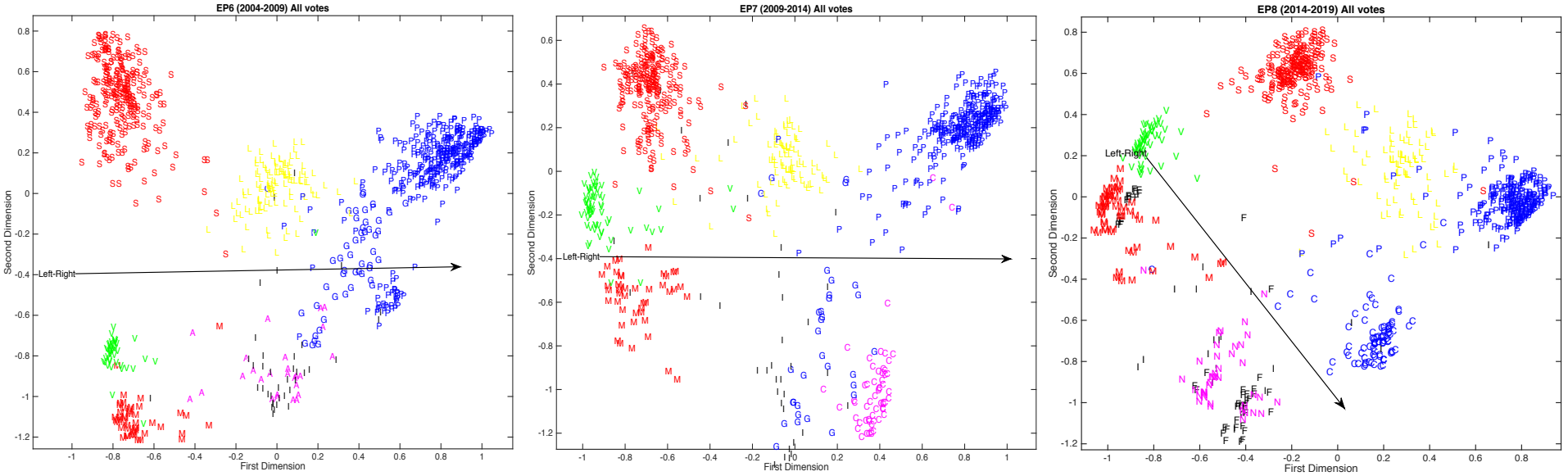
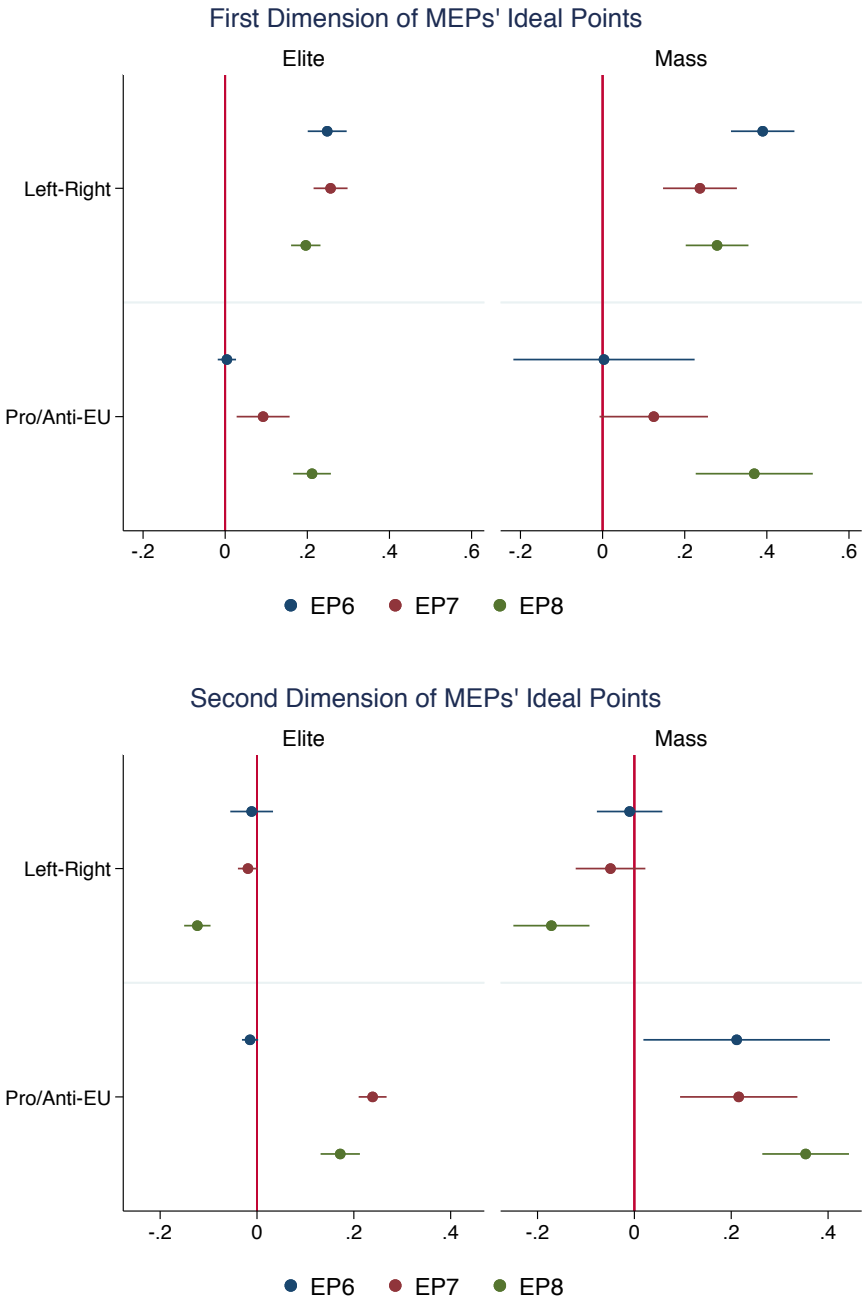
Figure 1. MEPs' Ideal Points in EP6, EP7 and EP8



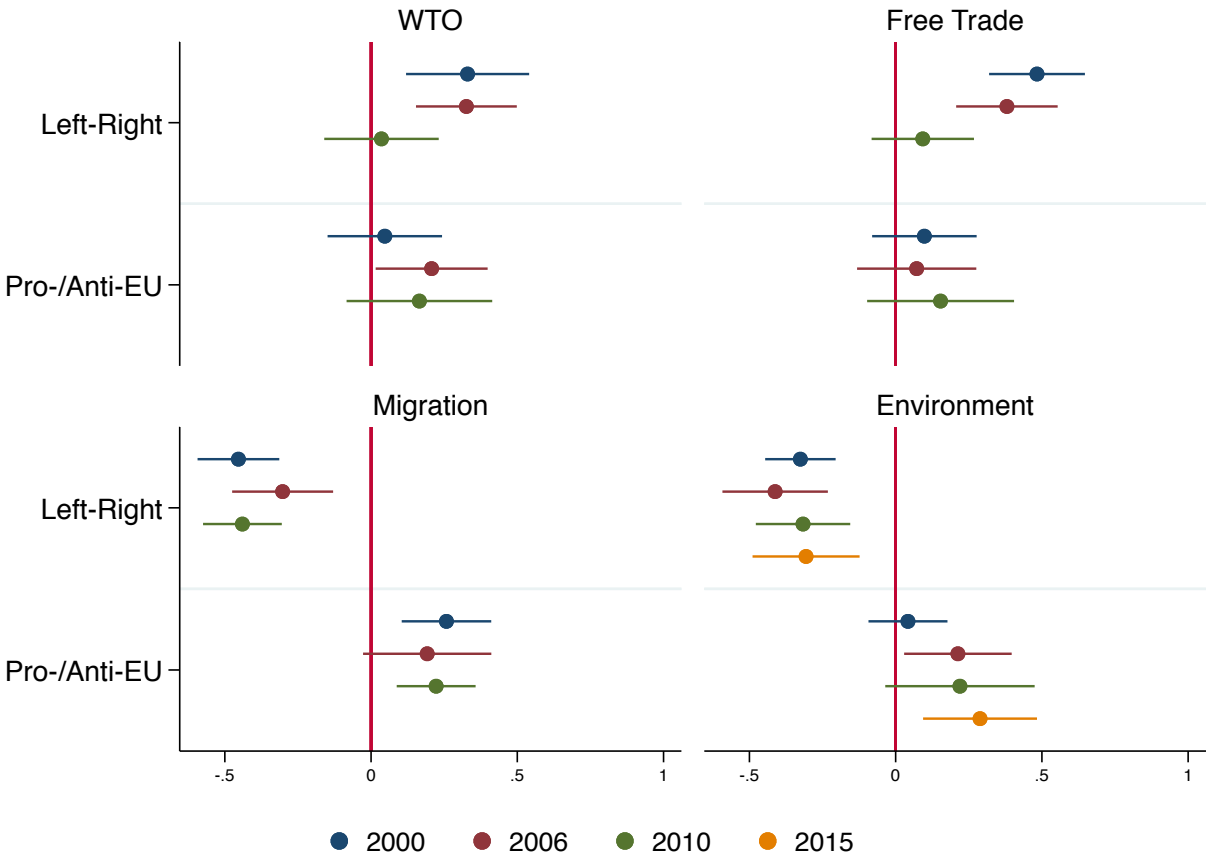
Key:		
	C	British Conservatives and allies (ECR)
	F	Extreme Right (ENF)
	G	National Conservatives (UEN)
	I	Non-attached members (NA)
	L	Liberals (ALDE)
	M	Radical Left (GUE/NGL)
	N	Anti-Europeans (EFD, EFDD)
	P	Christian Democrats and Conservatives (EPP)
	S	Socialists (S&D)
	V	Greens (G/EFA)

Figure 2. Effect of MEPs' and Voters' Ideology on MEPs' Ideal Points



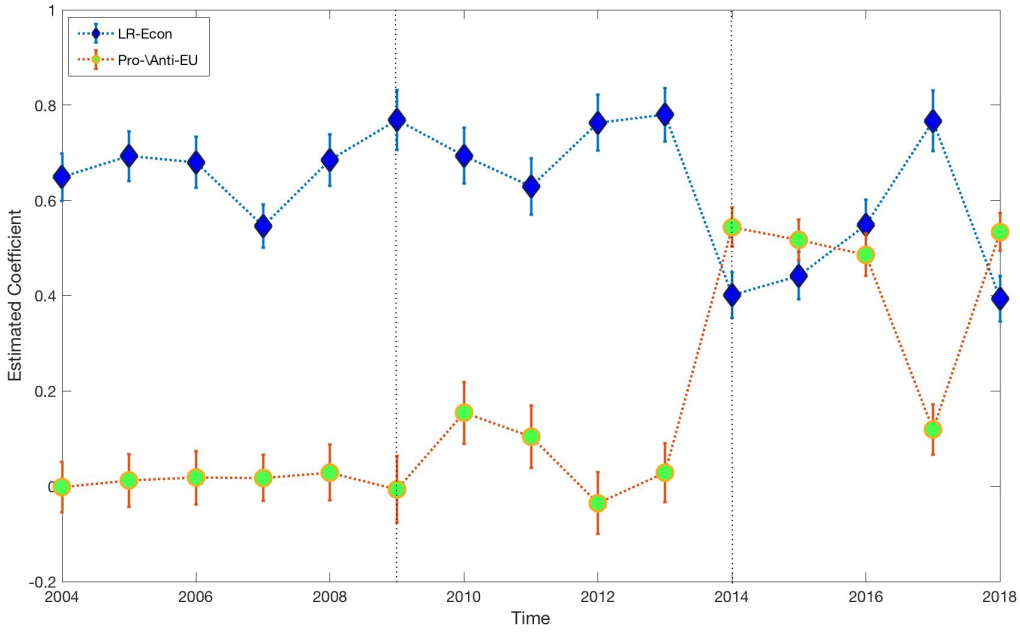
Note: Results from the clustered (around national parties) robust OLS regressions which include regional dummies. For the left-hand panel, Left-Right is the left-right general ideology of the national party according to expert survey (CHES), Pro-EU is the national party position on the EU according CHES. For the right-hand panel we use the European Social Survey, for the relevant period. Left-Right is based on voters left-right scale, and the Pro-EU variable is based on trust in the European Parliament.

Figure 3. Determinants of MEPs' Views on Some Policy Issues Over Time



Note: Standardized beta coefficients from clustered (around national parties) robust OLS regressions which include regional dummies. Source: MEP survey data.

Figure 4. First Dimension Explained by Left-Right and Pro-/Anti-EU by Year



Note. The figure shows how left-right and Pro-/Anti-EU variables explain MEP positions over time. We scaled the votes by year and then regressed the first dimension ideal points as a function of economic Left-Right and Pro-/Anti-EU. The point estimates are absolute values of the standardized coefficients. The error bars show the 95% confidence intervals.

TABLES

Table 1. Political Composition of EP6, EP7 and EP8

Political group description (EP group abbreviation)	EP6 (June 2004)	EP7 (June 2009)	EP8 (June 2014)
	MEPs (%)	MEPs (%)	MEPs (%)
Christian Democrats and Conservatives (EPP)	288 (36.7%)	265 (36.0%)	219 (29.2%)
Socialists (S&D)	217 (27.6%)	184 (25.0%)	189 (25.2%)
Liberals (ALDE)	104 (13.2%)	84 (11.4%)	68 (9.0%)
Radical Left (GUE/NGL)	41 (5.2%)	35 (4.8%)	51 (6.8%)
Greens (G/EFA)	43 (5.5%)	56 (7.6%)	52 (6.9%)
Extreme Right (ENF)			36 (4.8%)
National Conservatives (UEN)	40 (5.1%)		
Non-attached members (NA)	30 (3.8%)	29 (3.9%)	20 (2.6%)
British Conservatives and allies (ECR)		55 (7.5%)	71 (9.4%)
Anti-Europeans (I/D, EFD, EFDD)	22 (2.8%)	27 (3.7%)	44 (5.8%)
Total MEPs	785	736	750

Note: See the Appendix for the political group names.

Table 2. Goodness-of-Fit Statistics

	Correct Classification dimension 1	Correct Classification dimension 2	APRE dimension 1	APRE dimension 2	APRE2-APRE1	#RCVs	MEPs
EP6	85.7	89.5	30.5	48.9	18.4	6199	940
EP7	87.6	92.6	40.0	64.2	24.2	6961	853
EP8	86.4	93.4	41.6	71.9	30.3	6355	832

Note: The goodness-of-fit statistics (in %) are those produced by cutting line estimates produced by a logit model regressing MEP vote on MDS estimates of ideal points.
APRE=1-(total classification errors)/(total vote on minority side).

Table 3. Interpretation of the First Dimension by Substantive Issues (Policy Area)

Issue	EP6	EP7	EP8
All	LR	LR	Mix
	(6199)	(6932)	(6355)
Agriculture	LR	Mix	Mix
	(324)	(421)	(113)
Budget	LR	EU	EU
	(326)	(550)	(731)
Culture	None	EU	Mix
	(133)	(322)	(85)
Economic and Monetary Affairs	LR	Mix	Mix
	(355)	(476)	(539)
Employment	LR	LR	LR
	(225)	(396)	(413)
Environment	LR	LR	Mix
	(724)	(540)	(540)
Development	LR	LR	Mix
	(89)	(615)	(75)
Fisheries	LR	Mix	Mix
	(184)	(147)	(69)
Foreign Affairs	LR	Mix	Mix
	(441)	(441)	(946)
Gender	LR	Mix	LR+
	(104)	(259)	(285)
IMCO	LR	LR+	LR
	(235)	(128)	(341)
Industry	LR+	LR	Mix
	(282)	(423)	(341)
International Trade	LR	Mix	Mix
	(154)	(246)	(342)
Civil Liberties	LR	LR	LR
	(356)	(283)	(426)
Legal Affairs	LR	Mix	EU
	(162)	(156)	(223)

Note: IMCO=Internal market and Consumer Protection. LR stands for left-right; EU stands for pro/anti-EU. Number of votes in parentheses. For each issue, we also ran a regression of the ideal points as a function of left-right and EU. If left-right alone (EU alone) was significant at 1% then we indicate it by LR (EU). If both were significant we entered Mix. Otherwise we entered None. A + sign next to LR indicates that that in addition to LR, EU was significant but to a lesser extent (at 5% or 10%).

Table 4a. Explaining the First Dimension

	(1)	(2)	(3)	(4)	(5)	(6)
	EP6		EP7		EP8	
Variables	Dimension 1		Dimension 1		Dimension 1	
LR general	0.0289**		0.0354***		0.0136	
	(0.0142)		(0.0114)		(0.0110)	
LR econ		0.0220**		0.0242***		0.0197**
		(0.00895)		(0.00773)		(0.00913)
EU	-5.57e-05	0.000106	-0.00609	-0.0208*	0.0290*	0.0239*
	(0.00319)	(0.00321)	(0.0112)	(0.0120)	(0.0158)	(0.0140)
GOVT	0.0306	0.0377	0.0298	0.0276	-0.0443**	-0.0464**
	(0.0272)	(0.0256)	(0.0198)	(0.0198)	(0.0204)	(0.0207)
Northern MS	-0.0875**	-0.0862**	-0.0647	-0.0675*	-0.0152	-0.0204
	(0.0392)	(0.0401)	(0.0395)	(0.0384)	(0.0359)	(0.0353)
Eastern MS	0.0327	0.0325	0.0768**	0.0798***	0.0376*	0.0434*
	(0.0364)	(0.0332)	(0.0307)	(0.0261)	(0.0216)	(0.0222)
Southern MS	-0.0259	-0.0326	0.0184	0.00684	-0.0361	-0.0389
	(0.0366)	(0.0353)	(0.0293)	(0.0283)	(0.0267)	(0.0269)
UK	-0.0383	-0.0439	0.0207	-0.0133	0.0626	0.0374
	(0.0322)	(0.0341)	(0.0288)	(0.0308)	(0.0552)	(0.0457)
Constant	-0.183**	-0.163**	-0.267**	-0.118	0.0379	0.0265
	(0.0895)	(0.0651)	(0.111)	(0.0882)	(0.125)	(0.112)
EPG Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	855	855	772	772	722	722
R-squared	0.950	0.950	0.961	0.961	0.954	0.955

Note: Clustered robust standard errors in parentheses. EPG stands for European political group. GOVT is dummy variable indicating if MEP's national party participates in government. EPG stands for European Political Group; MS stands for Member State.

Table 4b. Explaining the Second Dimension

	(1)	(2)	(3)	(4)	(5)	(6)
	EP6		EP7		EP8	
Variables	Dimension 2		Dimension 2		Dimension 2	
LR general	-0.000782		-0.0298***		-0.0471**	
	(0.0168)		(0.0112)		(0.0194)	
LR econ		0.0121		-0.0268***		-0.0439***
		(0.0138)		(0.00835)		(0.0152)
EU	-0.0102**	-0.0102**	0.0716***	0.0848***	0.0135	0.0251*
	(0.00399)	(0.00404)	(0.0153)	(0.0182)	(0.0142)	(0.0138)
GOVT	0.0673	0.0667	0.0140	0.0190	0.0302	0.0352
	(0.0447)	(0.0433)	(0.0201)	(0.0212)	(0.0243)	(0.0254)
Northern MS	-0.128***	-0.131***	-0.116***	-0.108***	-0.0379	-0.0313
	(0.0427)	(0.0411)	(0.0328)	(0.0323)	(0.0380)	(0.0384)
Eastern MS	-0.0821*	-0.0782*	0.0301	0.0243	-0.0360	-0.0494*
	(0.0481)	(0.0472)	(0.0263)	(0.0244)	(0.0227)	(0.0269)
Southern MS	-0.0558	-0.0605	0.0598*	0.0741**	0.0601*	0.0710*
	(0.0433)	(0.0398)	(0.0317)	(0.0342)	(0.0356)	(0.0376)
UK	-0.166*	-0.175*	-0.112**	-0.0768*	-0.145	-0.0981
	(0.0898)	(0.0907)	(0.0489)	(0.0433)	(0.0885)	(0.0702)
Constant	0.0655	-0.0110	-0.194*	-0.289***	0.305*	0.232
	(0.113)	(0.117)	(0.103)	(0.107)	(0.172)	(0.152)
EPG Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	855	855	772	772	722	722
R-squared	0.695	0.697	0.878	0.880	0.928	0.930

Note: Cluster robust standard errors in parentheses. EPG stands for European Political Group. GOVT is dummy variable indicating if MEP's national party participates in government. MS stands for Member State.

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

Table 5. Explaining the Ideal Points estimated by OC

	First Dimension OC			Second Dimension OC		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	EP6	EP7	EP8	EP6	EP7	EP8
LR general	0.0881***	0.0812***	-0.0454***	-0.0221	0.0505***	-0.151***
	(0.00624)	(0.00425)	(0.00710)	(0.0138)	(0.00811)	(0.0107)
EU	0.00239	-0.0442***	0.129***	-0.00539	0.136***	-0.101***
	(0.00354)	(0.00808)	(0.0125)	(0.00482)	(0.0117)	(0.0175)
North_cntry	-0.0355	-0.0364	0.155***	-0.0128	-0.0780	-0.123*
	(0.0347)	(0.0323)	(0.0521)	(0.0654)	(0.0475)	(0.0645)
East_cntry	0.0671*	0.0687**	0.0247	0.00176	0.102**	-0.125**
	(0.0386)	(0.0288)	(0.0332)	(0.0444)	(0.0412)	(0.0507)
South_cntry	0.0166	-0.0165	0.0237	0.0328	0.0949*	0.0327
	(0.0346)	(0.0272)	(0.0434)	(0.0466)	(0.0522)	(0.0593)
UK	0.0531	0.0950	-0.00263	-0.133	-0.0110	-0.256
	(0.0857)	(0.0644)	(0.106)	(0.140)	(0.101)	(0.181)
Constant	-0.499***	-0.223***	-0.417***	0.169**	-1.035***	1.378***
	(0.0403)	(0.0445)	(0.0742)	(0.0739)	(0.0659)	(0.0926)
Observations	857	772	728	857	772	728
R-squared	0.701	0.781	0.791	0.085	0.630	0.703

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 6. Explaining the Ideal Points estimated by alpha-NOMINATE

	First Dimension alpha-NOMINATE			Second Dimension alpha-NOMINATE		
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	EP6	EP7	EP8	EP6	EP7	EP8
LR general	0.462***	0.661***	-0.182***	-0.225**	0.257***	0.440***
	(0.0383)	(0.0357)	(0.0514)	(0.0938)	(0.0501)	(0.0480)
EU	-0.00772	-0.106	0.589***	-0.0388	0.330***	0.382***
	(0.0232)	(0.0663)	(0.0592)	(0.0330)	(0.106)	(0.0529)
North_cntry	-0.294	-0.534**	0.117	-0.597	-0.265	0.0979
	(0.252)	(0.262)	(0.331)	(0.551)	(0.387)	(0.244)
East_cntry	0.223	0.000115	0.152	-0.174	0.687***	0.448*
	(0.230)	(0.195)	(0.254)	(0.363)	(0.243)	(0.251)
South_cntry	0.00944	-0.454**	0.285	0.162	0.894***	0.240
	(0.204)	(0.196)	(0.267)	(0.435)	(0.309)	(0.280)
UK	0.100	0.176	0.126	-0.967	-0.446	0.246
	(0.324)	(0.472)	(0.406)	(0.966)	(0.488)	(0.345)
Constant	-2.468***	-2.862***	-2.035***	1.545***	-3.487***	-4.455***
	(0.252)	(0.401)	(0.377)	(0.568)	(0.595)	(0.376)
Observations	857	772	728	857	772	728
R-squared	0.485	0.692	0.515	0.120	0.331	0.436

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 7. Determinants of MEPs' Views on EU Public Policy

Variables	(1) Environment	(2) Migration	(3) WTO	(4) Free Trade	(5) Inequality Reduction
Left-Right	-0.327***	-0.399***	0.258***	0.333***	-0.554***
	(-0.330)	(-0.408)	(0.251)	(0.324)	(-0.558)
Pro-/Anti-EU	0.213***	0.239***	0.124*	0.0833	0.0577
	(0.214)	(0.247)	(0.110)	(0.0735)	(0.0576)
Female	0.0559*	0.113***	-0.00358	-0.0212	0.114***
	(0.0563)	(0.116)	(-0.00351)	(-0.0207)	(0.115)
East MS	0.251**	0.120	0.386***	0.174	-0.0387
	(0.103)	(0.0539)	(0.149)	(0.0668)	(-0.0158)
North MS	0.318***	0.595***	0.604***	0.443***	-0.0492
	(0.0965)	(0.175)	(0.189)	(0.139)	(-0.0148)
South MS	0.260***	-0.0157	0.188*	-0.0446	0.312***
	(0.109)	(-0.00624)	(0.0795)	(-0.0189)	(0.131)
UK	-0.193	0.0486	0.493***	0.0743	-0.126
	(-0.0644)	(0.0152)	(0.166)	(0.0251)	(-0.0415)
Observations	702	523	522	522	713
R-squared	0.252	0.308	0.121	0.160	0.410

Note: Robust normalized beta coefficients in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: MEPs Survey data.

Table 8. Explaining Voters' Positions on Selected Policy Issues over Time

Variables	Year	Left-Right	Trust EP	Constant	Observations	R-squared
Migration	2006	-0.255**	0.540***	4.916***	445	0.277
Migration	2012	-0.319***	0.242**	5.418***	519	0.317
Migration	2016	-0.352***	0.681***	5.555***	421	0.708
Stf w. Econ	2006	0.1760	0.625***	4.733***	445	0.492
Stf w. Econ	2012	0.0078	0.360**	4.852***	519	0.332
Stf w. Econ	2016	0.0267	0.651***	5.577***	421	0.270
Same Sex	2006	0.215***	-0.222***	2.044***	445	0.646
Same Sex	2012	0.130***	-0.0692	1.636***	519	0.642
Same Sex	2016	0.0719**	-0.0495	1.609***	421	0.671
Inequality	2006	0.141**	0.103	2.277***	445	0.233
Inequality	2012	0.228***	0.0337	2.254***	519	0.531
Inequality	2016	0.236***	0.138***	2.241***	421	0.403

Note: Entries are standardized beta coefficients, *** p<0.01, ** p<0.05, * p<0.1. Regional dummies (not reported) are included as control variables.
Data Source: European Social Survey

Appendix

Political Group Abbreviations

ALDE	Alliance of Liberals and Democrats for Europe
ECR	European Conservatives and Reformists
EFD	Europe of Freedom and Democracy
EFDD	Europe of Freedom and Direct Democracy
ENF	Europe of Nations and Freedom
EPP	European People's Party
G/EFA	Greens/European Free Alliance
GUE/NGL	European United Left-Nordic Green Left
I/D	Independence/Democracy
NA	Non-attached
S&D	Progressive Alliance of Socialists and Democrats
UEN	Union for Europe of the Nations

Table A1. National Party and Party Group Involvement in EU Government

Political group	Number of member parties who are in national government		
	EP6	EP7	EP8
EPP	13	22	14
S&D	10	7	2
ALDE	17	14	12
EUL/NGL	0	1	2
G/EFA	0	2	6
UEN	0	0	0
ECR	0	6	3
ENF	0	0	1
I/D, EFD, EFDD	1	2	0
NA	0	2	0

Table A2. Descriptive Statistics

Variables	Variables	Obs (1)	Mean (2)	Std. dev. (3)	Min (4)	Max (5)
Panel A. National Party Positions. Chapel Hill Expert Survey						
Government Participation	govt	2,407	0.4326	0.476	0.000	1
EU Position	eu	2,406	5.253	1.654	1.11	6.999
Left-right general	lrgen	2,407	5.375	2.053	0.22	9.928
Left-right economic	lrecon	2,407	5.134	2.112	0.090	9.230
GALTAN	galtan	2,407	5.252	2.219	0.13	9.75
Spending vs Tax	spendvtax	1,828	4.802	2.146	0.14	9.5
Deregulation	deregulation	1,828	5.137	2.038	0.000	9.5
Redistribution	redistribu~n	1,828	4.622	2.113	0.000	9
Civil Liberties	civil_lib	1,828	5.479	2.188	0.5	10
Social Life	social_life	1,828	4.658	2.468	0.000	10
Immigration	immigration	1,828	5.460	1.978	0.000	10
Environment	environment	135	4.822	1.976	0.5	9.4
Panel B. Ideal Points. Roll Call Votes						
First dimension MDS	d1	2,605	0.000	0.650	-1.040	1.035
Second dimension MDS	d2	2,605	0.000	0.461	-1.344	0.852
Economic votes D1	d1econ	2,556	0.000	0.678	-1.114	0.955
Economic votes D2	d2econ	2,556	0.000	0.500	-1.425	0.890
Environment votes D1	d1envi	2,454	0.000	0.687	-1.079	1.022
Environment votes D2	d2envi	2,454	0.103	0.496	-1.353	0.992
Int. Trade D1	d1inta	2,417	0.000	0.631	-1.191	0.906
Int. Trade D2	d2inta	2,417	0.000	0.482	-1.271	0.904
Civil liberties D1	d1libe	2,542	0.000	0.644	-1.020	1.152
Civil liberties D2	d2libe	2,542	0.000	0.446	-1.469	0.800
alpha-NOMINATE D1	anomd1	2,613	0.000	1.656	-7.873	8.392
alpha-NOMINATE D2	anomd2	2,613	0.000	1.592	-7.313	9.768
Optimal Classification D1	ocd1	2,613	0.0042	0.259	-0.909	0.583
Optimal Classification D2	ocd2	2,613	0.0058	0.308	-0.895	0.910
Panel C. General Social and Political Attitudes. European Social Survey						
Placement on Left-Right Scale	lrscale	1,385	5.05453	1.473	1.765	8.288
Trust Country's Parliament	trstprl	1,385	4.574	1.100	1.041	7.342
Trust Legal System	trstlgl	1,385	5.315	1.122	1.181	8.154
Trust Police	trstplc	1,385	6.389	0.826	2.584	8.496
Trust Politicians	trstplt	1,385	3.574	1.045	0.959	6.144
Trust Other People	trstprt	1,385	3.571	1.030	0.000	6.183
Trust in European Parliament	trstep	1,385	4.322	0.833	0.000	6.502
Trust in the United Nations	trstun	1,385	5.269	0.680	2.909	7.033
How satisfied with present state of economy	stfeco	1,385	4.816	1.402	1	8.4
Gov't should reduce differences in income levels	gincdif	1,385	2.161	0.419	1	3.840
Homosexuals Should Live Free	freehms	1,385	1.951	0.530	1	4.183
European Unification Go Further	euftf	1,385	5.177	0.969	1.913	8.856
Allow Immigrants of Same Race	imsmetn	1,385	2.074	0.342	1.107	2.905
Allow Immigrants of Different Race	imdfetn	1,385	2.368	0.398	1.2143	3.352
Allow Immigrants from Poorer Countries	impcntr	1,385	2.465	0.387	1.296	3.365
Immigrants are Good for Economy	imbgeco	1,385	5.197	0.935	2	8.606
Immigrants Improve Cultural Life	imueclt	1,385	5.835	1.105	2.426	9.035
Immigrants Make Country a Better Place	imwbcnt	1,385	5.121	0.949	2.010	8.564
Do you think world's climate is changing	clmchng	421	1.468	0.142	1	1.878

Table A3a. Interpreting the First Dimensions by Parliament

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	EP6			EP7			EP8		
Variables	First Dimension			First Dimension			First Dimension		
LRgen	0.202***			0.185***			0.172***		
	(0.0180)			(0.0156)			(0.0151)		
LRecon		0.180***			0.188***			0.150***	
		(0.0162)			(0.0169)			(0.0164)	
GALTAN			0.133***			0.185***			0.155***
			(0.0158)			(0.0133)			(0.0155)
EU	0.0153	0.0220	0.0196	0.0376	-0.0519**	0.105***	0.185***	0.149***	0.225***
	(0.0275)	(0.0325)	(0.0287)	(0.0229)	(0.0204)	(0.0218)	(0.0198)	(0.0204)	(0.0191)
GOVT	0.0436	0.0445	0.175*	0.190**	0.160	0.378***	-0.127*	-0.204**	-0.102
	(0.0866)	(0.0973)	(0.104)	(0.0869)	(0.0999)	(0.0786)	(0.0709)	(0.0804)	(0.0775)
NORTHERN	-0.0672	-0.0993	-0.0410	-0.0662	-0.140	-0.0528	0.176**	0.176**	0.145
	(0.0858)	(0.0866)	(0.107)	(0.0958)	(0.106)	(0.0888)	(0.0756)	(0.0731)	(0.0885)
EASTERN	0.245**	0.268***	0.248**	0.326***	0.397***	0.166*	0.210***	0.283***	0.145*
	(0.0945)	(0.102)	(0.114)	(0.0845)	(0.0906)	(0.0886)	(0.0732)	(0.0847)	(0.0815)
SOUTHERN	0.0853	0.0621	0.0296	0.215*	0.161	0.162*	0.0394	0.0230	0.0386
	(0.110)	(0.108)	(0.102)	(0.110)	(0.110)	(0.0905)	(0.0932)	(0.104)	(0.0863)
UK	-0.124	-0.159	-0.0686	-0.0983	-0.177**	0.0623	-0.103	-0.142	-0.137
	(0.154)	(0.140)	(0.191)	(0.0976)	(0.0870)	(0.105)	(0.156)	(0.138)	(0.192)
Constant	-1.29***	-1.17***	-0.99***	-1.46***	-0.93***	-1.81***	-1.93***	-1.610***	-2.009***
	(0.166)	(0.177)	(0.175)	(0.155)	(0.120)	(0.153)	(0.122)	(0.117)	(0.134)
Observations	148	148	148	138	138	138	167	167	167
R-squared	0.589	0.510	0.388	0.617	0.575	0.639	0.630	0.539	0.573

Note: The unit of the analysis is (average) national party. The dependent variable is the average ideal point of MEPs of a national party estimated by MDS.

Table A3b. Explaining the First Dimension with EPG Controls

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	EP6 First Dimension			EP7 First Dimension			EP8 First Dimension		
LRgen	0.0300**			0.0468***			0.0176**		
	(0.0118)			(0.0144)			(0.00870)		
LRecon		0.0205**			0.0320***			0.0106	
		(0.00803)			(0.0114)			(0.00788)	
GALTAN			0.00627			0.0311***			0.00696
			(0.00782)			(0.0109)			(0.00570)
EU	0.0186	0.0206	0.0215	-0.0283**	-0.0429***	-0.0223*	0.0172	0.0149	0.0200
	(0.0199)	(0.0199)	(0.0207)	(0.0124)	(0.0137)	(0.0134)	(0.0141)	(0.0147)	(0.0147)
GOVT	0.00460	0.0155	0.0122	-0.00653	-0.00323	0.0374*	-0.0218	-0.0247	-0.0196
	(0.0214)	(0.0223)	(0.0227)	(0.0196)	(0.0201)	(0.0213)	(0.0172)	(0.0179)	(0.0179)
NORTHERN	-0.0958**	-0.0926**	-0.0908**	-0.0764**	-0.0747**	-0.0633**	-0.0130	-0.0115	-0.0113
	(0.0437)	(0.0451)	(0.0445)	(0.0347)	(0.0354)	(0.0308)	(0.0284)	(0.0293)	(0.0287)
EASTERN	0.0815***	0.0786***	0.0707**	0.0994***	0.105***	0.0730***	0.0569**	0.0575**	0.0514**
	(0.0280)	(0.0277)	(0.0279)	(0.0217)	(0.0223)	(0.0252)	(0.0229)	(0.0233)	(0.0231)
SOUTHERN	-0.0150	-0.0147	-0.0167	0.0274	0.0185	0.0283	-0.0334	-0.0384	-0.0335
	(0.0333)	(0.0329)	(0.0341)	(0.0275)	(0.0304)	(0.0285)	(0.0356)	(0.0356)	(0.0348)
UK	0.00915	0.0123	0.0190	0.00875	-0.00892	0.0143	0.0241	0.0231	0.0189
	(0.0333)	(0.0351)	(0.0386)	(0.0324)	(0.0394)	(0.0331)	(0.0259)	(0.0245)	(0.0257)
EPP	0.717***	0.747***	0.739***	0.771***	0.805***	0.739***	0.460***	0.477***	0.469***
	(0.0352)	(0.0346)	(0.0359)	(0.0304)	(0.0275)	(0.0395)	(0.0387)	(0.0351)	(0.0378)
GUE/NGL	-0.546***	-0.557***	-0.660***	-0.578***	-0.672***	-0.733***	-1.073***	-1.098***	-1.122***
	(0.0659)	(0.0634)	(0.0445)	(0.0913)	(0.0738)	(0.0627)	(0.0612)	(0.0561)	(0.0547)
INDDEM	-0.0631	0.00987	-0.0364	-0.0698	-0.00274	-0.0812	-0.747***	-0.733***	-0.720***
	(0.101)	(0.0904)	(0.0963)	(0.0748)	(0.0779)	(0.0819)	(0.0845)	(0.0885)	(0.0844)
NA	-0.0985*	-0.00533	-0.0605	-0.357***	-0.250***	-0.312***	-0.838***	-0.786***	-0.818***
	(0.0536)	(0.0446)	(0.0683)	(0.0780)	(0.0827)	(0.0786)	(0.0945)	(0.0947)	(0.0921)
S&D	-0.685***	-0.685***	-0.736***	-0.546***	-0.567***	-0.628***	-0.450***	-0.459***	-0.474***
	(0.0361)	(0.0369)	(0.0282)	(0.0417)	(0.0412)	(0.0278)	(0.0277)	(0.0291)	(0.0264)
UEN	0.309***	0.387***	0.333***						
	(0.0409)	(0.0361)	(0.0435)						
G/EFA	-0.689***	-0.696***	-0.759***	-0.681***	-0.713***	-0.722***	-1.061***	-1.076***	-1.083***
	(0.0485)	(0.0463)	(0.0381)	(0.0684)	(0.0691)	(0.0634)	(0.0354)	(0.0334)	(0.0311)
ECR				0.277***	0.297***	0.277***	-0.178***	-0.166***	-0.160***
				(0.0440)	(0.0455)	(0.0432)	(0.0414)	(0.0415)	(0.0395)
ENF							-0.721***	-0.703***	-0.677***
							(0.0719)	(0.0786)	(0.0704)
Constant	-0.300**	-0.280**	-0.177	-0.184	-0.0234	-0.101	0.0508	0.0997	0.0986
	(0.125)	(0.117)	(0.113)	(0.123)	(0.0988)	(0.113)	(0.102)	(0.0913)	(0.102)
Observations	148	148	148	138	138	138	167	167	167
R-squared	0.960	0.959	0.958	0.975	0.973	0.974	0.971	0.971	0.971

Note: The unit of the analysis is (average) national party. The dependent variable is the average ideal point of MEPs of a national party estimated by MDS.

Table A4a. Explaining the Second Dimension

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	EP6			EP7			EP8		
	Second Dimension			Second Dimension			Second Dimension		
LRgen	0.0106			-0.0183**			-0.100***		
	(0.0186)			(0.00917)			(0.0101)		
LRecon		0.0508***			-0.0285***			-0.0996***	
		(0.0155)			(0.0104)			(0.00925)	
GALTAN			-0.0259*			0.00828			-0.0673***
			(0.0147)			(0.00965)			(0.0113)
EU	-0.0265	-0.0311	-0.0202	0.215***	0.225***	0.227***	0.159***	0.183***	0.142***
	(0.0260)	(0.0249)	(0.0265)	(0.0139)	(0.0141)	(0.0163)	(0.0124)	(0.0122)	(0.0157)
GOVT	0.331***	0.274***	0.368***	0.0248	0.0447	-0.00981	0.139***	0.180***	0.144**
	(0.0749)	(0.0739)	(0.0720)	(0.0545)	(0.0529)	(0.0543)	(0.0497)	(0.0500)	(0.0611)
NORTHERN	-0.140	-0.147	-0.147	-0.0260	-0.0163	-0.0214	0.125**	0.124*	0.142*
	(0.100)	(0.0983)	(0.101)	(0.0638)	(0.0627)	(0.0675)	(0.0596)	(0.0651)	(0.0738)
EASTERN	0.0707	0.0599	0.0890	0.0775	0.0705	0.0600	-0.0396	-0.0826	-0.0211
	(0.0838)	(0.0829)	(0.0795)	(0.0609)	(0.0603)	(0.0605)	(0.0520)	(0.0515)	(0.0650)
SOUTHERN	-0.0612	-0.0580	-0.0610	0.102	0.106*	0.110*	0.0989	0.102	0.113*
	(0.103)	(0.0977)	(0.106)	(0.0636)	(0.0640)	(0.0590)	(0.0690)	(0.0695)	(0.0648)
UK	-0.140	-0.161	-0.139	-0.0569	-0.0461	-0.0466	-0.0100	0.00451	0.0255
	(0.142)	(0.157)	(0.130)	(0.0855)	(0.0810)	(0.0915)	(0.0875)	(0.0865)	(0.0962)
Constant	-0.123	-0.265*	0.00875	-1.128***	-1.145***	-1.318***	-0.331***	-0.469***	-0.436***
	(0.174)	(0.154)	(0.172)	(0.0880)	(0.0752)	(0.115)	(0.0898)	(0.0791)	(0.117)
Observations	148	148	148	138	138	138	167	167	167
R-squared	0.192	0.252	0.210	0.669	0.677	0.663	0.661	0.649	0.549

Note: The unit of the analysis is (average) national party. The dependent variable is the average ideal point of MEPs of a national party estimated by MDS.

Table A4b. Explaining the Second Dimension with EPG Controls

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	EP6 Second Dimension			EP7 Second Dimension			EP8 Second Dimension		
LRgen	-0.00867			-0.0237*			-0.0321**		
	(0.0154)			(0.0142)			(0.0134)		
LRecon		0.00560			-0.0219**			-0.0345***	
		(0.0116)			(0.00933)			(0.0103)	
GALTAN			-0.0102			0.00756			-0.00269
			(0.0106)			(0.0106)			(0.00946)
EU	0.000554	-0.00104	0.000925	0.0876***	0.0953***	0.0988***	0.0285*	0.0368**	0.0267
	(0.0135)	(0.0134)	(0.0131)	(0.0234)	(0.0259)	(0.0264)	(0.0161)	(0.0170)	(0.0195)
GOVT	0.0403	0.0361	0.0450	-0.000862	0.000949	-0.00733	0.0282	0.0376*	0.0274
	(0.0405)	(0.0389)	(0.0417)	(0.0209)	(0.0205)	(0.0226)	(0.0211)	(0.0201)	(0.0212)
NORTHERN	-0.154***	-0.156***	-0.154***	-0.0853**	-0.0838**	-0.0933**	-0.0107	-0.0113	-0.0156
	(0.0442)	(0.0440)	(0.0441)	(0.0418)	(0.0418)	(0.0436)	(0.0336)	(0.0343)	(0.0356)
EASTERN	-0.0513	-0.0459	-0.0486	0.0572*	0.0501*	0.0656**	-0.0271	-0.0342	-0.0199
	(0.0389)	(0.0396)	(0.0386)	(0.0292)	(0.0287)	(0.0298)	(0.0224)	(0.0218)	(0.0241)
SOUTHERN	-0.115***	-0.115***	-0.113***	0.0768	0.0811*	0.0845*	0.0456	0.0558	0.0513
	(0.0408)	(0.0412)	(0.0403)	(0.0468)	(0.0477)	(0.0481)	(0.0363)	(0.0373)	(0.0367)
UK	-0.126**	-0.132**	-0.125*	-0.0621	-0.0523	-0.0510	-0.0550	-0.0563	-0.0485
	(0.0632)	(0.0645)	(0.0636)	(0.0595)	(0.0582)	(0.0648)	(0.0477)	(0.0431)	(0.0520)
EPP	0.123**	0.110**	0.135**	0.133***	0.117***	0.0959**	-0.138***	-0.163***	-0.174***
	(0.0517)	(0.0466)	(0.0584)	(0.0301)	(0.0266)	(0.0373)	(0.0384)	(0.0324)	(0.0398)
GUE/NGL	-0.837***	-0.774***	-0.808***	-0.513***	-0.492***	-0.364***	-0.361***	-0.364***	-0.257***
	(0.0779)	(0.0853)	(0.0549)	(0.104)	(0.104)	(0.113)	(0.0692)	(0.0589)	(0.0700)
INDDEM	-0.671***	-0.680***	-0.646***	-0.362**	-0.397***	-0.407***	-0.703***	-0.702***	-0.760***
	(0.116)	(0.114)	(0.120)	(0.151)	(0.151)	(0.154)	(0.174)	(0.165)	(0.189)
NA	-0.726***	-0.738***	-0.698***	-0.369**	-0.429**	-0.416**	-0.644***	-0.771***	-0.694***
	(0.153)	(0.137)	(0.157)	(0.174)	(0.168)	(0.182)	(0.176)	(0.139)	(0.129)
S&D	0.351***	0.381***	0.363***	0.259***	0.254***	0.322***	0.441***	0.430***	0.492***
	(0.0501)	(0.0544)	(0.0445)	(0.0449)	(0.0373)	(0.0312)	(0.0333)	(0.0326)	(0.0314)
UEN	-0.210***	-0.215***	-0.186**						
	(0.0713)	(0.0721)	(0.0774)						
G/EFA	-0.450***	-0.407***	-0.442***	-0.279***	-0.280***	-0.193***	0.0438	0.0375	0.109**
	(0.0662)	(0.0739)	(0.0546)	(0.0568)	(0.0538)	(0.0481)	(0.0397)	(0.0356)	(0.0438)
ECR				-0.830***	-0.839***	-0.851***	-0.744***	-0.747***	-0.787***
				(0.0802)	(0.0798)	(0.0825)	(0.0532)	(0.0494)	(0.0476)
ENF							-0.791***	-0.767***	-0.890***
							(0.100)	(0.0973)	(0.0872)
Constant	0.103	0.0289	0.0915	-0.331**	-0.379**	-0.571***	0.154	0.129	0.000839
	(0.103)	(0.111)	(0.0790)	(0.157)	(0.164)	(0.184)	(0.111)	(0.0937)	(0.149)
Observations	148	148	148	138	138	138	167	167	167
R-squared	0.833	0.833	0.834	0.909	0.910	0.907	0.936	0.938	0.929

Note: The unit of the analysis is (average) national party. The dependent variable is the average ideal point of MEPs of a national party estimated by MDS.

Table A5. Determinants of MEPs' First Dimension Ideal Points by Policy Area

VARIABLES	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)
	Agriculture			Budget			Culture		
Left-Right	0.168***	0.306***	0.359***	0.326***	0.0232	0.0820**	0.0107	0.0226	-0.106***
EU	0.00526	0.250***	0.287***	0.00244	0.427***	0.476***	0.0312	-0.460***	0.405***
Observations	727	736	656	814	772	708	748	714	662
R-squared	0.261	0.556	0.506	0.497	0.708	0.661	0.007	0.685	0.737
VARIABLES	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)
	Economic & Monetary Affaires			Employment			Environment		
Left-Right	0.537***	0.515***	0.292***	0.497***	0.433***	0.528***	0.524***	0.573***	0.526***
EU	0.00936	0.215***	0.421***	0.0265	0.0409	-0.0585	0.00994	0.0836	0.181***
Observations	833	765	708	750	761	703	793	720	696
R-squared	0.567	0.571	0.634	0.599	0.620	0.600	0.614	0.681	0.564
VARIABLES	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)
	Development			Fisheries			Foreign Policy		
Left-Right	0.519***	0.480***	0.437***	0.181***	0.234***	0.197***	0.413***	0.219***	0.169***
EU	0.0109	-0.0216	0.295***	-0.00632	0.146***	0.293***	0.00589	0.472***	0.460***
Observations	682	729	657	701	729	664	829	747	719
R-squared	0.612	0.664	0.608	0.293	0.404	0.558	0.560	0.633	0.610
VARIABLES	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)
	Gender			Int. Market & Cons. Protection			Industry		
Left-Right	0.531***	0.387***	0.561***	0.423***	0.480***	0.424***	0.401***	0.474***	0.560***
EU	0.00511	-0.210***	-0.0924*	0.0113	0.193***	0.0665	0.0315*	0.0411	0.169***
Observations	728	761	695	794	734	691	794	742	676
R-squared	0.634	0.725	0.650	0.524	0.545	0.515	0.547	0.626	0.589
VARIABLES	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)	(EP6)	(EP7)	(EP8)
	International Trade			Civil Liberties			Legal Affairs		
Left-Right	0.432***	0.474***	0.386***	0.454***	0.520***	0.544***	0.319***	0.178***	0.0299
EU	-0.00509	0.154***	0.379***	0.0210	0.0664	-0.0199	-0.00131	0.386***	0.439***
Observations	733	753	695	829	763	699	771	733	652
R-squared	0.516	0.623	0.592	0.615	0.654	0.647	0.471	0.530	0.753

Entries are robust standardized coefficients of MEPs ideal points on Left-right and EU. Regional dummies and a constant are included but not reported.

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

Table A6. MEP Positions Explained by Voters' Ideology

Variables	Dependent Variable: First Dimension Ideal Points					
	(1)	(2)	(3)	(4)	(5)	(6)
Voter LR scale	0.842***	-0.0409	0.472***	-0.0169	0.584***	-0.0732***
	(0.0776)	(0.0418)	(0.115)	(0.0251)	(0.0924)	(0.0274)
Voter trust ep	0.0106	-0.0678**	0.0694	-0.0186	0.478***	0.0442
	(0.136)	(0.0313)	(0.0838)	(0.0157)	(0.104)	(0.0303)
Govt	0.218	0.0584	0.799**	0.0413	-0.220	-0.0370
	(0.252)	(0.0355)	(0.330)	(0.0350)	(0.251)	(0.0359)
Northern MS	-0.524**	-0.0424	-0.562**	-0.0555	-0.794***	-0.124**
	(0.206)	(0.0559)	(0.251)	(0.0572)	(0.300)	(0.0489)
Eastern MS	-0.0894	0.122***	0.381	0.0946**	0.175	0.0836***
	(0.261)	(0.0436)	(0.258)	(0.0448)	(0.314)	(0.0273)
Southern MS	-0.224	0.0171	0.268	0.0708	-	-
	(0.295)	(0.0285)	(0.511)	(0.0445)	-	-
Constant	-0.124	0.0492	-0.424**	-0.101	0.232	0.494***
	(0.150)	(0.0571)	(0.213)	(0.0697)	(0.236)	(0.0454)
EPG Fixed Effect	No	Yes	No	Yes	No	Yes
Observations	443	443	518	518	415	415
R-squared	0.672	0.965	0.496	0.960	0.547	0.969
	Dependent Variable: Second Dimension Ideal Points					
	(1)	(2)	(3)	(4)	(5)	(6)
Voter LR scale	-0.103	0.0261	-0.190*	-0.0285	-0.393***	0.00949
	(0.118)	(0.0692)	(0.101)	(0.0297)	(0.103)	(0.0581)
Voter trust ep	0.392**	-0.00783	0.344***	0.0608*	0.571***	0.0671
	(0.168)	(0.0634)	(0.0988)	(0.0365)	(0.0642)	(0.0414)
Govt	0.377*	0.0679	0.403**	-0.0299	0.791***	0.0988
	(0.221)	(0.102)	(0.185)	(0.0550)	(0.181)	(0.0645)
Northern MS	-0.435*	-0.265**	-0.504**	-0.383***	-0.412**	-0.121*
	(0.225)	(0.105)	(0.226)	(0.0735)	(0.206)	(0.0694)
Eastern MS	-0.410	-0.0943	-0.369	0.0178	-0.290	-0.0577
	(0.253)	(0.117)	(0.287)	(0.0470)	(0.185)	(0.0523)
Southern MS	0.261	0.180*	0.563***	0.159**	-	-
	(0.450)	(0.104)	(0.184)	(0.0752)	-	-
Constant	-0.0594	0.0647	-0.0580	0.194**	-0.0794	0.147
	(0.184)	(0.130)	(0.196)	(0.0803)	(0.140)	(0.0977)
EPG Fixed Effect	No	Yes	No	Yes	No	Yes
Observations	443	443	518	518	415	415
R-squared	0.146	0.739	0.266	0.841	0.756	0.962

Note: Entries are standardized beta coefficients. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

A brief description of MDS

Classical Multidimensional scaling (MDS) is a widely used technique for analyzing similarity or dissimilarity data on a set of objects. It is designed to approximate the distances between points in a high dimensional space by estimated distances in a low-dimensional space. Because the goal of MDS is to produce a visual summary, it typically reduces the dimensionality of space into a two or three-dimensional space. As a data reduction strategy for large datasets, MDS is relevant for estimating spatial models of voting.

Although various methods of MDS have been developed in psychology, MDS is particularly relevant in political science because many theories of political phenomena can be represented in spatial terms (Jacoby and Armstrong 2014). Not surprisingly it has been used as a tool to investigate substantive problems ranging from candidate evaluations within the mass public (Rabinowitz 1978; Weisberg and Rusk 1970); to examining the spatial theory of voting and the dimensionality of survey questions (Jacoby 1996).

MDS originally used interval-scaled data, but it can handle ordinal or even nominal data, such as roll call votes. In this paper we use MDS to analyze similarity of parliamentarians roll call data, and estimate legislators ideal points. Following Diaconis et al. (2008), we use a simple variant of MDS algorithm with the following steps:

1. Compute the legislator-by-legislator matrix of distances, where the empirical distance between i and j on a given vote is the L_1 distance computed as

$d_{ij} = \frac{1}{C_{ij}} \sum_{k=1}^{n} |v_i - v_j|$

where v_i and v_j represent the votes of legislator i and legislator j, respectively. We focus on the Yes or No (entered as 1 or -1) votes of MEPs and treated all kinds of abstentions as missing values. When treating abstention as a midpoint between Yes and No, none of our results changed. C_{ij} is the number of times when both i and j participated in voting. n is the number of roll call votes in a given parliament term.

2. Transform the distances to dissimilarities by applying the following kernel to the distances: $p_{ij} = 1 - exp(-d_{ij})$. This kernel will give lower weights to larger distances. Given that in our cases we have larger distances between parties and tiny distances within parties, applying this kernel produced better results. When ignoring this kernel, our results did not look much different.

3. Double center the matrix of the dissimilarities. That is, from each element of the matrix of dissimilarities, subtract the row mean, subtract the column mean, and add the matrix mean divided by -2.

4. Perform the eigenvalue-eigenvector decomposition of the double-centered matrix to recover the coordinates. 5. Select the number of dimensions based on some given criteria. The main criteria we used are the goodness-of-fit statistics (percent of correctly classified votes, and aggregate proportional reduction in errors).

The output of MDS is usually a small number of dimensions in order to facilitate interpretation. In our case, we estimated two-dimensional spaces for two reasons. First the goodness-of-fit was negligible when adding a third dimension. Second, the higher dimensions did not have any meaningful interpretations. Also, this follows the existing literature that focuses on two-dimensional models.

MDS is not identified without further restrictions. In our case, we normalized the data so that ideal points in each dimension varies vary from -1 to 1, and has a mean of zero. In addition, if needed we reflected (i.e. coordinated are multiplied by -1) each dimension of the map such that a left-wing legislator is on the left side of the map. For the second dimension, we also reflected the dimension so that a pro-EU legislator is on the upper part of the map.

Note that the steps of MDS we use are also those used to compute the starting values for W-NOMINATE, and OC. It is also similar to the Heckman-Snyders linear probability model.