Ideology in times of crisis

A principal component analysis of votes in the European Parliament, 2004-2019

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Abstract

This paper aims to identify the main dividing lines that determine the voting behaviour of Members of the European Parliament (MEPs) and how they evolved throughout the crisis. Introducing a new database that collects and classifies the full population of plenary votes from 2004 to 2019, this work uses principal component analysis to identify the latent patterns on which MEPs ally and divide. Focussing on economic votes, it finds that, while pre-crisis votes were mainly determined by differences across the left-vs-right spectrum and, only secondly, by differences in support for European integration, the crisis inverted this trend, making support for Europe the most relevant dividing line in the European Parliament. In support of this evidence, the paper introduces a new vote-scraping technique to investigate the ideological nature of these dimensions. Vote scraping reveals that the left-right cleavage is mainly ideological but with limited impact on budgetary resources, whereas the European dimension mostly reflects a conflict over the budget, with higher legislative impact and seemingly low ideological content.

Keywords: Ideology; European Parliament; Crisis.

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The ideologies of the past have merely been replaced by others which are new or claim to be new. The ideological tree is always green.

<div align="right">Norberto Bobbio (1994, p. 3).</div>

1. Introduction

Does ideology matter in European politics? If so, are the traditional categories of left and right still relevant to understand today's party-system? And, more practically, does ideology drive the voting choices of parliamentarians? These fundamental questions have been recurrent in the studies of ideology. In the 1980s, the seminal book *Neither Right Nor Left* by Zeev Sternhell (1983) described how the formation of Fascist parties first in France and then in Italy was characterised by the merge of both left-wing and right-wing ideological traits, leaving the impression that these categories had lost their relevance. A decade later, in his influential essay *Left and Right*, Norberto Bobbio (1994) argued that such merge could have been equally interpreted as a synthesis – or 'third way'- between the two ideologies, rather than their elimination, reopening the debate on the importance of these categories.

In order to understand the role that ideologies play in determining politics, it is necessary to first define them. Ideology can be defined as a *belief system* (Converse 1964) where stances on issues are interrelated and bundled. Similarly, for Hinich and Pollard (1981), ideologies are those normative political theories responsible for the consistencies of politicians' behaviour on certain sets of issues. In other words, ideologies can be considered as labels that allow us to formulate rough expectations of the positions politicians are likely to take on a variety of issues. For example, if a politician opposes raising minimum wages, she would fall under the 'right-wing' category and we would hence expect her to likely oppose also government-run universal health care and gun control (Poole and Rosenthal 2001). As summarised by Poole and Rosenthal (2001, p. 7), ideology is "fundamentally the knowledge of what-goes-with-what".

The view that categories such as left and right are useful to describe these stances was confirmed by the empirical evidence. In the 1980s, Poole and Rosenthal (1985, 1997) analysed the coalition building on roll-call votes casted in the US Congress from 1789 to 1985, introducing a scaling methodology able to track legislators' ideological space. Their main finding was that members of the US Congress based their voting behaviour on a bi-dimensional conflict, which could be ascribed to the traditional left-right division. The European case was no exception. By applying the same methodology developed by Poole and Rosenthal, Hix, Noury and Roland (2006, 2007, 2009) found MEPs' voting behaviour from 1979 to 2004 to be dominated by the left-right conflict. Interestingly, they also identified a second relevant dimension that could be associated both with the degree of support toward European integration, as well as with the conflict between parties governing EU institutions and their opposition.

Nevertheless, the crisis is believed to have affected this configuration in Europe, raising doubts on the ability of ideology to explain contemporary politics and to account for legislators' voting choices. Far-

right parties begun to assume positions more similar to the ones of the left on economic and social policy, but in a nationalist way. On the other hand, radical left politicians increased their criticism toward European integration, calling for enhancing their sovereignty and for more protectionist policies, in line with right-wing nationalist stances. In response, moderate centre-left and centre-right parties were perceived to converge in their support for similar economic policies both at domestic and European level. These changes did not only make the left-right conflict more blurred, but also evidenced the increased relevance of a second dimension reflecting the degree of support for European integration.

In this work, we estimate empirically the evolution of the voting behaviour of Members of the European Parliament (MEPs) throughout the Great Financial Crisis. By collecting data on each plenary vote casted in the European Parliament from 2004 to 2019 (three parliamentary terms), we identify the main dimensions driving MEPs' voting and their evolution through the crisis using principal component analysis. We find that the left-right divide, which was the main dimension in the 6th and 7th parliaments, was surpassed by the European-support dimension in 2014, that became the dominant dividing line in the current term. While this result is in line with the recent update by Hix, Noury and Roland (2018), it contributes to a better understanding of this new dimension in two ways. In the second part of the paper, we focus on economic legislation, which was arguably the most affected by the economic and financial crisis.

First of all, we introduce a vote-scraping method which allows us to extract among the whole population of plenary votes those that were the most significant in determining this new dimension. This technique allows us to shed new light on the nature of such European dimension, which has been blurred with pro-/anti-globalisation or pro-/anti-migration cleavages in the literature. Secondly, differently from previous works, we distinguish between different types of votes rather than considering all votes as equal in determining the dimensions. Some votes are in fact highly symbolic but have little legislative impact. Other votes, like budgetary votes, have instead a strong practical impact, but cannot be easily associated to an ideological dimension.

We find that the European dimension is largely characterised by budgetary votes (46% of the votes). While the literature has associated the European dimension with an ideological divide between trade-sceptics nationalists versus supporters of economic and cultural integration, our findings suggest that such association might be narrower or less direct. The European dimension can in fact be rather identified with the fight over the budgetary expansion pushed by the current governing coalition in the EU and contrasted by the opposition, which therefore presents Eurosceptic stances. This preliminary finding suggests that MEPs' Eurosceptic behaviour might be mostly driven by their opposition to the current political establishment rather than to the European project as a whole. Moreover, we find that the explanatory power of both dimensions has increased over time, being able to account for more than 40 percent of the votes of the 8th parliamentary term. We therefore provide evidence that, despite the loss of its primacy as main dimension, the left-right cleavage has gained relevance after the crisis.

The paper is structured as follows. The next section provides an overview of the literature on ideology, including both the pre-crisis works that quantified it based on legislators' voting data and the post-crisis qualitative analyses that pointed out that the crisis might have changed the context. Section 3 and Section 4 describe respectively the data we collected and our methodology. Section 5 presents the results of the principal component analysis, which are then confronted with the vote-scraping results in Section 6, which analyses the extracted votes and their categories. Section 7 shows how the dimensions evolved throughout the crisis, whereas the last section concludes.

2. Literature

The first attempt to measure ideology empirically by extracting the main dimensions from parliamentarians votes dates back to the seminal work by Poole and Rosenthal (1985, 1997), who found that members of the US Congress based their voting behaviour on a left-right dimension.[3] Their results were based on a Nominal Three-Steps Estimation, known as NOMINATE, a scaling technique aimed to project the multidimensionality of parliamentarians voting behaviour into a low-dimensional (mostly bi-dimensional) Euclidean space.[4]

By applying the same method to the votes of MEPs from 1979 to 2004, Hix, Noury and Roland (2006, 2007, 2009) described the dimensionality of their voting behaviour as dominated by the traditional left-right divide. They however identified a second relevant dimension that could be associated both to the degree of support toward European integration and to the government-opposition divide between political groups. A number of other works based on data on roll-call votes identified the left-right cleavage as the principal one in the European political landscape (Attina 1990, Raunio 1997, Kreppel 2002, McElroy and Benoit 2007, Thomassen et al. 2004). These findings were in line with the idea that the main party families in Europe, namely the Christian-Democrats, the Socialists and the Liberals, increasingly converged on pro-EU integration positions since the 1970s (Hix 1999, Hooghe et al. 2002, van der Eijk and Franklin 2004).

However, in recent times categories based on the left-right spectrum have become more difficult to interpret. Kriesi et al. (2008) argued that of the party political system in Western Europe underwent a substantial reconfiguration driven by globalisation and denationalisation. In particular, they maintained that new emphasis on cultural dimensions, such as migration and resistance against European integration, has shifted the traditional focus on the political debate. According to Hooghe and Marks (2017), the euro crisis and the migration crisis were the main factors leading the change in the European political landscape. In their view, the traditional left-right divisions have been replaced by a new *transnational cleavage*, which finds at its opposing poles those who defend national sovereignty and traditional values and those in favour of deeper economic and cultural integration. On the same strand, Blumeneau and Lauredale (2018) found that since the crisis coalitions in the European Parliament tended to be formed along a pro-/anti-EU integration rather than the left-right dimension of disagreement.

This phenomenon was confirmed by the most recent update of NOMINATE estimates of MEPs' votes by Hix, Noury and Roland (2018). Analysing votes casted in the European Parliament since 2004, they foudn that the second latent dimension they previously identified became the most prominent conflict since 2014. They then tested their results against a number of surveys that capture parliamentarians' policy positions with OLS regressions, finding a correspondence between their latent dimensions and MEPs positions on the EU and on the left-right spectrum. However, they claimed that positions on the EU might also relate to broader support for economic integration and globalisation, arguing that the new principal dimension might hence correspond to the transnational cleavage outlined by Hooghe and Marks (2017).

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[3] As their analysis is based on the US Congress, Poole and Rosenthal refer to the American terminology and use the categories of "liberal" and "conservative" rather than "left" and "right".

[4] The same authors proposed different versions of NOMINATE, such as the dynamic version of NOMINATE (D-NOMINATE), the weighted version (W-NOMINATE) and the dynamic and weighted version (DW-NOMINATE). See Poole and Rosenthal (2001) for more details.

Nevertheless, a number of questions remain unanswered by the current literature. First of all, the ideological nature of the dimensions remain unclear. Their explanatory power is determined by the frequency on which each legislator coalesce with the supporters (opponents), regardless of the nature of the legislative file and of their policy areas. This leaves unclear whether the two dimensions, which are orthogonal, are actually comparable in terms of ideological weight. The ideological content of a vote on a budgetary file might in fact be different from the one of a resolution on a topical subject. Moreover, legislators could assume more ideological positions when they know that their vote is not going to have a relevant practical impact, as in a declaration, rather than on a budgetary vote. All these elements are not captured by existing techniques. Secondly, due to their latent nature, the dimensions extracted in previous works are like black boxes that need auxiliary methodologies in order to be interpreted. As described, Hix, Noury and Roland (2018) inspected the content of their dimensions based on the correlation they had with party-level scores according to experts' surveys. While this methodology provides a clear macro-perspective of the dimensions, it however lets unclear which aspects characterise them the most. For example, it could be that the European/globalisation support dimension could be solely driven by votes related to Brexit.

Our paper attempts to fill these gaps by introducing a novel approach to analyse votes. First of all, it provides new evidence on the dimensions of MEPs' voting behaviour and its evolution by applying a new technique, namely principal component analysis. While such method provides us with similar results to traditional scaling methods, it allows us to further inspect the detailed nature of the dimensions and the votes that most significantly determined them. Our methodology in fact enables us to study the nature of the latent dimensions by scraping the most relevant votes among the full sample as an auxiliary technique to the main results of the principal components. This provides for a more direct test related to the identity of the dimensions, which overcomes the limitations deriving from the use of surveys. Moreover, the distinction of vote typologies improves our understanding of the two components and in particular of their heterogeneity in terms of ideological content.

3. Data

The European Parliament regularly publishes on its website files in PDF format containing information on all plenary votes of each MEP, i.e. whether she abstained, voted in favour or against a specific amendment. We create a code that allows us to scrape online all these files to capture the results, at amendment level and at MEP level, of call votes casted in the European Parliament since 2004. By doing so, we are able to collect and codify information on each MEP, namely her nationality, political group and party memberships. We put together this information in a matrix whose rows are represented by the names of each MEP and whose columns are represented by individual amendments. Each cell reports the vote of the individual MEP on the individual amendment, which is coded as in favour, against or abstained. For the 8th parliamentary term, which is the one from 2014 to 2019, we have collected 9,682 votes to be multiplied by 852 MEPs,[5] whereas we collected 6,918 votes for the 7th parliamentary term (2009-2014), and 6,380 votes for the 6th (2004-2009). The combination of MEPs and votes results in a large matrix composed of 20,200,510 cells. We refine our web-scraping technique in a way that allows us to detect also the policy areas of each vote. PDF files in fact contain also

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[5] While the number of seats of the 8th European Parliament is 751, the actual number of MEPs varies, as some leave their post to others. We therefore end up with 851 MEPs for the 8th EP, 857 for the 7th and 944 for the 6th, which was the one with the highest turnover. We however control for this moving factor, avoiding to compute as abstention the vote of MEPs which are not any longer members.

references to the Committees responsible for the specific legislative file. For example, if the file refers to ECON, we register the vote as related to "economic policy", as it was created under the Committee on Economic and Monetary Affairs. Details of the database are summarised in Table 1.

Table 1: Overview of the database

	Observations (votes × MEPs)	All votes	Economic votes	MEPs	EP size
6th term (2004-2009)	6,022,720	6,380	2,689	944	732 (2004-2006) 785 (2008-2009)
7th term (2009-2014)	5,928,726	6,918	4,031	857	736 (2009-2011) 754/766 (2011-2014)
8th term (2014-2019)	8,249,064	9,682	5,646	852	751
Total	20,200,510	22,980	12,375	2,653	-

4. Methodology

Principal Component Analysis (PCA) is a statistical approach that reduces a multidimensional space to a number of main dimensions, or components, that best summarise it. By inspecting the whole population of votes, it extracts those recurrent patterns –i.e. linear combinations of votes- in MEPs' positioning and describes the share of votes, over the total amount in the sample, captured by each pattern it defines. In other words, it reduces the minimum number of information needed to reflect the maximum information present in our data-matrix. To do so, the PCA model first computes those dimensions where the data has the largest variation, by performing the spectral decomposition of the matrix and identifying those components that explain the most variance within the input space, i.e. the eigenvectors with the largest eigenvalues. PCA hence maps our input vectors into a space with lower-dimensionality, finding n orthogonal dimensions that explain the largest part of the variation in the data. Formally, suppose we have a manifest variable $x = [x_1, x_2, ..., x_d]$, which in our case is the observation of each vote. We would like to map our vector of observations x^n from a d-dimensional space onto y^n of M-dimensional space, where $d > M$. Our vector can be represented as a linear combination of orthonormal vectors (Bishop 1995):

$$x = \sum_{i=1}^{d} z_i u_i$$

With PCA, we are looking for a vector $\hat{x}$, such that:

$$\hat{x} = \sum_{i=1}^{M} z_i u_i + \sum_{i=M+1}^{d} b_i u_i$$

Where the error is given by:

$$x^n - \hat{x}^n = \sum_{i=M+1}^{d} (z_i^n - b_i) u_i$$

PCA reduces the sum of squared errors, minimising the following:

$$E_M = \frac{1}{2} \sum_{n=1}^{N} ||x^n - \hat{x}^n||^2 = \frac{1}{2} \sum_{n=1}^{N} \sum_{i=M+1}^{d} (z_i^n - b_i)^2$$

Based on this procedure, PCA reduces the dimensionality of votes. Virtually, each vote would in fact count for a dimension by itself. In other words, MEPs' behaviour on each vote is best explained by the actual result on the vote itself, meaning that we could virtually count approximately 6,918 dimensions for the 7th EP only, i.e. a number of dimensions equal to the number of votes casted, adding very little to our understanding of how MEPs vote.

To better understand how PCA works, we could rely on an example. Suppose we have a parliament composed of members of German and French nationalities only, who vote on 100 items. Suppose German members vote always in the same way, i.e. when a German abstains, all the other Germans abstain, whereas French members always vote in an opposite way to the Germans, i.e. when all Germans vote in favour, all French vote against. Without PCA, we would count on 100 dimensions, that would provide us no information on the behaviour of the voters. PCA would instead signal that 100% of the votes is explained by the divide between German and French members. Importantly, while the PCA provides us with the percentage of significance and with the allocation of members along the dimension –which in this case would be the Germans and the French equally distant-, it does not provide us with information on the nature of the variable. It is instead our task to understand inductively, by observing legislators' characteristics, that the divide is actually determined by nationality. While in our fictitious example such exercise is trivial, this is not the case when facing the complexity of a real parliament, as heterogeneous as the European one. Determinants of voting behaviour could in fact not only be driven only by nationality, but also by membership to a political group or to national party. Moreover, heterogeneity exists even within national delegation and national parties, due to regional identities, which play a particularly relevant role in the European political landscape (e.g. the case of Catalonia and Scotland), ideological factions within the same party (e.g. the French Parti Socialiste or the Italian Democratic Party) or connections with lobbies and pressure groups. We will hence use PCA to assign a score of relevance to each vote and extract those that are the most determinant for computing each dimension. Running the PCA on our sample of votes for the 8th parliamentary term, provides us with two main dimensions, which combined are able to explain 45.86% of the votes casted between 2014 and 2018. The main dimension is able to explain 26.08% of the votes, whereas the second one 19.6%. In the following section, we will analyse the two components in order to induce their nature.

The main drawback of PCA, however, is the loss of interpretability. As components correspond to a weighted sum of all input variables (also called 'loadings'), their interpretation lies on the subjective judgement of the researcher. To overcome this obstacle, Hix et al. (2018) tested the results of their scaling method against the policy positions of each party according to an external expert survey, the Chapel Hill Experts Survey (CHES). By regressing the policy position estimated in their scaling method against the policy position assigned by CHES experts on (1) pro-/anti-EU and (2) left-right policy positions, together with a number of other control variables (i.e. whether a party is in government or no, whether an MEP is from a certain Member State or region...). Their results are then checked using a number of alternative scaling methods to compute the two dimensions, and by controlling for other proxies of European supports and left-right stances, as the European Social Survey to European voters and the MEP Survey.

In our paper we propose an alternative methodology to tackle the interpretability obstacle inherent in PCA. Rather than relying on external survey, we dig deeper in the nature of the voting behaviour and use PCA to extract the most significant votes in each dimension, to inspect whether they correspond to our hypotheses. Votes-mining have another great advantage in terms of interpretability. While we may tend to consider these dimensions as ideological stances on policy areas, not all votes have the same ideological or practical implications. Some files on which MEPs vote are in fact merely symbolic, as they represent an opinion deprived of actual legislative power. On the contrary, other files have a strong legislative impact, but might have no ideological substance. It is therefore important to scan how the two dimensions are spread across different types of votes.

5. Results: the components of the European Parliament

5.1 Results for the 8th European Parliament (2014-2018)

We first proceed by categorising each MEP by political group.[6] The political groups in the latest European Parliament were eight, and they were all composed by different parties from a number of EU Member States.[7] The main groups were the Christian-Democrat European People's Party (EPP) and the Progressive Alliance of Socialists and Democrats (S&D), which often counted on the support of the Liberals (ALDE), which is the fourth largest group in the EP. The third largest group is the Conservatives' ECR, which gathers the British Tories and the Polish governing party Law and Justice, together with a number of smaller formations. This group is followed by the Greens (Verts/ELA) which includes traditional environmentalist parties along with regionalist parties (e.g. Catalonian Greens) and by the radical left political group (GUE/NGL) which includes parties such as Syriza and the Portuguese Bloco de Esquerda, as well as former communist parties. Strongly Eurosceptic political groups are a minority and they are split across two political groups: Europe of Freedom and Direct Democracy (EFDD) and the Europe of Nations and Freedom (ENF). While the former is mainly composed by MEPs from UKIP and the Italian Five Stars Movement, the latter is a combination of nationalist far-right

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[6] An alternative would be to categorise MEPs by Member State. Interestingly, when we did so, nationality did not explain the location of an MEP across the two dimensions. This result is in line with Marks and Wilson (2000), who argued that "political parties have significantly more in common with parties in the same party family than they do with other parties in the same country" (p. 459).

[7] According to the Rules of Procedure of the European Parliament, each group needs to be formed by at least 25 MEPs, elected in at least one-quarter of the Member States (in the current composition, including the UK, at least 7 countries),

parties, including the French National Rally (Front National), the Dutch Party for Freedom, the Austrian Freedom Party (FPÖ) and the Italian League (Lega).
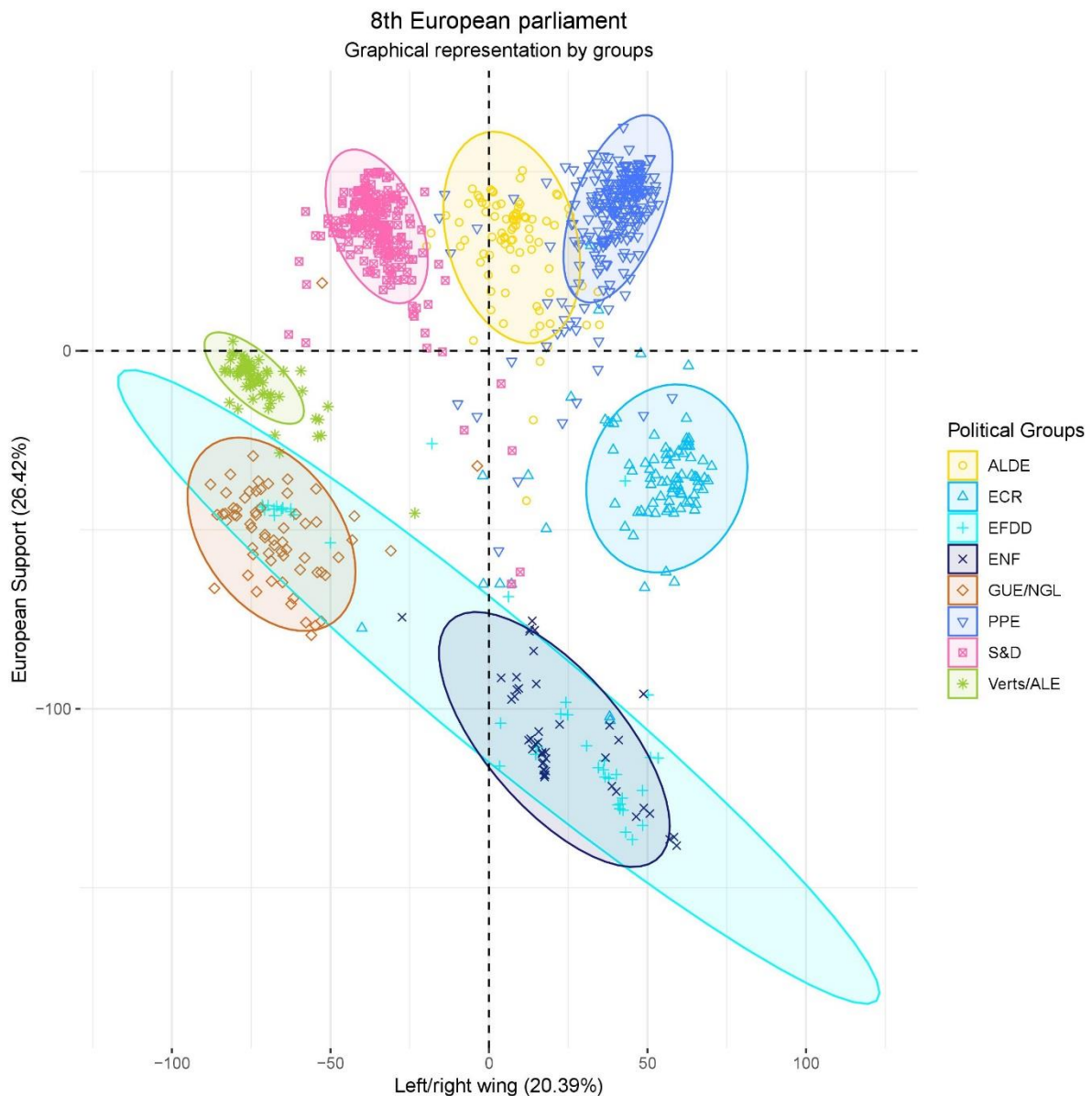
Table 2: Political groups and their size in the 8th EP

Political Group	Seats	% of seats
EPP (Christian-Democrats)	219	29.2
S&D (Socialists)	189	25.2
ECR (Conservatives)	71	9.4
ALDE (Liberals)	68	9.0
Verts/ALE (Greens)	52	6.9
GUE/NGL (Left)	51	6.8
EFDD (Eurosceptics)	44	5.8
ENF (Nationalists)	36	4.8
Non-attached members	20	2.6

Note: data are as of June 2014.

Fig. 1 shows the result of our two dimensions on all plenary votes for the 8th EP once we control for political group membership. The two axes are reference values that indicate the average of the positions on each dimension.[8] The chart is therefore skewed upward, as the majority of MEPs (almost all EPP, S&D and ALDE MEPs) report high values on the first component.

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[8] For this reason, the zero value should not be interpreted as a threshold. Being below zero on the x-axis should not be interpreted as being anti-European, but below the average of pro-European support among all MEPs.
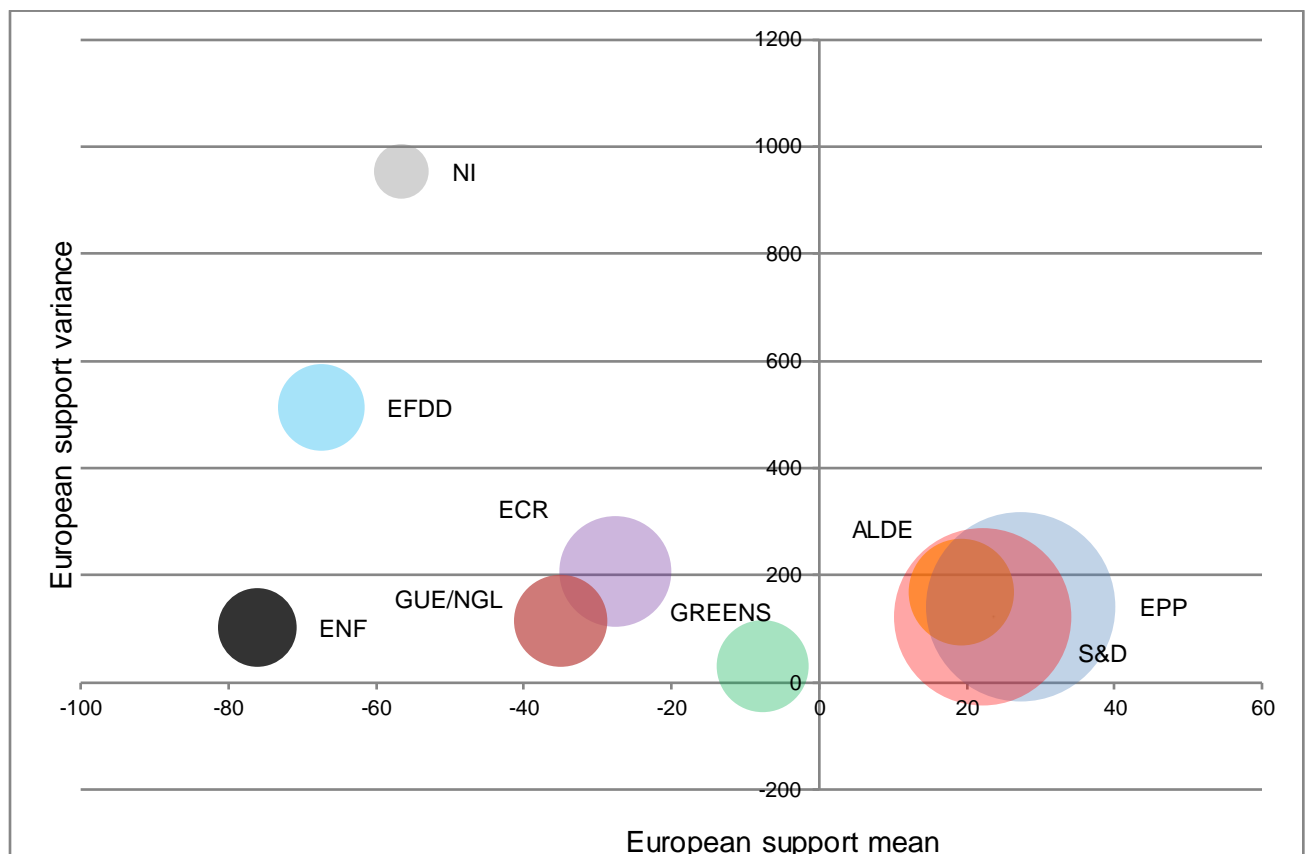
Figure 1

Note: the axes do not represent a threshold above or below which a political group can be considered belonging to one or the other dimension. The 0-values of the axes correspond to the average location across the dimension among all MEPs. The x-axis is located in the upper part of the chart as EPP and S&D MEPs represent more than half of the European Parliament. For convenience, Non-attached MEPs are excluded from the chart.

At a first glance, the first component (values on the y-axis) seems to proxy a pro-/anti-European integration divide, whereas the second dimension (values on the x-axis) the traditional left-right cleavage. Pro-European groups such as EPP, S&D and ALDE are all located in the upper section of the chart, opposite to traditionally Eurosceptic groups, which are located in the lower part. In line with political science theories on Euroscepticism, soft-Eurosceptic groups, like GUE/NGL and ECR, display a less critical stance toward European integration than hard Eurosceptic ones, like EFDD and ENF. The left-right divide can also be identified quite easily. Traditionally left-wing groups are located on the left side of the chart, with the radical left group and the Greens located more toward the left than the social-democrats (S&D). The right-wing spectrum is populated by the Christian-democrats (EPP), the conservatives (ECR) and the nationalists (ENF), while the centrists MEP of ALDE are located in a

space between the left and the right, as we would expect for this dimension. These dimensions would reflect those identified by Hix, Noury and Roland (2018) using the NOMINATE scaling method. In line with their finding, also in our case the European dimension supersedes the left-right dimension.

An additional finding that emerges in Fig. 1 is the degree of political group cohesion, which is approximated by the width of political groups' ellipses. We can clearly see that EPP, S&D, the Greens and ALDE are more compact in their voting behaviour, as their MEPs clustered in similar locations on the chart. On the contrary, political groups like EFDD, ENF, ECR and GUE/NGL display less internal cohesion. EFDD is particularly striking in this regards, as some of its MEPs regularly vote like MEPs from the radical left – they are located in the same space, as the ellipses overlap – whereas others share the same voting behaviour of the far right, with also different degrees of Euroscepticism (being the more Eurosceptic the latter cluster). Interestingly, MEPs located together with radical left parties belong to the Five Stars Movement delegation of EFDD, whereas the rest of the political group, including UKIP, Alternative for Germany (AfD), the Lithuanian Order and Justice and the Czech Party of Free Citizens, belong to the far-right hard Eurosceptic spectrum. Plotting the mean score of each political group on the European support dimension against the within-political group variance, we can clearly notice that EFDD is by large the most dispersed group on such dimension (Fig. 2).

Figure 2: European dimension in the 8th parliamentary term, by political group.

Note: the figure displays on the x-axis average MEPs' scores on the first dimension by political group. More negative scores are associated with a more Eurosceptic (less pro-European) voting behaviour. On the y-axis, it plots the variance by political group, which proxies for the dispersion of MEPs' scores within a group. The size of the bubbles is given by the number of seats of each political group in the 8th European Parliament (as of June 2014). NI is the label for non-attached members.
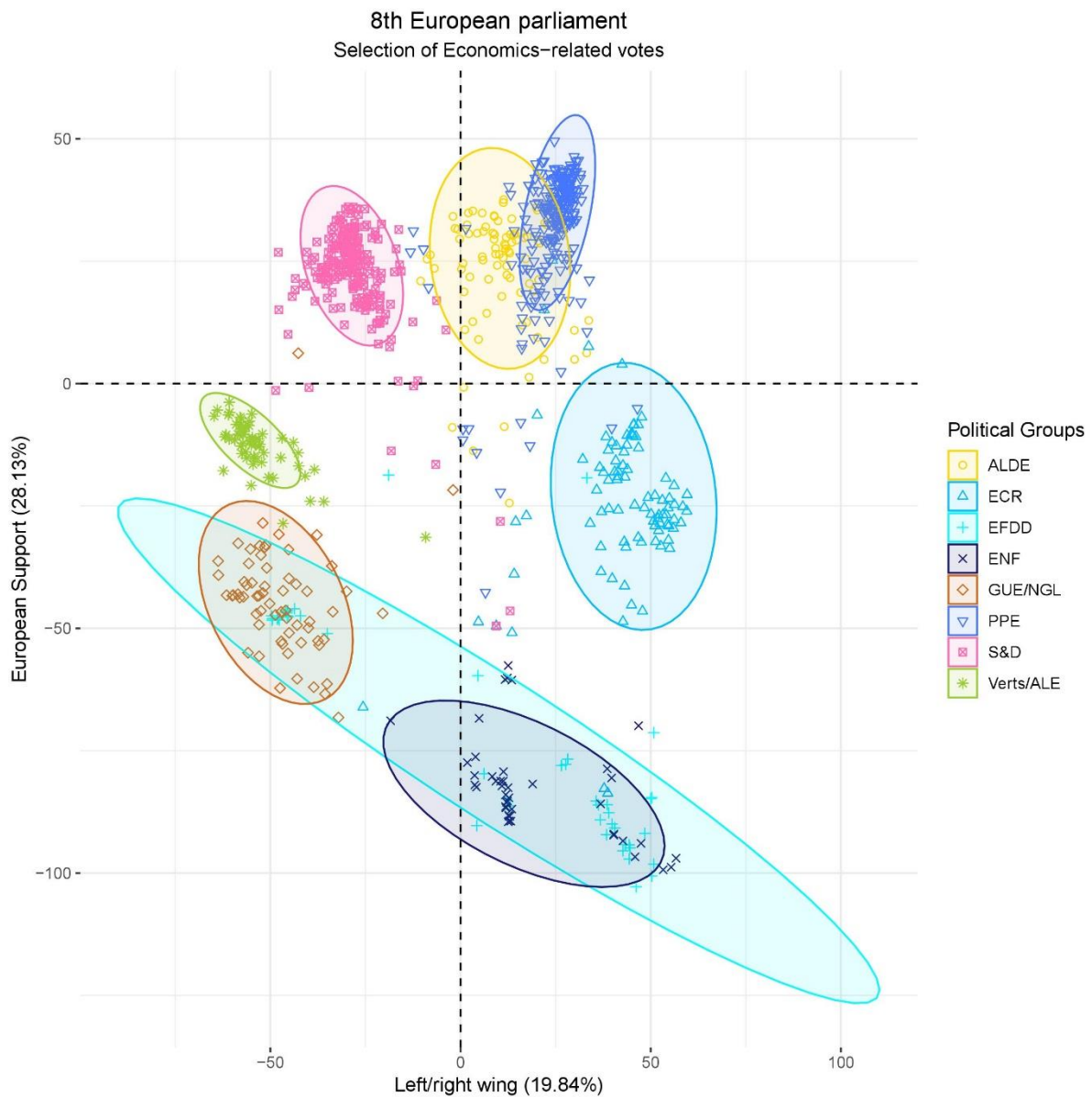
Interestingly, those political groups that display a more Eurosceptic behaviour (lower scores on the first dimension) have also higher variance on such dimension. EFDD is in fact followed by the nationalists (ENF), the Conservatives (ECR) and the radical left (GUE/NGL), that all show higher dispersions than pro-EU groups.

As mentioned before, the association of the first dimension with the pro-/anti-EU conflict is purely based on the observation of MEPs' clustering. However, this observation is not sufficient. Such dimension could in fact proxy a conflict based on those political groups that are more highly represented in EU governments –and therefore in the Council of the EU and the European Council - and in the EU Commission (mainly EPP, S&D and ALDE members) against those that are not. Further analysis is hence needed to assess the nature of this dimension. While previous works have resorted to OLS regression using other sources on policy dimensions (Hix, Noury and Roland 2018), like expert surveys or survey to MEPs, we introduce a new methodology based on votes-scraping. This method has the advantage of not relying on external sources that might be unrelated to the nature of the dimension, but on the same observations on which the dimensions are based. Expert surveys may in fact not be ideal to be compared with voting behaviour. When experts are asked about their opinion on parties' positions on a number of policy areas, they might have in mind a wider range of aspects which may abstract from their voting behaviour in the EP. Moreover, their judgement might be biased toward the national dimension of the political debate rather than the European one. For example, while the Hungarian Fidesz is often regarded by experts as a highly Eurosceptic party, and results therefore very distant from the other parties in its political group, the EPP, its MEPs' voting behaviour does not differ substantially from the one of other EPP MEPs. In the Appendix we plotted the CHES data for 2014/7 for the left-right and European dimensions on parties represented in the 8th EP: we notice that political groups that are highly compact in their voting behaviour, are more dispersed in CHES data.

5.2 Results on Economic Legislation

We proceed by extracting the most significant votes for the two dimensions among the economic legislation, which means reducing our sample to 5,646 votes for the 8th EP. Running the PCA on the subsample of economic votes for the 8th EP, gives us similar results than on the full sample. Fig. 3 shows that the location of political groups is very close to the one of Fig. 1. However, there are some relevant differences that deserve attention. First of all, the European dimension gains relevance when focussing on economic votes, as its explanatory power increase from 26.42% to 28.13%. This comes at the cost for the left-right dimension, whose explanatory power decreases from 20.39% to 19.84%.

Figure 3

Note: PCA over plenary votes related to economic legislation from 2014 to present, by political group.

Secondly, on the European dimension, the Greens, and ECR are closer to the EPP-S&D-ALDE cluster on the top of the chart, signalling a slighter convergence in the voting behaviour on economic votes with respect to all other votes. The more striking differences however concern the left-right axis. On the one hand, Christian-Democrats and Liberal MEPs tend to overlap, differently from the PCA on the full sample, signalling similar views on economic matters among the two groups. ENF members instead are leaning more toward the left-side on economic votes. This finding is in line with the reconfiguration of the economic position of the French Front National, ENF's largest party, which shifted from a right-wing location to a more left-wing egalitarian and nationalist platform (Ivaldi 2015), while maintaining far right stances on other policy issues.

6. Vote-scraping on economic votes

We extract those votes that are more relevant for the first dimension in the 8[9] EP in order to understand whether it corresponds to a pro-/anti-European dimension. One of the top-five most significant votes – over more than two-thousands votes- is on the following amendment tabled by GUE/NGL on the resolution on the framework of the future EU-UK relationships:[9]

10b. *Stresses that any future agreement on economy and trade between UK and EU Member States should take into account the specificities and the interests of different Member States; affirms that each Member State has the right to develop relations with the United Kingdom in a number of areas, in line with its interests - relations based on the principles of mutual interest, friendship between peoples and cooperation between sovereign states;*

The emergence of Brexit as a significant topic within the first dimension already suggests that it might rightly be associated to the pro-/anti-EU debate. Moreover, the content of the amendment is highly political, as it relates to the right for each Member State to develop its relations with the UK independently from the EU. This case specifically highlights the EU-integration debate in its sovereign vs supranational dimension. As this vote was particularly significant for determining the first dimension, we would then expect voters to cluster among two main groups, one represented by EPP, S&D, ALDE and Greens, the other by ENF, EFDD, with ECR, Greens and GUE/NGL either abstaining or allocated partially with one group or the other. In this specific case, the amendment was fully supported by MEPs from GUE/NGL, ECR, EFDD and ENF, together with a number of non-attached members. However, the support of ECR was not full, as its Polish delegation (members of Law and Justice) abstained. On the opposite side, members from EPP, S&D, ALDE and the Greens voted against. This allocation of votes is already highly informative on our first dimension. The tripartite group at the top of the chart voted in a compact way, as depicted in Fig. 3, with the support of the Greens, which is the closest political group in the spectrum. Moreover, the internal split within ECR is a clear signal of the lack of cohesion that characterise the group, which is suggested by the width of its ellipse that is stretched vertically, rather than horizontally, signalling a divide on the EU dimension rather than on left-right stances. Nevertheless, the vote is not fully informative on this dimension. MEPs from GUE/NGL should have a less Eurosceptic stance than other MEPs, whereas here they voted along with ENF and EFDD. We therefore need to further scrape votes to get a clearer idea of the first dimension.

A similar vote from the same resolution features as one of the five most significant for this dimension (also this amendment was tabled by GUE/NGL):

1a. *Recognises the sovereign right of each people to decide their fate of their country, including as regards leaving the EU; considers that this decision must be respected through a negotiation process free of pressure, threats and blackmail;*

Here the sovereign-supranational divide is even starker. Also in this case the amendment was supported by GUE/NGL, ECR, EFDD and ENF, whereas it was opposed by EPP, S&D, ALDE and Greens. In this case, however, fifteen MEPs belonging to GUE/NGL abstained. Combined with the other, this vote is now more informative, as it helps us to understand the reason for which the radical left of GUE/NGL is placed in a middle way on the x-axis. A third vote among the top-five was on the full text of the Resolution of the European Central Bank Annual Report for 2016,[10] which took place on 6 February

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[9] Legislative file reference number: 2018/2573 RSP.

[10] The code for the legislative file is 2017/2124(INI). Votes on single amendments and on the final text can be seen at this link.

2018. Such document represents an assessment by MEPs to the ECB Annual Report. MEPs use such file to express their support or their opposition to the ECB's decisions and assessment of the economic situation. As amendments are voted by the whole plenary, the final text as amended generally reflects the view of the groups in majority which, according to our hypothesis, are generally supportive toward the EU integration. In this vote, EPP, S&D, ALDE and Greens voted in favour, ENF and EFDD voted against. ECR was once again split, as 13 of its members voted against, whereas 54 abstained. In the case of GUE/NGL the split was more balanced, even if a slight majority (26 members) voted against, whereas the other abstained (19 members). Interestingly, two members of ECR, one of GUE/NGL and one of EFDD voted in favour of the Report, whereas three MEPs from ALDE voted against. The majority of GUE/NGL voted together with MEPs from EPP, S&D, Greens and ALDE against the following amendment on the budgetary procedure for the financial year 2018:[11]

Condemns the 2018's augmentation of the appropriations for the funding of European political parties and European political foundations, reaching a global amount of EUR 51.770.000, which represents an increase of more than 250% as compared to 2008;

The amendment was instead supported by the Eurosceptic front of EFDD, ENF and ECR. However, some ten members of GUE/NGL voted in favour of the amendment, whereas also in this case, the Polish delegation of ECR abstained.

The cases of the radical left (GUE/NGL) and of the conservatives are particularly interesting for the definition of the first dimension. Our initial hypothesis was that this dimension could represent a pro-/anti-EU integration cleavage. The most significant votes seemed to confirm our hypothesis as they are linked to highly controversial issues related to EU integration. However, we know that this cleavage, like any other, is not a binary option, i.e. a political group is either pro- or anti-EU integration, but there exist different degrees of support. In this sense, any dimension should be interpreted as a continuum between two extremes rather than a binary option. This subtle distinction is particularly helpful to check the robustness of our measure. The literature in fact distinguishes between 'soft' and 'hard' Euroscepticism. Sczerbiak and Taggart (2001; 2008, p. 2) defined a party as Hard Eurosceptic:

When there is a principled opposition to the EU and European integration and therefore can be seen in parties who think that their countries should withdraw from their membership, or whose policies towards the EU are tantamount to being opposed to the whole project of European integration as it is currently conceived.

Whereas they defined a party Soft Eurosceptic:

When there is NOT a principled objection to European integration or EU membership but where concerns on one (or a number) of policy areas lead to the expression of qualified opposition to the EU, or where there is a sense that 'national interest' is currently at odds with the EU trajectory.

Departing from these definitions, scholars attempted to allocate Eurosceptic parties in one of the two subsets.[12] While the literature has mainly categorised parties rather than political groups, they fairly

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[11] Full name of the report: on Parliament's estimates of revenue and expenditure for the financial year 2018, 2017/2022(BUD). The full document can be consulted at this link.

[12] For example, Katz (2008) proposed a measure of Euroscepticism based on the survey responses of MEPs and of MPs in eleven national parliaments in 1996. Kopecky and Mudde (2002) criticised this categorisation, arguing that as the demarcation line between hard and soft Eurosceptic is blurred. As the difference is based on which policies each Eurosceptic party opposes, then it is not clear how many of such policies must it oppose to be regarded as hard or soft Eurosceptic. They therefore proposed an alternative categorisation based on the

agreed that political groups as ECR and GUE/NGL can be defined as soft Eurosceptic (Crespy and Verschueren 2009; Whitaker and Lynch 2014; Bertoncini and Koenig 2014), being hence located somewhat in a middle-way between pro-European and Hard Eurosceptic. This further confirms our hypothesis that the first dimension proxies a pro-/anti-EU cleavage.

Concerning the left-right dimension, one of the most significant votes is on the following amendment, tabled by GUE/NGL:

25a. *Believes that a break with the current EU policies is necessary if the problems of sustainable economic growth, unemployment, poverty, social exclusion and inequality (mainly in income) are to be truly resolved; stresses that a new strategy is needed to establish a new direction for Europe, that is, a path to full employment, decent jobs, living wages, social and economic cohesion and social protection for all, guaranteeing the highest living standards; stresses that this path should pay heeds to the development needs of each Member State, in particular the least developed countries, favouring real convergence so as to help reduce development gap between Member States and existing economic, social and regional disparities*

This amendment to the General guidelines for the preparation of the 2018 budget[13] was supported by GUE/NGL, the socialists of S&D, the Greens and MEPs from the Five Stars Movement whom, as we showed, tend to vote more similarly to GUE/NGL than to their own political group, EFDD. Other MEPs from EFDD, in fact, abstained from the vote. The amendment was contrasted by parties that are generally associated to a right-wing economic stance, namely the Christian-Democrats of EPP, the liberals of ALDE, the conservatives of ECR and the nationalists of ENF. A similar disposition can be found on the following vote on the Report on the European Semester for economic policy coordination – Employment and Social Aspects in the Annual Growth Survey 2017:[14]

27. *Calls for policies that respect and promote collective bargaining and its coverage in order to reach as many workers as possible while at the same time also aiming at better wage floors* in the form of minimum wages set at decent levels *and with the involvement of social partners,* all this with a view to *ending the competitive wage race to the bottom,* supporting aggregate demand and economic recovery, reducing wage inequalities and fighting in-work poverty;

27. *Recalls that decent wages are important not only for social cohesion, but also for maintaining a strong economy and a productive labour force; calls on the Commission and the Member States to implement measures to improve job quality and reduce wage dispersion, including by raising wage floors also* in the form of, *where applicable*, minimum wages set at decent levels; *calls, in this context, for policies that respect, promote and strengthen collective bargaining and the workers' position in wage-setting systems which play a critical role in*

differentiation between `diffuse' and `specific' support for European integration. `Diffuse' support means "support for the general ideas of European integration", whereas `specific' refers to "support for the general practice of European integration" (Kopecky and Mudde 2002). Parties can therefore be allocated in a two-by-two matrix structured along Europhobe/Europhile and EU-optimist and EU-pessimist axes, generating four different categories: Euroenthusiasts who embrace both the ideas and general practice of EU integration, Eurorejects who are against both, Eurosceptics who support the general idea of Europe but are against the general practice of integration and finally Europragmatists who are against the idea of the EU but support the practice of EU integration.

[13] Section III of file 2016/2323(BUD).
[14] File 2016/2307(INI).

achieving high-level working conditions, believes that all this *should be done* with a view to supporting aggregate demand, and economic recovery, reducing wage inequalities and fighting in-work poverty; *stresses in this context, that European legislation and policies must respect trade union rights and freedom, comply with collective agreements and uphold equal treatment of workers;*

The text on the left represents the original text in the report, whereas the part on the right represents the amended version tabled by GUE/NGL. The text in bold and italics is the one that has been modified (on the right) and proposed as modification (on the left). Also in this case the amendment was supported by the socialists (S&D) and the radical left (GUE/NGL) together with the Greens and the Five Stars Movement, whereas it was opposed by the EPP, ECR, ALDE and the whole EFDD without the Five Stars Movement. Interestingly, ENF MEPs abstained, which explains their mid-location we highlighted in the previous section, which is also emphasised on economic issues.

The issue on whether these cleavages could be regarded as ideological divides or not remains however unresolved. While these votes seem all highly ideological, this might be driven by the fact that we selected only the most significant ones. However, we need to shift from a micro- to a macro-perspective to understand whether this is the case, and analyse the samples as a whole.

6.1 Are these dimensions ideological?

We proceeded by inspecting the nature of the votes that characterised both dimensions. The EP distinguishes among a number of different types of legislative files. By focussing on economic votes, we can draw on seven main categories:

- Budgetary procedures (BUD): the EP has relevant legal power as, if it rejects the file, the Commission must resubmit a new draft budget.[15]

- Ordinary legislative procedures (COD): the EP has relevant legal power. If the EP rejects, the file goes back and forth between the EP and the Council on an equal footing, with the difference that the Council cannot put forward amendments.

- Consultation procedures (CNS): the EP has no relevant legal power on these files, but more a consulting role. The EP can in fact table amendments, but the Council can decide whether to accept or not those amendments.

- Discharge procedures (DEC) represents the EP's "final approval on how the EU budget for a specific year has been implemented" (European Parliament 2015). MEPs have the power to refuse or postpone a discharge, forcing the EU institution or agency to act on the recommendation of the budgetary control committee. Therefore the vote of the EP has relevant practical implications. In 1998 the refusal by MEPs to discharge the European Commission led by Jacques Santer ultimately led to the resignation of the Commission (Ibid.).
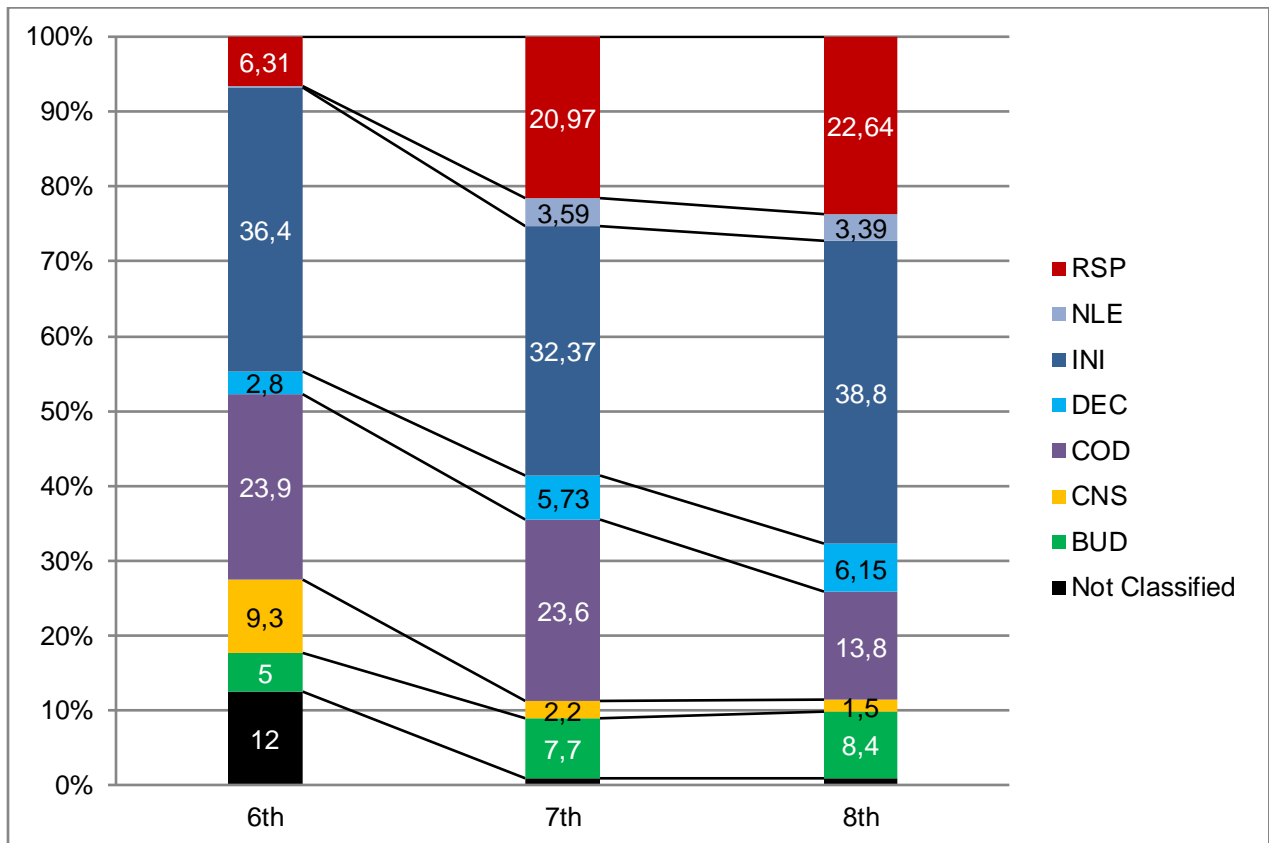
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[15] For more details on the historical development of budgetary procedures see here.

- Own-initiative procedures/reports (INI) are used by the EP to ask the Commission to submit a proposal, but the Commission can refuse to do so. For this reason, they might have strong ideological content but low legal power. In line with this, the European Parliament describes the function of own-initiative reports as to "pave the way for new legislative proposals, exploring diverse topics of interest to Members, responding to Commission communications, and expressing Parliament's position on different aspects of European integration."[16] Examples of own-initiative procedures are the European Parliament's resolution on the European Central Bank Annual Report, where each year MEPs express their opinion, support and disagreement on the policy choices the central bank outlined in its report.

- Non-legislative enactments (NLE) have real power on secondary legislation together with the Council (e.g. Lamfalussy procedure to establish secondary legislation for acts on financial and monetary affairs).

- Resolutions on topical subjects (RSP) are not binding and are used to express a political will on a given policy area. For this reason their content is likely to be highly ideological, but with low legislative impact (the examples on Brexit in the vote scraping section belonged to this category).

While an analysis of the evolution of these typologies and its determinants goes beyond the topic of this paper, it is useful to have an overview of their development throughout the crisis. Figure 4 shows the change in the shares of these categories over the subsample of economic legislative files since 2004. We can notice that while some categories remained generally stable, like own-initiative and budgetary procedures, others experienced some changes. In particular, resolutions on topical subjects increased their share substantially from the 6th to the 7th EP, to then augment their size only slightly in the 8th EP. On the contrary, ordinary legislative procedures and consultation procedures reduced their share, the former from the 7th EP to the 8th, the latter from the 6th to the 7th.

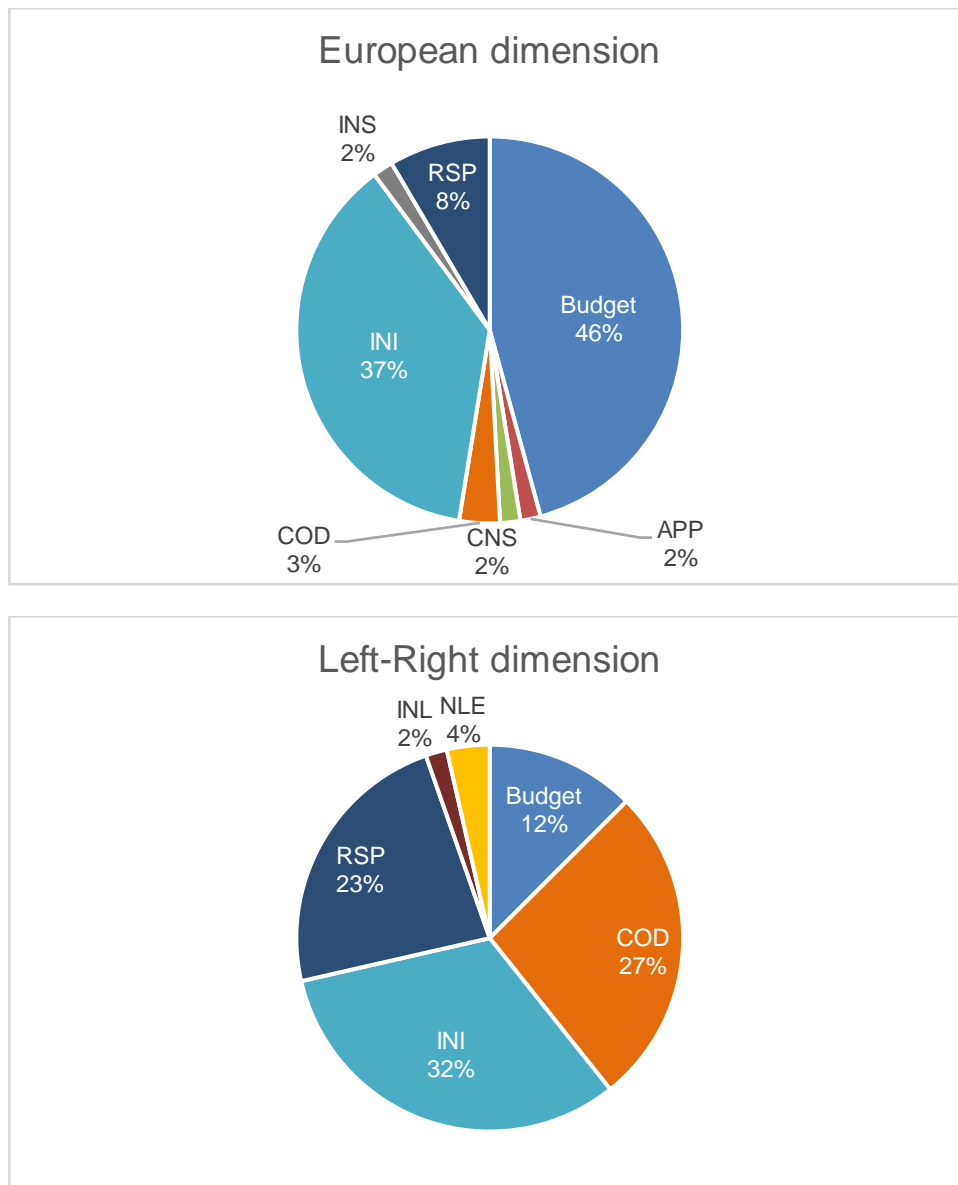
[16] See at this link for further description.

Figure 4. Evolution of vote typologies on economic legislation, 2004-2018, by EP term.

Note: the chart shows the evolution of types of legislative files for economic votes for the 6th (2004-2009), 7th (2009-2014) and 8th (2014-2019) parliamentary terms. The reference codes are the official ones used by the European Parliament and correspond to Resolutions on topical subjects (RSP), Non-legislative enactments (NLE), Own-initiative procedures (INI), Discharge procedures (DEC), Ordinary legislative procedures (COD), Consultation procedures (CNS), Budgetary procedures (BUD). The numbers displayed in the sections are percentages over the sample of economic votes.

In order to answer our research question, we need to investigate the distribution of these categories over the relevant votes for the pro-/anti-EU and the left-right dimensions. To do so, we decompose the votes related to each dimension by their vote typology, and inspect whether each of them is characterised by highly ideological votes or not. Figure 5 shows such distribution for the economic votes of the 8th European Parliament.

Figure 5. Share of economic votes typologies on European and Left-right dimensions' subsamples, 8th European Parliament

Note: the category "Budget" combines both votes on budgetary (BUD) and discharge (DEC) procedures.

While own-initiative procedures (INI) account for a relevant –and similar- share in both subsamples (37% for the European dimension, 32% for the left-right dimension), in line with percentages shown in Fig. 4, votes clearly display a different distribution for the European and the left-right dimension. The European dimension is strongly dominated by budgetary votes: budgetary and discharge procedures account for 46% of the votes composing the dimension. Votes on files characterised by high ideological content and little legislative impact are only a small share of this dimension: resolutions on topical subjects account for 8% of these votes. On the contrary, resolutions on topical subjects play a crucial role on the left-right dimension, as they represent the third more frequent type of legislative file after own-initiative procedures. From these observations, we can infer two main points.

First of all, the left-right dimension has a stronger ideological content, but lower budgetary impact, than the European dimension. Its composition consists for 55% of own-initiative procedures and resolutions on topical subjects, that are generally used by MEPs to channel strong political messages, but are however unlikely to have binding effects. In this regard, it is particularly interesting that the significant votes scraped for such dimension were related to the issues of employment and labour market policies, where the EP has limited powers, since these policy areas mainly rest in the hands of national parliaments and governments. It is however relevant to notice that ordinary legislative procedures, which do have a relevant and binding impact on legislation, are the second category for the left-right dimension, accounting for 27% of the votes.
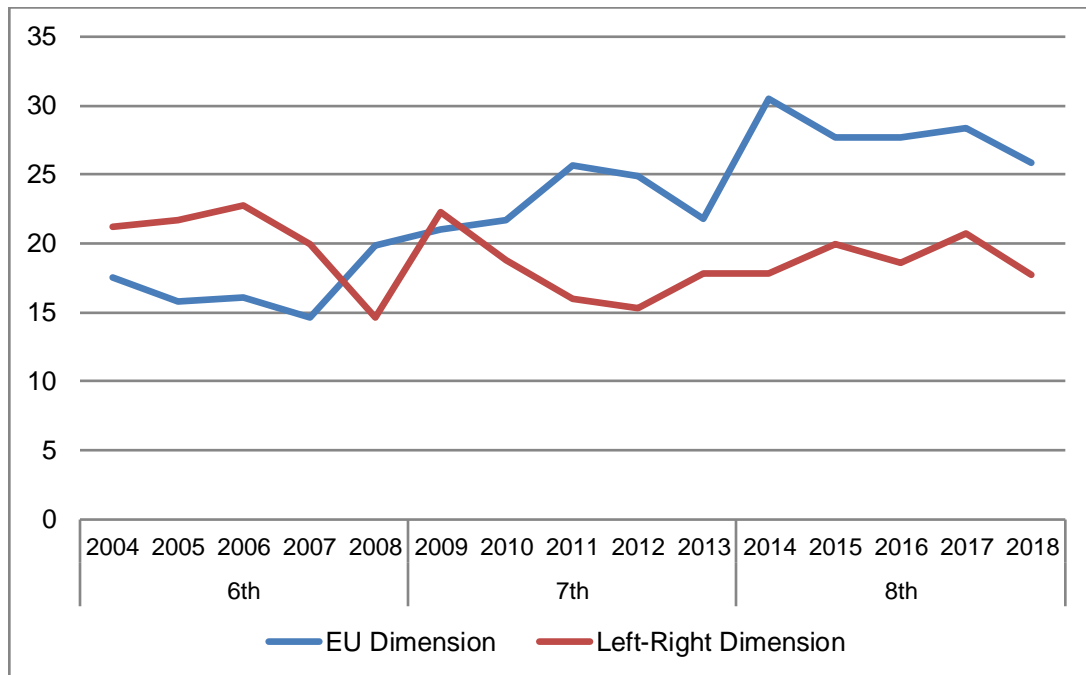
Secondly, the budgetary nature of the first dimension makes its ideological content less clear and less direct. Our results show that the European dimension differs substantially in its composition from the left-right dimension. According to our finding, the European dimension on economic votes is in fact associated to a conflict around the economic-budgetary expansion of EU institutions, rather than to an ideological debate over the nature of European integration. In such diatribe, political groups as EPP, S&D, ALDE, and Greens tend to support budgetary expansion at EU level, whereas this is contrasted by groups such as ENF and EFDD. ECR and GUE/NGL MEPs occupy a position in between, joining occasionally one or the other front. However, this does not mean that budgetary votes have no ideological content. For example, the budgetary vote on the funding of European political parties and foundations we scraped in the vote-scraping section cannot be easily ruled out as non-ideological. While the content of the amendment has practical budgetary implications, i.e. to contrast the augmentation of the funding, MEPs voting choices on this instance could well be driven by an ideological anti-EU stance.[17]

7. Evolution of the European Parliament components (2004-2018)

In order to assess the impact of the crisis on ideology, this section inspects how the two dimensions evolved over time and how the crisis impacted on such evolution. We computed the PCA scores by year and inspected for each year the allocation of political groups on the two dimensions, in order to detect whether they corresponded to the European or left-right cleavage. Figure 6 displays the results. In line with previous findings (Noury 2002, Hix et al. 2006), the traditional left-right cleavage was the main dimension in the pre-crisis period. However, it was superseded by the European dimension in 2008, exactly at the outburst of the crisis. Interestingly, MEPs voting behaviour did not stabilise immediately along these new hierarchy: in 2009 the left-right dimension was again the most prominent one, even if almost at an equal degree of the European. As the financial crisis spilled over Europe in the form of the sovereign debt crisis in 2010, the European dimension became again the most contentious issue, gaining further explanatory power in 2011 and reaching its peak in 2014, when the European dimension was able to explain 30.54% of the full population of votes. In 2015, the year of the Greek bailout referendum and of the beginning of the European migration crisis, the primacy of the European dimension over the left-right divide is stabilised.

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[17] A purely interests-driven interpretation of this phenomenon could be that the EP shares a similar behaviour to the one described for the Commission by Ellinas and Suleiman (2011). According to them, the Commission acts in a way to facilitate its preservation and expansion of administrative tasks.
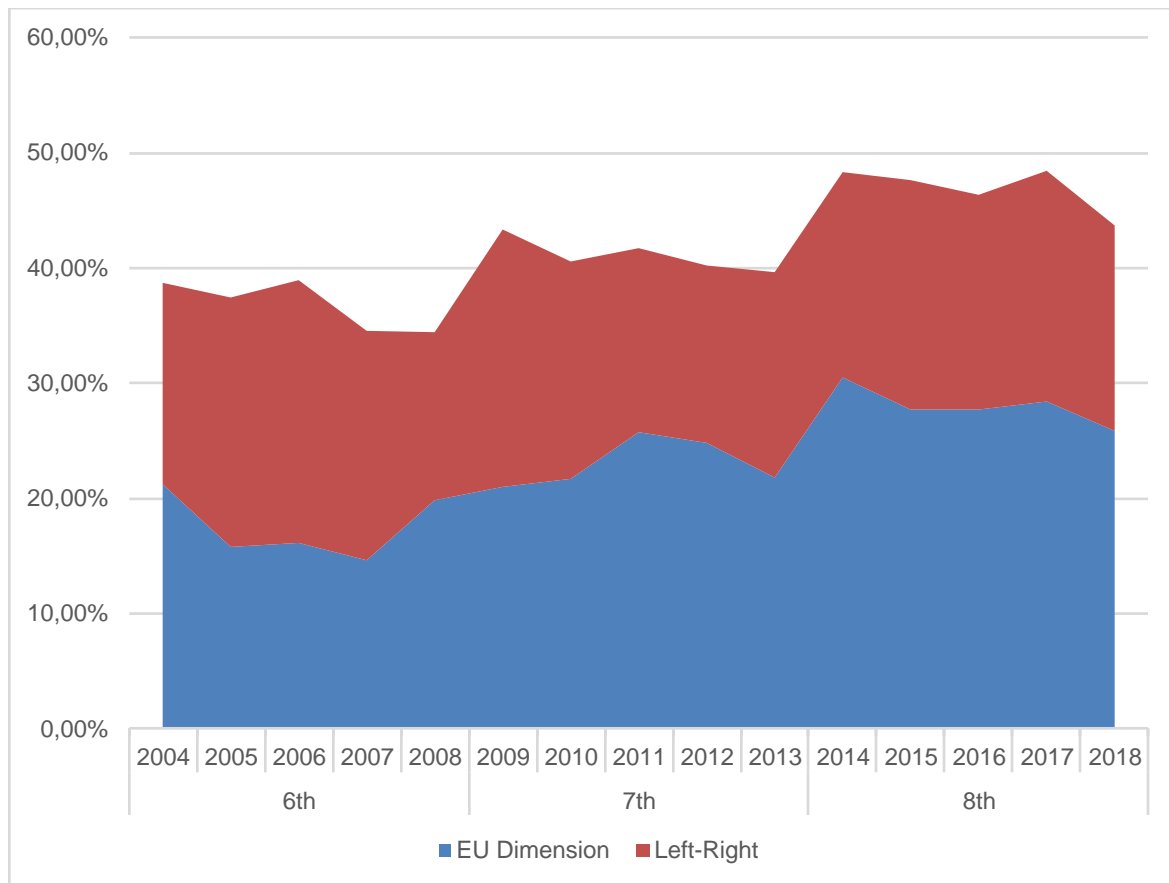
Figure 6: Evolution of European Parliament dimensions on economic subjects, 2004-2018

Note: the chart shows the evolution of the two dimensions from 2004 to 2018, subdivided by EP terms. It is important to notice that the subdivision in terms is slightly arbitrary for the years on which the terms switch, namely 2009 and 2014, as parliaments overlap given that elections took place in the middle of the years, namely on 4-7 June 2009 and on 22-25 May 2014.

While initially the increase of the European dimension was accompanied by a specular decrease of the left-right dimension, this specular movement was inverted in 2013. Since then, both dimensions started to increase together, meaning that a higher number of votes could be explained by that. This can be better visualised in Fig. 7, which shows the joint explanatory power of the two dimensions against the full population of economic votes. It is clear that both the European dimension and the left-right dimension explained a higher share of votes since the beginning of the crisis in 2007. Moreover, since 2013 the two dimensions jointly explained almost half of the economic votes casted in the EP.

Figure 7: Evolution of the joint explanatory power of the European Parliament dimensions on economic subjects, 2004-2018

Conclusions

As the elections of the 9th European Parliament (2019-2024) are approaching, old and new parties are considering the possibility of new transnational coalitions able to combine their stances both on European integration and on the left-right spectrum. The rise of Eurosceptic parties in recent national elections suggests that support for European integration will likely be a stronger determinant for the formation of future coalitions (Chopin et al. 2019). In light of these considerations, it is relevant to understand how those parties represented in the European Parliament have behaved so far in their voting behaviour, arguably the most impactful tool at their disposal, and how these were affected by the crisis. This paper aimed to provide new preliminary evidence on this element by looking at new data on MEPs' actual voting choices in the last 15 years.

It found that with the crisis MEPs changed their voting behaviour, moving from coalitions based on the traditional left-right divide to coalitions built on a pro-/anti-European integration dividing line. This shift became particularly accentuated once the financial crisis spilled over the European sovereign debt crisis in 2010. This change was reflected also in economic votes, where however both dimensions increasingly gained explanatory power throughout the crisis. In addition, it proved that the two dimensions differ substantially in their ideological content. While the left-right dimension is mainly spread across legislative files with low binding power and less direct economic implications, the European dimension becomes relevant for legislation mostly related to EU institutions' budgetary

expansion. Our results however show that the left-right dimension played a relatively important role for some binding legislation: a significant share of this dimension was in fact explained by ordinary legislative procedures. Further research is needed to explore the policy areas covered by these legislative files.

While these results enhance our understanding of MEPs' voting behaviour and of their reaction during the crisis, their explanatory power is still relatively limited. The combination of the two dimensions is in fact able to account for a share of votes between 40 and 50 per cent, with different values across the years. The rest of the votes (on average, 53% in 2014-2018) cannot therefore be captured by the two dimensions extracted by our PCA. As we tried to extract additional dimensions beyond the two principal ones, the interpretability of the results became unclear, even when looking at both political group and Member States membership, and their explanatory power very limited (below 5%). In other words, there exists a substantial share of votes casted in the European Parliament whose underlying coalitions still remain to be understood. Further research on these "unveiled" votes is warranted.
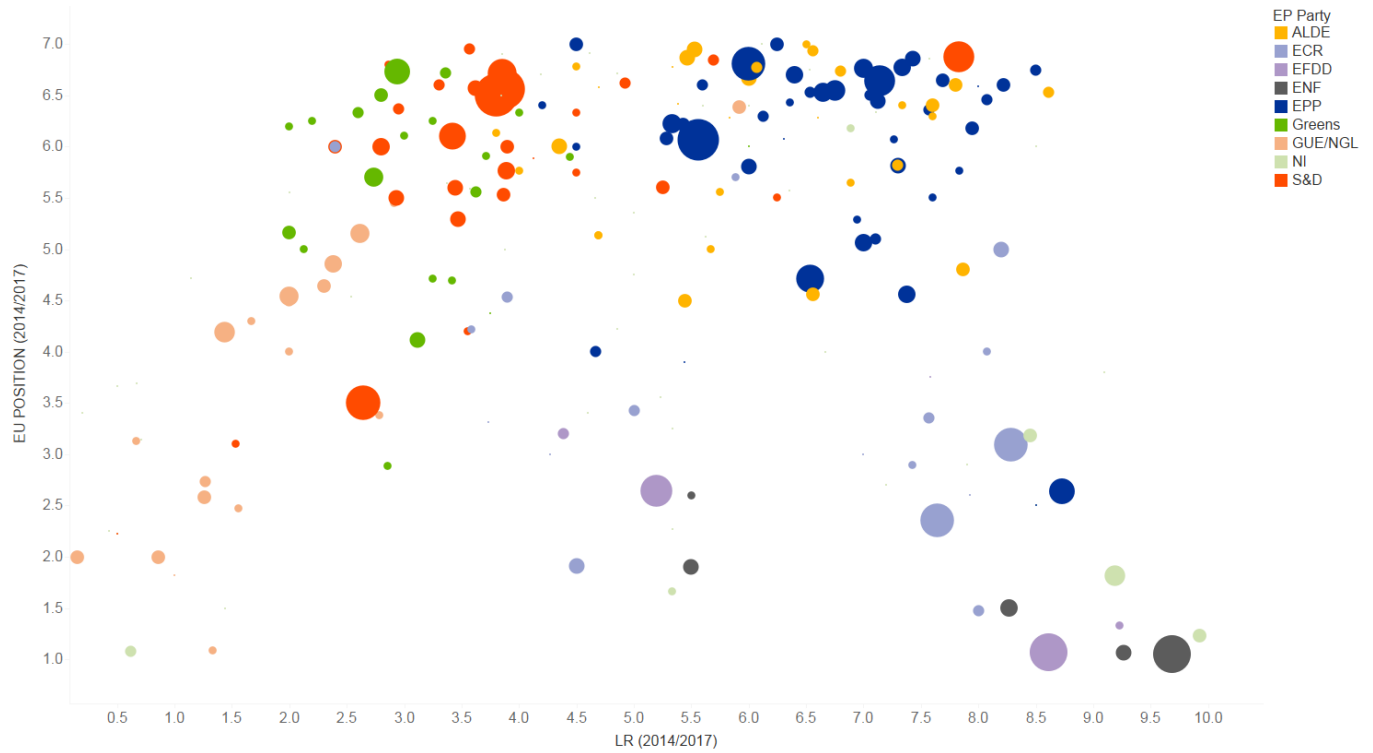
References

Attina, F. 'The voting behaviour of the European Parliament members and the problem of the Europarties', *European Journal of Political Research*, 18(5), September 1990, 557-579.

Bertoncini, Y. and N. Koenig (2014) 'Euroscepticism or Europhobia: Voice vs. Exit?', Jacques Delors Institute Policy Paper 121, 27 November 2014.

Bishop, C.M. (1995) *Neural Networks for Pattern Recognition*, Clarendon Press.

Bobbio, N. (1994) *Left and Right*, The University of Chicago Press.

Blumenau, J. and B.E. Lauderdale (2018) 'Never let a good crisis go to waste: Agenda setting and legislative voting in response to the EU crisis', *Journal of Politics*, 80.

Chopin, T., N. Fraccaroli, N. Hernborg, J-F. Jamet (2019) 'The Battle for Europe's Future: Political Cleavages and the Balance of Power ahead of the European Parliament Elections', Jacques Delors Institute – Notre Europe, *forthcoming*.

Converse, P.E. (1964) 'The Nature of Belief Systems in Mass Publics' in D.E. Apter (ed.) *Ideology and Discontent*, New York: Free Press.

Crespy, A. and N. Verschueren (2009) 'From Euroscepticism to Resistance to European Integration: An Interdisciplinary Perspective', *Perspective on European Politics and Society*, 10(3).

Ellinas, A.A. and E.N. Suleiman (2011) 'Supranationalism in a Transnational Bureaucracy: The Case of the European Commission', *Journal of Common Market Studies*, 49(5), 923-47.

European Parliament (2015) *Discharge procedure: how Parliament scrutinises the EU budget*, European Parliament website, 28 April 2015.

Hinich, M.J. and W. Pollard (1982) 'A New Approach to the Spatial Theory of Electoral Competition', *American Journal of Political Science*, 25(2), 323-341.

Hix, S. (1999) 'Dimensions and Alignments in European Union Politics: Cognitive Constraints and Partisan Responses', *European Journal of Political Research*, 35(1), 69–106.

Hix, S., A. Noury, G. Roland (2006) 'Dimension of Politics in the European Parliament', *American Journal of Political Science*, vol. 50(2), 494-520.

Hix, S., A. Noury, G. Roland (2007) *Democratic politics in the European Parliament*, Cambridge: Cambridge University Press.

Hix, S., A. Noury, G. Roland (2009) 'Voting Patterns and Alliance Formation in the European Parliament', *Philosophical Transactions of the Royal Society*, 364, 821-831.

Hix, S., A. Noury, G. Roland (2018) 'Changing Political Cleavages in Advanced Democracies: Evidence from the European Parliament', draft presented at the 25th World Congress of Political Science - IPSA, 14 July 2018.

Hooghe, L., G. Marks and C.J. Wilson (2002). 'Does Left/right Structure Party Positions on European Integration?' *Comparative Political Studies*, 35(8), 965–89.

Hooghe, L. and G. Marks (2017) 'Cleavage theory meets Europe's crises: Lipset, Rokkan, and the transnational cleavage', *Journal of European Public Policy*, vol. 25(1), 109-135.

Ivaldi, G. (2015) 'Towards the median economic crisis voter? The new leftist economic agenda of the Front National in France', *French Politics*, 13(4), December 2015, 346-369.

Katz, R.S. (2008) 'Euroscepticism in Parliament: A Comparative Analysis of the European and National Parliaments', in A. Szczerbiak and P. Taggart (eds.) *Opposing Europe? The Comparative Party Politics of Euroscepticism*, Vol. 1, Oxford University Press.

Kopecky, P. and C. Mudde (2002) 'The Two Sides of Euroscepticism. Party Positions on European Integration in East Central Europe', *European Union Politics*, 1 September 2002.

Kriesi, H., E. Grande, R. Lachat, M. Dolezal, S. Bornischer, T. Frey (2008) *West European Politics in the Age of Globalization*, Cambridge University Press.

Lipset, S.M. and S. Rokkan (1967) *Party systems and voter alignments: cross-national perspectives*, Toronto: The Free Press.

Marks, G. and C. Wilson (2000) 'The Past in the Present: A Cleavage Theory of Party Response to European Integration', *British Journal of Political Science*, 30(3), 433-459.

Noury, A.G. (2002) 'Ideology, Nationality and Euro-Parliamentarians', European Union Politics, March 2002.

Poole, K.T., and H. Rosenthal (1985) 'A Spatial Model for Legislative Roll Call Analysis' *American Journal of Political Science*, 29, 357-384.

Poole, K.T. and H. Rosenthal (1997) *Congress: A political-economy history of roll call voting*, Oxford: Oxford University Press.

Poole, K.T. and H. Rosenthal (2001) 'D-Nominate after 10 Years: A Comparative Update to Congress: A Political Economy History of Roll-Call Voting', *Legislative Studies Quarterly*, 26(1), 5-29.

Sternell, Z. (1983) *Neither Right Nor Left: Fascist Ideology in France*, Princeton University Press.

Szczerbiak, A. and P. Taggart (2008) *Opposing Europe? The Comparative Party Politics of Euroscepticism*, Vol. 1, Oxford University Press.

Van der Eijk, C. and M.N. Franklin (2004) 'Potential for Contestation on European Matters at National Elections in Europe', in G. Marks and M.R. Steenbergen (ed.s) *European References Integration and Political Conflict*, Cambridge: Cambridge University Press, pp. 32–50.

Whitaker, R. and P. Lynch (2014) 'Understanding the formation and actions of Eurosceptic groups in the European Parliament: pragmatism, principles and publicity', *Government and Opposition*, 49(2), 232-63.
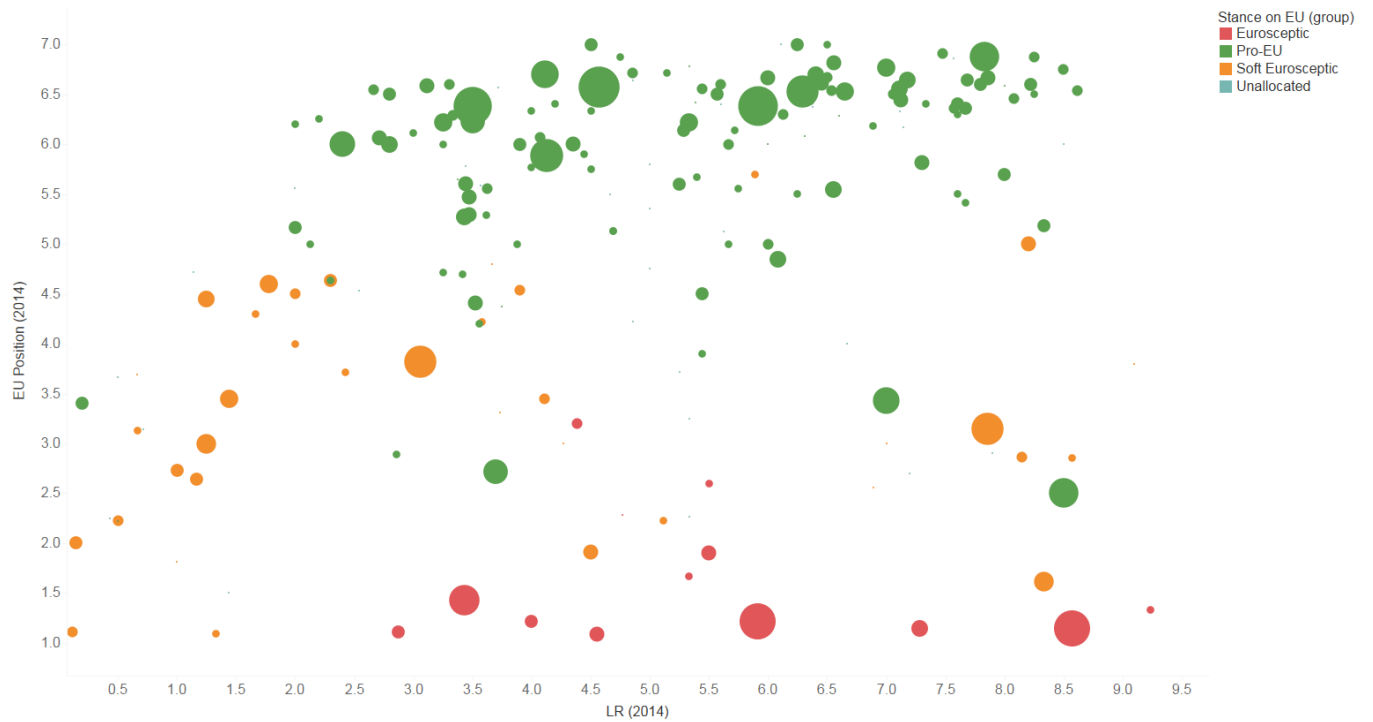
Appendix

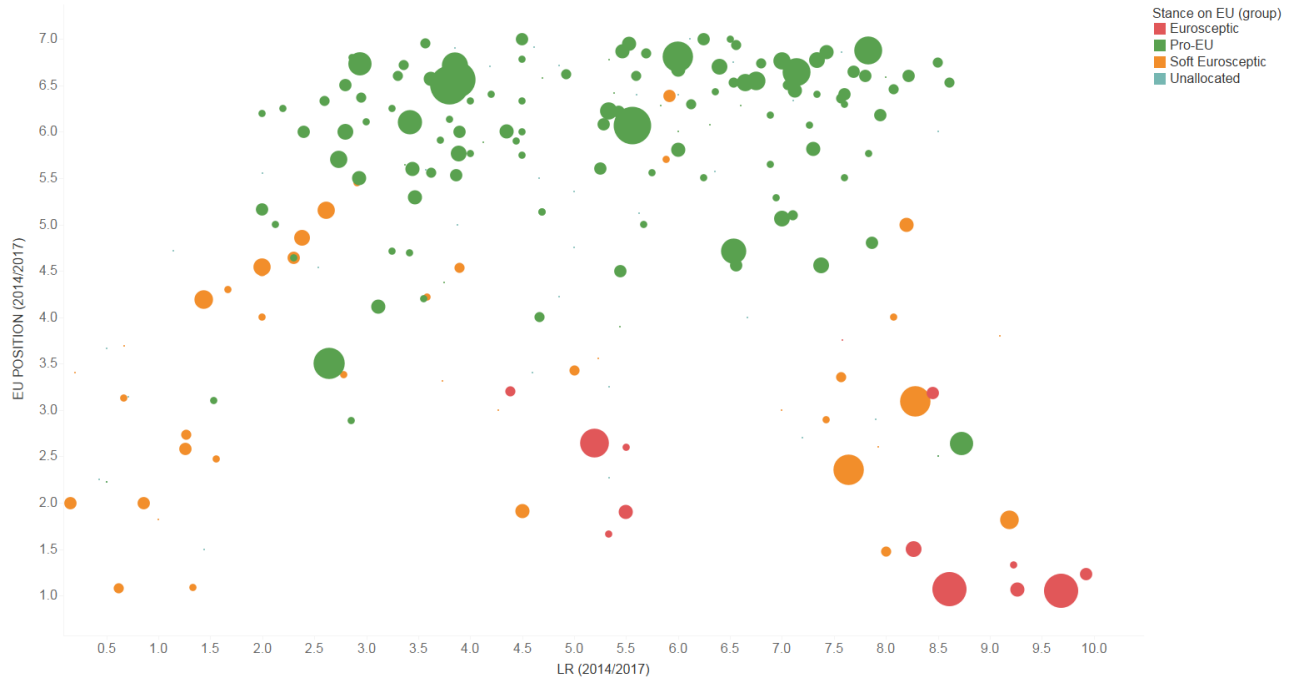## Composition of Parliament - CHES Data

Note: the chart displays European parties the Left-right dimension (x-axis) and the European dimension (y-axis) according to CHES data scores. Each party is coloured according to its political group membership. The size of dots corresponds to the size of parties in terms of number of seats. CHES data refer to the 2017 survey round and, when not available, to the 2014 survey round.

Composition of Parliament - CHES Data 2014

Composition of Parliament - CHES Data

Subsamples of economic votes, by parliamentary term

We selected economic votes based on their belonging to specific committees or based on the type of the file. For example, all files under the Economic of Monetary Affairs Committee are regarded as economic legislation. On the other hand, for votes in committees where the economic content of the policy area is less straightforward we selected legislative files on a one-by-one basis.

	8th	7th	6th
	'2016 budget' 'Agro-genetics, GMOs' 'Agreements and relations in the context of the World Trade Organization (WTO)' 'Agricultural production, farm surpluses, shortages and quotas, non-marketing premiums' 'Arrangement of working time, work schedules' 'Air transport agreements and cooperation' 'Air transport and air freight' 'Animal and vegetable fats, oils' 'Banks and credit' 'Bilateral economic and trade	'Action to combat economic fraud', ... 'Agreements and relations in the context of the World Trade Organization (WTO)', ... 'Agricultural policy and economies', ... 'Agricultural production, farm surpluses, shortages and quotas, non-marketing premiums', ... 'Agricultural structures and holdings, farmers', ... 'Bilateral economic and trade agreements and relations', ... 'Budget of the Union', ... 'Committee on Agriculture and Rural Development', ... 'Committee on Budgetary Control', ...	'Air transport and air freight', ... 'Arrangement of working time, work schedules', ... 'Banks and credit', ... 'Bilateral economic and trade agreements and relations', ... 'Budget of the Union', ... 'Chemical industry, fertilizers, plastics', ... 'Committee on Agriculture', ... 'Committee on Agriculture and Rural Development', ... 'Committee on Budgetary Control', ... 'Committee on Budgets', ... 'Committee on Development', ... 'Committee on

	'agreements and relations' 'Budget of the Union' 'Chemical industry, fertilizers, plastics' 'Committee on Agriculture and Rural Development' 'Committee on Budgetary Control' 'Committee on Budgets' 'Committee on Development' 'Committee on Economic and Monetary Affairs' 'Committee on Employment and Social Affairs' 'Committee on Fisheries' 'Committee on International Trade' 'Committee on Regional Development' 'Committee on Transport and Tourism' 'Committee on the Internal Market and Consumer Protection' 'Company taxation' 'Cooperation and agreements for energy' 'Development cooperation' 'EC, EU framework programme ' 'Economic union' 'Employment policy, action to combat unemployment' 'European Maritime and Fisheries Fund (EMFF)' 'Financial supervision' 'Financing of the budget, own resources' 'Fish stocks, conservation of fishery resources' 'Fisheries agreements and cooperation' 'Foodstuffs, foodstuffs legislation' 'Free movement of capital' 'Industrial plants, tobacco, hops' 'Industrial policy' 'Iron and steel industry, metallurgical industry'	'Committee on Budgets', ... 'Committee on Development', ... 'Committee on Economic and Monetary Affairs', ... 'Committee on Employment and Social Affairs', ... 'Committee on Fisheries', ... 'Committee on Industry, Research and Energy', ... 'Committee on International Trade', ... 'Committee on Regional Development', ... 'Committee on Transport and Tourism', ... 'Committee on the Internal Market and Consumer Protection', ... 'Common commercial policy in general', ... 'Convergence of economic policies, public deficit, interest rates', ... 'Coordination of monetary policies, European Monetary Institute (EMI), Economic and Monetary Union (EMU)', ... 'Development cooperation', ... 'Economic growth', ... 'Economic, social and territorial cohesion', ... 'Employment policy, action to combat unemployment', ... 'Employment: guidelines, actions, Funds', ... 'Energy policy', ... 'Enterprise policy, inter-company cooperation', ... 'Financial services, financial reporting and auditing', ... 'Financial supervision', ... 'Free movement of workers', ... 'Fruit, citrus fruits', ... % On trade with south america in general 'Global economy and globalisation', ... 'Indirect taxation, VAT, excise duties', ... 'Industrial restructuring, job losses,	Economic and Monetary Affairs', ... 'Committee on Employment and Social Affairs', ... 'Committee on Fisheries', ... 'Committee on Industry, Research and Energy', ... 'Committee on International Trade', ... 'Committee on Regional Development', ... 'Committee on the Internal Market and Consumer Protection', ... 'Company law', ... 'Competition', ... 'Consumers'' economic and legal interests', ... 'Convergence of economic policies, public deficit, interest rates', ... 'Customs union, tax and duty-free, Community transit', ... 'Development cooperation', ... 'Economic growth', ... 'Economic, social and territorial cohesion', ... 'Electronic money and payments, cross-border credit transfers', ... 'Employment: guidelines, actions, Funds', ... 'Energy efficiency', ... 'Fishing enterprises, fishermen, working conditions on board', ... 'Foodstuffs, foodstuffs legislation', ... 'Forestry policy', ... 'Indirect taxation, VAT, excise duties', ... 'Health and safety at work, occupational medicine', ... 'Information and communication technologies, digital technologies', ... 'Insurance, pension funds', ... 'Marketing and trade of agricultural products and livestock', ... 'Securities and financial markets, stock exchange, CIUTS, investments', ... 'Single currency,

'Motor industry, cycle and motorcycle, commercial and agricultural vehicles' 'Oil industry, motor fuels' 'Processed products, agri-foodstuffs' 'Professional qualifications, recognition of qualifications' 'Protecting financial interests of the EU against fraud' 'Road transport: passengers and freight' 'Savings' 'Securities and financial markets, stock exchange, CIUTS, investments' 'Standardisation, EC/EU standards and trade mark, certification, compliance' 'State and evolution of the Union' 'Structural funds, investment funds in general, programmes' 'Plant health legislation, organic farming, agro-genetics in general' 'Small and medium-sized enterprises (SME), craft industries' 'Natural disasters, Solidarity Fund' Social inclusion, poverty, minimum income' 'Textile plants, cotton' 'Cohesion policy, Cohesion Fund (CF)' 'Electronic money and payments, cross-border credit transfers' 'Committee on Industry, Research and Energy' 'Arrangement of working time, work schedules ' 'Committee on Employment and Social Affairs Committee on Women's Rights and Gender Equality'	redundancies, relocations, Globalisation Adjustment Fund (EGF)', ... 'Inland waterway transport', ... 'Internal market, single market', ... 'Iron and steel industry, metallurgical industry', ... 'Livestock farming', ... 'Marketing and trade of agricultural products and livestock', ... 'Milk and dairy products', ... 'Motor industry, cycle and motorcycle, commercial and agricultural vehicles', ... 'Multilateral and plurilateral economic and trade agreements and relations', ... 'Natural disasters, Solidarity Fund', ... 'Nuclear energy, industry and safety', ... 'Previous annual budgets', ... 'Research and technological development (RTD)', ... 'Rural development, European Agricultural Fund for Rural Development (EAFRD)', ... 'Savings', ... 'Securities and financial markets, stock exchange, CIUTS, investments', ... 'Services sector', ... 'Small and medium-sized enterprises (SME), craft industries', ... 'Social inclusion, poverty, minimum income', ... 'Social protection, social security', ... 'Solid fuels, coal mining, mining industry', ... 'Standardisation, EC/EU standards and trade mark, certification, compliance', ... 'State aids and interventions', ... 'Support for producers and premiums', ... 'Taxation', ... 'Textile and clothing industry, leathers', ...	euro, euro area', ... 'Small and medium-sized enterprises (SME), craft industries', ... 'Sugar'

| | 'Committee on Agriculture and Rural Development Committee on Women's Rights and Gender Equality' 'Taxation'}; | 'Textile plants, cotton', ... 'Trans-European transport networks', ... 'Work, employment, wages and salaries: equal opportunities women and men, and for all', ... 'Workforce, occupational mobility, job conversion, working conditions' | |