Online appendices

Appendix A – Measuring connective density

The survey

Connective density is measured on the basis of Waves I and II of the Comparative Candidates Survey. Wave I of the CCS covered elections between 2005 and 2013 and Wave II covered elections between 2013 and 2018. A third wave of elections will cover the period 2019 to 2024. Of the 29 elections covered in our revised paper, 21 took place during Wave I and 8 took place during Wave II.

The CCS takes a number of steps to ensure a high response rate deploying a mixed mode survey using postal and online surveys of all candidates and starting fieldwork as soon as possible after each election (Comparative Candidate Survey, 2014).

The total number of candidates covered by each country survey does vary reflecting factors such as electorate size, the numbers of representatives elected to each Parliament, and the number of parties contesting the election. The survey does succeed in getting good response rates from candidates who comprise each party's representative elite.

For example, 803 candidates standing for seven parties were surveyed at the German election of 2017. Of this number, 186 or 23% were elected to the Bundestag at the election representing 26% of the total number elected, and indicating that the survey included a substantial proportion of successful members of party 'elites'. The coverage of elected members of the Bundestag did vary by party, from 9% in the case of elected politicians from the Christian Social Union to 37% in the case of Social Democratic Party.

By contrast 162, or 53% of the 306 candidates who responded to the CCS in Portugal in 2015 were elected to parliament and the respondents comprised 70% of all elected parliamentarians. All 17 elected candidates from the *Bloco de Esquerda* (BE) responded to the survey, while respectively 63% and 70% of elected politicians from the BE's main left-wing competitors, the Socialist and Communist parties, were respondents to the survey.

Categories of organization in Connective Density

The data set used for this paper covers 29 elections of which 21 were covered by Wave I of the CCS and 8 were covered by Wave II of the CCS. In each wave of the survey candidates of each party were asked whether they were members of a number of organization types. Table A.1 below summarises which categories of membership organization were selected to operationalize connective density. The selection was made on the basis of an assessment of whether a type of membership was pertinent from the perspective of electoral mobilization. On this criterion, for example, membership of sports or cultural associations was not included while membership of religious associations was included.

The Table shows that there was some inconsistency between the two waves in the categories of association surveyed. While candidates in both waves were asked about their membership of Trade Unions (see footnote 3 in the main paper) and Religious Organisations there were slightly different survey categories in other important respects.

The principal source of potential inconsistency was the higher number of relevant categories of membership in wave II opening the potential for a candidate to report higher connections simply as a

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product of a greater number of possible membership categories, thereby destabilizing recorded values across waves of the CCS. To correct for this, memberships of two categories of organization in wave II – Human and Civil Rights groups and environmental organisations - were treated as equivalent to interest group memberships in wave I and a new variable was computed that could only take on a maximum value of 1 in cases of candidates membership of both categories of organization in wave II of the survey. The resulting values for mean country connective density are stable across waves for the seven countries with elections falling in both waves – falling or remaining essentially flat across waves in three countries each and rising significantly in just one country.

Table A.1 - Connective Density

Wave (no. elections)	Categories selected	Treatment
I (21)	Trade Unions Professional Associations Interest Groups Religious Groups	Not adjusted
II (8)	Trade Unions Business Associations Human and Civil rights organisations Environmental organisations Religious Groups	Not adjusted Business treated as equivalent to Professional Associations in Wave I Human and civil rights and environmental organisations treated as equivalent to the single category of interest groups (in wave 1) and coded so that a maximum value of 1 was possible in cases of membership of both groups. Not adjusted

Some trends in the four types of organization that comprise our measure of connective density can be identified.

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Trade union membership has been in long-term secular decline across Western Europe. It is highest in those countries, such as Denmark and Finland that form part of the Ghent system of unemployment insurance in which Trade Unions administer national schemes but even in those countries trade union membership is in decline, falling for example by a quarter in Finland between 1978 and 2018 according to the OECD (stats.oecd.org). Trade unions have gradually loosened their formal ties to social democratic parties but our data suggests that trade union members remain relatively well represented amongst voters of the mainstream and radical left in most countries

According to the European Parliament (European Parliament Briefing, 2017) **religious** or faith based NGO's are amongst the most active NGO's on the continent of Europe. Three types of religious organisation in civil society are identified by the Briefing - congregations attached to local churches, mosques or synagogues, national networks of congregations, including national denominations and affiliates providing social services, and unaligned or freestanding religious organisations, which are separate from congregations and national networks. Our data set suggests that connections to religious groups make Christian Democratic parties in countries such as Norway some of the best-connected parties in Western Europe.

In the words of Berny and Rootes (2018) the **environmental** 'movement can be represented as a very broad church, a network, in which ENGOs in various ways support the activities of less-institutionalised, more radical activists…',. The influence of and support for environmental organisations is probably greater than at any time (Berny and Rootes, 2018) and collaboration between environmental organisations at a transnational level is growing – see for example the green10 group of the ten largest environmental NGO's in Europe (www.green10.org).

CSO's in the **civil rights** field campaign on a wide range of issues including poverty, social exclusion, gender inequality, discrimination and the protection of civil rights. A major concern of CSO's in this sector is the threat of growing government restriction of their space to campaign for change. For example, the annual Civicus Monitor report on the space for action of CSO's in 2020 reports that it had narrowed in 4 of the 14 countries that are covered in our study (Civicus, 2020).

Appendix B - Descriptive Statistics

Table B.1
Descriptive Statistics of Variables in Models

Variable name	Variable type	Description	N	Missing values	Min. value	Max. value	Mean
Party vote change (DV)	Scale	Absolute change in party vote share at each election	237	15	0.0	30.7	2.91
Party-trade union support (IV)	Scale	Union members as a percentage of party electorates	200	52	0.00	76.6	30.1
Party Membership Ratio (IV)	Scale	Party Membership Ratio at each election	182	70	0.47	55.13	6.91
Connective Density (IV)	Scale	Measure of connections of parties to organizations in civil society	242	10	0.0	2.09	1.09
Party size (CV)	Scale	Absolute percentage party vote at the previous election	236	16	0.00	48.66	11.47
Cultural Heterogeneity (CV)	Scale	Country measure of cultural heterogeneity in each election year	29	0	0.338	1.134	0.714
Economy (CV)	Scale	% change in GDP in the year preceding each election	29	0	-9.13	5.65	0.91
Number of parties (CV)	Scale	Number of parties obtaining at least 2% of the vote at each election	29	0	4	11	7.6
Electoral system change (CV)	Nominal	Value 1 where election proceeded by major change in electoral system. Value 0 in all other cases	29	0	N/A	N/A	N/A

Table B.2 – Predictive Marginal Effects for Connective Density

Measure of connective density (p - value)	Margin - %	Standard error of margin
0.00 (<.01)	5.09	1.03
0.50 (<01)	4.30	.665
1.00 (<.01)	3.50	.336
1.09 (<.01)	3.36	.292
1.50 (<.01)	2.71	.285
2.00 (<.01)	1.91	.588
2.09 (<.01)	1.77	.652

In our data set the lowest and highest party measures for connective density were respectively 0.00 and 2.09. The predicted marginal values for vote change in these two cases are 5.09% and 1.77% a difference of 3.38%, which in a tight election race could well be decisive.

Appendix C – information on political parties included in the data set

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Type of parties

The parties included in the data set are all parties contesting elections in 14 countries between 2005 and 2017 for which survey data on candidates' connections to civil society organisations is included in the CSS. The data set for each country generally covers all political parties fielding a substantial number of candidates, obtaining representation in Parliament, or registering significant support at the national level. For example, the data for Sweden covers all eight parties who obtained representation in Parliament at the elections of 2010 and 2014 plus the Feminist Initiative which fell narrowly short of reaching the 4% threshold for representation at the Swedish general election of 2014. In Greece by contrast the CCS covered only the two largest parties (New Democracy and PASOK) that accounted for 80% of the popular vote at the elections of 2007 and 2009. The data set was expanded at subsequent elections in 2012 and 2015 to include several other new and emerging challengers to the two-party system that had prevailed in Greece since the restoration of democracy in the country in 1974.

Treatment of party mergers, splits, and electoral coalitions

The issue of splits and mergers does not arise because party candidates in CCS are identified with the specific party label they contested under at each relevant election. Parties that emerged as a result of a party split *between* elections in the data set, e.g. DIMAR in Greece which split from Syriza in 2010, are treated the same way as new parties, such as the Alternative für Deutshland in 2013, contesting general elections for the first time. For the measurement of vote change (the DV) new parties are treated as having 0.00% of the vote at the previous election. Otherwise data for vote change required a party to contest at least two elections under the same party label.

There are no examples in our data set of a formally merged party contesting an election between 2005 and 2017 that stood as two or more parties at preceding elections. If there had been they would have been treated in the same way as the several electoral coalitions of joint electoral lists at specific elections. These were CD&V with N-VA (Belgium, 2007), SP-a and Spirit (Belgium, 2007), CDS-PP and PSD (Portugal, 2015), PDS and WASG (Germany 2005). In each of these cases the connections of candidates in both electoral partners were surveyed separately in the CCS and so the connective density was calculated as a weighted average of the two parties separate data. To calculate vote

change, the vote of the electoral coalition was compared with the combined but separate vote of the coalition partners at the previous election. For example, the coalition of CD&V and N-VA obtained 18.51% of the vote at the Belgian election of 2007. The combined separate vote of the two parties at the previous election of 2003 was 16.31% and so an observation of 2.20% was recorded for vote change in 2007.

Sources for party membership data

Our main source of data on party membership was the MAPP dataset (referenced in the article). This was supplemented by an exhaustive search of scholarly literature on membership levels and trends, journalistic sources, and individual party announcements on membership levels. For example, we found data for our estimate of membership of Finnish parties in 2015 from a report published by the Finnish Election Research Portal (2016). In the case of Belgium we were able to include information for parties based in Flanders on the basis of a report by the Catholic University of Leuven (referenced in the article) which was reported on by a regional newspaper. And in some cases the source for data was the political parties themselves, such as the Portuguese Socialist Party who made results of survey into its own membership available to the wider public, or cooperated in surveys of party membership like that conducted by Santo et al of Portuguese party members (2018).

Where the date of information sourced was close to the date of a relevant election or where we were able to obtain two reliable measurements of membership size either side of an election date, we imputed membership levels for the relevant election. For example, in the case of Portuguese parties at the election of 2015 we had reliable measures of party membership either side of the election year. In the case of the Portuguese Communist Party we had data for 2012 and 2016 and imputed a value for 2015 on the basis of subtracting three quarters of the decline between the two dates from the 2012 data. Where these criteria were not met we took the view that imputing for more missing values risked weakening the reliability of the full set of observations.

The Table below summarises how data on party membership was sourced for the countries and elections in the study.

Country	MAPP dataset election coverage	Supplementary sources
Austria	Partial 2008	Scholarly literature and data imputation
Belgium	2007 and 2010	Scholar survey for parties in Flanders - 2014
Denmark	2011	
Finland	2007 and 2011	Finnish Election Research Portal 2016
Germany	2005, 2009, and 2013	Statista data service for 2017
Greece	None	Scholarly literature and data imputation
Ireland	2007 (using 2008 figures)	
Italy	2013	
Netherlands	2006	
Norway	2009 and 2013	
Portugal	Partial 2009 and 2011	Scholar survey (Santo, 2018) of party membership – and party sources
Sweden	2010 and 2014	
Switzerland	2007	Guide to the Swiss Confederation 2011, published annually by the government of the Swiss Confederation
UK	2010	

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Appendix D

In this appendix we report on a number of general robustness checks and summarise the performance of our control variables**.**

Performance of Control variables

Electoral system change

Table D.1 summarises how the control variables selected for our models performed in the regression analysis. It shows that all of our control variables with the exception of electoral system change performed in line with our expectations. In Bartolini and Mair's study (1990) 'changing institutional circumstances [appeared] to offer substantial incentives towards electoral stability' (1990, 160). We operationalised electoral system change as a substantial change in the mode of electing a representative chamber or a change in the threshold required for representation in parliament. Of the elections in our data set, just three took place in the context of a change in the electoral system. These were:

Austria (2008) – extension of the franchise to 16 year olds.

Belgium (2014) – replacement of direct election of the Senate with a system largely based on nomination from regional and community parliaments.

Germany (2013) – reform to enable the total number of seats in Parliament to change in order to ensure that levelling of representation via the Party List vote resulted in full proportionality of seats for all parties meeting the 5% threshold for election to Parliament.

An example of a change in electoral rules that we treated as not substantial are the changes to the seat bonus awarded to the party obtaining a plurality of votes. In Greece, for example this was first reduced for the general election of 2007 and then increased for the general election of May 2012.

Performance of control variables

A summary of how our control variables performed against expectations is provided in Table D.1 below.

Table D.1 – Performance of Control Variables in Regressions

Control variable	**Expected direction of impact on party vote change**	**Results**
Party size	Positively related to party vote change	In line with expectations and significant in all models
Cultural Heterogeneity	Inversely related to party vote change	In line with expectations and literature, and significant in all models
The economy	Good economic conditions (higher rates of economic growth) inversely related to party vote change	In line with expectations and literature, and significant in all models

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Number of parties	Higher numbers of parties at an election to be positively related to party vote change	In line with expectations and literature, and significant in most models
Electoral system change	Significant changes in the electoral system to be positively related to party vote change	We found no significant relationship in any of our models between incidence of change in the electoral system and the size of party vote change

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Additional control variables

In the analysis that follows we replace institutional change (electoral system change in our model) with three other control variables, first in stepwise fashion and then in combination. The three additional control variables are *the government status of each party* at the time of each election (a dummy variable taking the value 1 for parties in government at the time of each election) which we expect to be positively related to volatility at the party level, *the percentage change in turnout at each election* (a dummy variable taking the value one for all elections where the turnout change was at least 5%) which we expect to have a positive relationship with volatility, and *party polarization* a measure based on the Manifesto Project which we also expect to have a positive impact on volatility. The results are shown in Tables D.2 and D.3.

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In the case of Model 1 the addition of the government status of parties at elections and a measure of party polarization have negligible impacts on our DV – neither are significant nor improve model fit. However, the addition of a measure of change in turnout (significant at the .05 level) improves model fit by 3.4% and reduces the impact of party trade union support, the number of parties and the economy. The impact of government status and party polarization on model 3 mirrors that of model 1 with the exception that when government status is added in place of electoral system change, it is positive at the .10 level This significance disappears when all three replacement variables are included together. The addition of turnout change to model 3 improves model fit and reduces the impact of the economy and the numbers of parties. Organisational and connective density retain their significance in all models.

Table D.2 Additional control variables for model 1 – Organisational Density

IV's	Model 1a	Model 1b	Model 1c	Model 1d
Party-trade union support	-.048*** (.014)	-.033** (.012)	-.048*** (.015)	-.033** (.012)
Party membership	-.031 (.043)	-.039 (.039)	-.043 (.041)	-.032 (.041)
Connective Density	-	-	-	-
Party size	.109*** (.022)	.100*** (.019)	.100*** (.020)	.106*** (.021)
Cultural heterogeneity	-3.654*** (1.453)	-2.171* (1.243)	-3.787** (1.498)	-2.064* (1.171)
Economy	-.177* (.105)	-.047 (.074)	-.176* (.108)	-.044 (.079)
No. parties	.509** (.218)	.312 (.195)	.475** (.220)	.359** (.182)
Government status	-.560 (.487)	-	-	-.341 (.443)

Turnout change	-	4.389*** (1.105)	-	4.495** (1.189)
Party polarisation	-	-	.001 (.011)	.006 (.011)
Constant	2.21	1.90	2.51	1.82
R^2	.2572	.2949	.2513	.2992

* p < .1, ** p < .05, *** p <.01

Table D.3 Additional control variables for Model 3 – Connective Density

IV's	Model 3a	Model 3b	Model 3c	Model 3d
Party-trade union support	-.058*** (.015)	-.030*** (.009)	-.058*** (.015)	-.032*** (.009)
Connective density	-1.129* (.593)	-1.153*** (433)	-1.204** (.601)	-1.197** (.493)
Party size	.112*** (.025)	.108*** (.024)	.099*** (.024)	.115*** (.024)
Cultural heterogeneity	-5.475*** (1.335)	-2.501*** (.904)	-5.562*** (1.366)	-2.443*** (.896)
Economy	-.391*** (.122)	-.113 (.107)	-.397*** (.122)	-.101 (.075)
No. parties	.628** (.238)	.292* (.199)	.581** (.241)	.354** (.146)
Government status	-.666* (.343)	-	-	-.334 (.338)
Turnout change	-	6.858*** (1.352)	-	7.041*** (1.309)
Party polarisation	-	-	.001 (.012)	-.001 (.010)
Constant	4.38	3.24	4.77	2.40
R^2	.3670	.4393	.3621	.4436

* p < .1, ** p < .05, *** p <.01

Including the party membership ratio in models 3 and 4

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Table D.4, below, illustrates the effect of re-instating measures for the party membership variable, which was insignificant in model 1, into models 3 and 4. In both models the party membership ratio is insignificant and the results confirms the significant restraining effect of both organisational and connective density. There is, however, a reduction in model fit compared to models 3 and 4 run without party membership. This reflects the loss of cases when party membership ratio is included. Because of this loss of data and the fact that the party membership ratio does not reach significance in any models we have not included party membership in our full model.

Table D.4 – models 3 and 4 with party membership ratio included

IV's	Model 3	Model 4
Party-trade union support	-0.040** (.016)	-0.041*** (.017)
Party Membership Ratio	-0.036 (.036)	-0.035 (.038)
Connective density	-1.039* (.535)	-1.427** (.653)
Party size	.099*** (.019)	.096*** (.019)

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Cultural Heterogenity	-3.760** (1.592)	-3.751** (1.610)
Economy	-.189* (.110)	-.189* (.108)
No. parties	.362 (.258)	.363 (.271)
Electoral system change	.766 (.878)	.718 (.850)
Ideology	- 	-1.658 (1.612)
Ideology * connective density	-	1.257 (1.163)
Constant	4.25	4.75
R^2	.2764	.2823

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

Country Fixed Effects

We did not include country fixed effects in the modelling because we are interested in explaining the variation between parties that exists within and between countries and we were concerned about losing an important part of the substantively interesting variation in a fixed effects model. However, testing our full model with country fixed effects does provide a very strict (and rather demanding) test of the effects we hypothesise.

We have run our full model, with and without our ideology control variable, and excluding country level control variables (cultural heterogeneity, and GDP change) with country fixed effects. The results for connective density still hold (.05 level) but organisational density in the form of party trade union support is not significant with fixed country effects (see Table D.5 below).

Table D.5 – Models 3 and 4 with Country Fixed Effects

IV's	Model 3	Model 4
Party-trade union support	-0.005 (.029)	-0.009 (.033)
Connective density	-1.798** (.535)	-1.743** (.890)
Party size	.113*** (.020)	.112*** (.020)
No. parties	1.720*** (.308)	1.719*** (.311)
Electoral system change	-1.806 (.950)*	-1.796* (.957)
Ideology	- 	-1.658 (1.612)
Ideology * connective density	-	1.795 (.957)
Constant	-15.52	-15.62
R^2	.4548	.4550

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

We believe that the loss of significance for party trade union support with country fixed effects reflects substantive country differences in the role and strategies of trade unions, for example their administration of unemployment insurance (the Ghent system) in four of the 14 countries in our study, and their response to declining levels of membership (Gumbrell-McCormick and Hyman 2013). Additionally party candidates membership of trade unions is one of the components of connective density, which remains significant with country fixed effects indicating that trade union membership matters at the elite level.

Outlying values of party vote share

A bivariate plot of the relationship between connective density and volatility at the party level is provided in Figure 1, below. Figure 1 also identifies the two most notable outliers in the data both of which had observations for party vote change that were more than six standard deviations from the mean for our measure. First, the collapse of the PASOK vote at the Greek election of May 2012 when the parties connective density is measured at 1.22, and second the impressive performance of the Five Star Movement as a new entrant at the Italian election of 2013. There are an additional three observations of party vote change that are more than three standard deviations from the mean – the fall of 15.82 percentage points for Forza Italia at the Italian election of 2013, the increase of 15.00 points in the Finns Party share of the vote at the Finnish election of 2011, and the fall of 14.62 percentage points in the vote of New Democracy at the Greek election of May 2012.

Table D.6 below shows the impact on our models of removing these outliers from the regression in two steps – first the extreme outliers (models 1e and 3e), and second all five outliers (models 1f and 3f.) It shows that the exclusion of outlying values for party vote change improves overall fit for models 1 and 2 compared to the results in Table 1 of the main paper (organisational density) by up to 2.8 percentage points. The exclusion of outliers from models 3 and 4 (organisational and connective density) slightly lowers model fit by between 3.1 to 5.0% but without changing the significance of our independent variables. We conclude that our model remains robust with the exclusion of outlying values for party vote change.

Figure 1: Scatterplot of party volatility and connective density

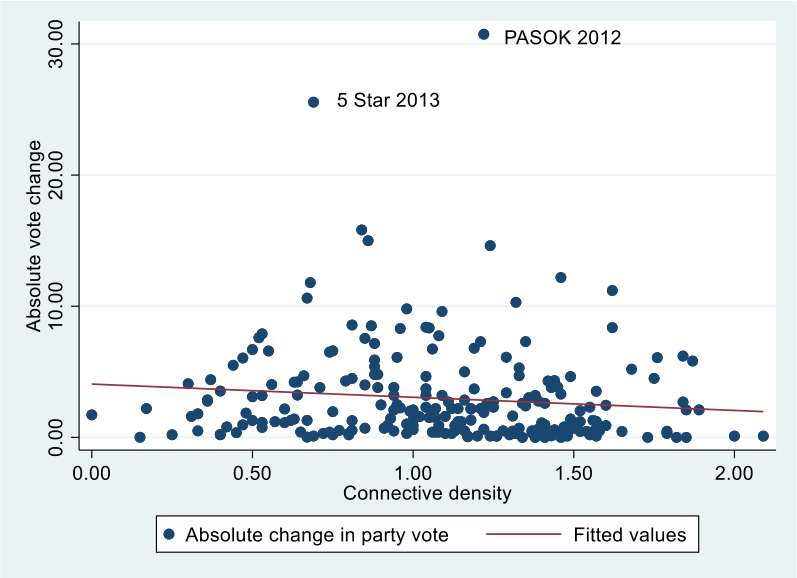

Table D.6 – Robustness Checks for Outlying Observations of Party Vote Change

IV's	Model 1e	Model 1f	Model 3e	Model 3f
Party-union support	-.0444*** (.015)	-0.0441*** (.014)	-0.043*** (.013)	-0.042*** (.012)
Party Membership ratio	-.0442 (.035)	-.0340 (.037)	-	-
Connective density	-	-	-1.029** (.447)	-.827** (.387)
Party size	.099*** (.020)	.095*** (.017)	.093*** (.017)	.086*** (.015)
Cultural heterogeneity	-3.945*** (1.457)	-3.385** (1.337)	-4.108*** (1.174)	-3.469*** (1.165)
Economy	-.182* (.106)	-.166* (.096)	-.247*** (.088)	-.209** (.084)
No. parties	.439* (.230)	.404 (.238)	.406** (.185)	.354* (.183)
Electoral system change	.981 (.853)	1.038 (.8828)	.411 (.837)	.501 (.796)
Constant	2.75	2.44	4.19	3.80
R^2	.2602	.2880	.3316	.3126

* p < .1, ** p < .05, *** p <.01

Age effect

The relationship between age and stability of vote preference – often referred to as the generational replacement thesis – is well established. It is possible, therefore, that the relationship we have observed between parties' connective density and electoral stability at the party level might be explained by the age profile of party candidates. Older candidates might be expected to have more social connections and in consequence those parties with older candidate profiles might have higher connective density and stable electorates.

Table D.7, below, shows average levels of connective density by candidate age group for 28 elections in 14 countries (candidates at the Belgian election of 2007 were not asked about their age), and shows that there is no systematic relationship between candidate age profiles and levels of connective density. Candidates between 46-55 years of age had the highest average connections and candidates in the 36-45 years group had the same level of average connections than candidates in the oldest age cohort. Candidates in the 46-55 year old group had the highest connective density at nearly half – 13 of 28 - of the elections in the study.

Table D.7

Candidates Connective Density by Age Group in 28 elections in 14 countries

Age group	Average connective density	No. elections age group most connected
Up to 35 years	1.04	2
36-45 years	1.17	7
46-55	1.25	13
56 and over	1.17	6

Appendix E

In this appendix we report on a number of alternative operationalizations of our models and the results of testing for a number of interactions with our measures of organisational and connective density.

Alternative operationalisation of party vote stability – gain/loss dummy variable

Our expectation is that the impact or organisational and connective density on electoral volatility at the party level will hold for both electoral gains and losses. To test this we created a dummy variable taking the value 1 for electoral gains and 0 for electoral losses, and then interacted the dummy variable with party trade union support and connective density in our full model. The results are shown in Table E.1 below. Neither the dummy variable nor the interaction terms with organisational and connective density are significant and the results of the model hold.

Table E.1 – Vote gain/loss dummy variable and interaction effects

IV's	Full model
Party-trade union support	-.050***
	(.018)
Party Membership Ratio	-.002
	(.037)
Connective density	-1.366**
	(.648)
Vote gain/loss dummy variable	-.044
	(1.38)
Vote gain/loss * party membership ratio	-.279**
	(.110)
Vote gain/loss * party-trade union support	.025
	(.023)
Vote gain/loss * connective density	.897
	(1.19)
Party size	.100***
	(.016)
Cultural Heterogenity	-4.10***
	(1.54)
Economy	-.181*
	(.106)
No. parties	.397
	(.247)
Electoral system change	.800
	(.674)
Ideology	-1.83
	(1.61)
Ideology * connective density	1.28
	(1.54)
Constant	4.56
R^2	.3324

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

Although the party membership ratio is not in our full model we included an interaction of our gain/loss dummy variable with the party membership ratio. While the dummy variable and its interaction with organisational and connective density remained insignificant, the interaction term for party membership was negative and significant. This suggests that higher levels of party membership may have an effect in cases of electoral gain. We believe that this may be due to underlying long-term trends that we are not able to model in this paper. For example, parties with substantial membership that have experienced

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long-term decline interspersed by smaller electoral recoveries. Our most important findings in respect of organizational and connective density remain robust.

Interaction of party size and connective density

In order to make a further check on the party size effects of connective density we test our full model with an interaction of party size and connective density. If the model was picking up a disproportionate amount of change in the vote share of large parties we would expect this interaction to be positive and significant. Results are shown in Table E.2 below.

In our full model the interaction term is indeed positive and significant (but only at the .10 level). However, tests for multicollinearity indicate high levels of collinearity between the interaction term and party size (VIF = 12.71) and the regression produces a substantial inflation of the coefficient for connective density. Because of the multicollinearity issues and the relatively weak interaction effect we conclude that data supports our expectation that there are no theoretical arguments for expecting the effect of connective density to differ between large and small parties.

Table E.2 Interaction of Party Size and Connective Density

IV's	Full model
Party-trade union support	-.057***
	(.016)
Connective density	-2.754***
	(.648)
Party size	-.016
	(.075)
Party size * connective density	.097*
	(.057)
Cultural Heterogenity	-5.854***
	(1.38)
Economy	-.391***
	(.118)
No. parties	.589**
	(.252)
Electoral system change	.031
	(.990)
Ideology	-.531
	(1.46)
Ideology * connective density	.616
	(1.05)
Constant	6.59
R^2	.3774

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

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The index of ethnic fractionalisation and the religious density index modelled separately

All the models in the paper include Cultural Heterogeneity as a control variable. Our measure of cultural heterogeneity is a composite of two separate indices – the Harvard Index of Ethnic Fractionalisation and the Religious Density Index. We operationalise our measure in this way for two reasons and to ensure continuity with the treatment of cultural segmentation developed in the seminal work of Bartolini and Mair.

First, we are interested in capturing as much as possible of the richness of diversity in contemporary West European societies and believe that the two indices capture distinct elements of diversity (Alesini,

et al, 2003). The two indices are strongly correlated (.44, p<.01) but several countries in our study, for example, Austria, Germany, the Netherlands and Sweden, have rates of ethnic diversity that are below the average for the full group of countries, but levels of religious diversity that are above average for the full group. We believe that each index alone does not capture the richness of this picture.

Second, different types of diversity may change at different rates within countries (Patsiurko et al., 2012, referenced in the main paper). For example in the period covered by our data set some countries, notably Greece and Switzerland, have become more religiously diverse at a faster rate than they have become more diverse ethnically.

Finally as noted above Bartolini and Mair's measure of cultural heterogeneity, which they found reinforced identities that constrained the extent of electoral availability (and volatility), comprised two indices also, and we think it is valuable to retain continuity with their treatment.

In Table E.3, below, we show results for our full model with HIEF and RDI run separately in place of our composite measure of Cultural Heterogeneity. In terms of model fit in our full model the index of ethnic fractionalization performs better than the religious density index. In our full model the index of ethnic fractionalization adds nearly 2% points to model fit and the significance of connective density increases (to the .01 level). However, in our full model with the religious density index model fit falls by nearly 6% points and connective density is not significant. This is interesting because it suggests that the increasing ethnic diversity of Western European countries in recent decades has created bonds of cultural identity that help stabilize party level electoral volatility, and that are now more significant than bonds associated with religious identity.

We retain the fuller conceptualization of cultural heterogeneity in the main paper for the reasons outlined above.

E.3 – HIEF and RDI modelled separately

IV's	**Model with HIEF**	**Model with RDI**
Party-trade union support	-0.60***	-.048**
	(.017)	(.019)
Connective density	-2.377***	-1.120
	(.878)	(.788)
Party size	.104***	.103
	(.026)	(.024)
Index of ethnic fractionalisation	-10.21***	-
	(2.465)	
Religious density index	-	-5.390*
		(2.926)
Economy	-.355***	-.408**
	(.129)	(.163)
No. parties	.676**	.308
	(.267)	(.340)
Electoral system change	-.150	-.044
	(.911)	(1.298)
Ideology	-.696	-.522
	(1.547)	(1.641)
Ideology * connective density	1.010	.529
	(1.144)	(1.165)
Constant	3.89	4.99
R^2	.3779	.3083

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

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Alternative measure of party ideology

As a further test of our party ideology control we ran a more extended categorization of party ideology to explore for variation by ideological type, i.e. including a third category for Centre parties. We created dummy variables for the each party type and included them in a regression of our full model with Centre parties as the reference category. The results for our model see Table E.4 below, are stable, party ideology was not significant and nor was its interaction with connective density. The impact of organisational density remained but this model had a high degree of multicollinearity which inflated the standard error for connective density. This version of the model is an additional robustness check for our expectation (H3) that the effects of connective density do not differ between parties of the left and right. We do not find any evidence to reject this expectation.

Table E.4– Alternative Measure of Party Ideology

IV's	
Party-trade union support	-0.059***
	(.016)
Connective density	-1.313
	(1.123)
Party size	.097***
	(.025)
Cultural heterogeneity	-5.712***
	(1.369)
Economy	-.396***
	(.117)
No. parties	.593**
	(.248)
Electoral system change	.254
	(1.009)
Ideology – left	-.978
	(1.468)
Ideology-left * connective density	.963
	(1.020)
Ideology - right	.447
	(2.113)
Ideology-right * connective density	-.486
	(1.458)
Constant	4.86
R^2	.3671

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 237

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Connective density excluding election candidates' membership of trade unions (models 2a, 3g and 4a)

Table E.5 below shows the impact on models 2-4 (Table 1 in the main paper) of excluding election candidates' membership of trade unions from the operationalisation of connective density. It shows that the restricted operationalisation of connective density has small impacts – less than 1% in all cases –on the explained variation in our dependent variable without altering the significance of any of the independent or control variables.

Table E.5 Impact of Connective Density Excluding Candidates Membership of Trade Unions

IV's	Model 2	Model 3	Model 4
Party-trade union support	-	-.0629*** (.014)	-.0631*** (.015)
Party Membership Ratio	-	-	-
Connective density exc. trade union memberships	-1.332* (.721)	-1.842** (.766)	-1.902** (.912)
Party size	.118*** (.022)	.096*** (.025)	.095*** (.025)
Cultural Heterogenity	-4.423*** (1.652)	-5.408*** (1.340)	-5.404*** (1.352)
Economy	-.415** (.167)	-.417*** (.111)	-.417*** (.111)
No. parties	.235 (.232)	.542** (.238)	.542** (.259)
Electoral system change	.800 (.840)	.225 (.981)	.226 (.987)
Ideology	-	-	-.312 (1.383)
Ideology * connective density	-	-	.215 (.844)
Constant	4.20	5.29	5.38
R^2	.3170	.3679	.3681
Change in R2 compared to Table 1 – connective density with candidates trade union membership	-.0098	+.0052	+.0029

* p < .1, ** p < .05, *** p <.01, two sided; N in all models is 230

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