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Does Party-System Fragmentation Affect the Quality of Democracy?

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Abstract

Is the quality of democracy undermined or enhanced by party-system fragmentation? Addressing this question would help us better assess normative claims about electoral reforms. Yet, doing so is difficult because of endogeneity issues: party systems are endogenous to many other dynamics in a polity. We overcome this problem by putting forward an instrument for the number of parties in a system, based on the level of fragmentation added by parties that narrowly make it to parliament. We then test the effect of party-system fragmentation on the quality of democracy, drawing upon an extensive battery of outcomes. Against previous literature, we find that a higher number of parties leads to more fractionalized governments, but has no impact on other democratic outcomes. Subsample analyses suggest that fragmentation may have some effect in contexts of very high polarization, but we find no effect in other theoretically meaningful subsamples. Our results indicate that party-system fragmentation may have fewer normative implications than previously assumed.

Despite pessimistic projections about the contrary (Mair 2006), political parties remain central to representative democracy. Even the most minimalist definitions of democracy agree that it involves free and regular elections (for example, Huntington 1991) – run predominantly by political parties. The widespread consensus that a well-functioning democracy needs multiple parties competing through elections raises the question: does the number of parties that run for elections affect the quality of democracy?

The common view in the public debate is that the number of parties does affect democratic quality – even if the direction of that effect is disputed. On the one hand, it has been argued that fragmentation was at the root of the instability that characterized and led to the fall of European interwar democracies. Examples include the Weimar Republic (Hermens 2013), France before the Fifth Republic (Vinen 1996), and the Portuguese First Republic (Sardica 2011). Fragmentation can be even more toxic in presidential systems, as Linz's account of Allende's fall in Chile suggests (Linz 1990). Bringing gridlock between the executive and the legislature, fragmentation in this setting can put democratic rule in danger (Cheibub, Przeworski, and Saiegh 2004; Shugart et al. 1992). On the other hand, commentators on US politics have often argued that breaking away from the country's two-party system would solve many of its problems (for example, Drutman 2020). Similar arguments have also been made supporting electoral reform in Canada (Broadbent 2016) and the UK (Curtice and Steed 1986).

The lack of consensus on whether party-system fragmentation is beneficial or detrimental for democracy extends to studies looking at more specific indicators of democratic quality. A vast

literature has looked at whether the number of parties affects governmental stability (Best 2013; Grotz and Weber 2012; Hellström and Walther 2019; Somer-Topcu and Williams 2008; Taylor and Herman 1971; Warwick 1979), accountability (Hobolt, Tilley, and Banducci 2013; Powell and Whitten 1993; Whitten and Palmer 1999), corruption (Chang and Golden 2007; Rose-Ackerman 1978; Schleiter and Voznaya 2014; Schleiter and Voznaya 2014), turnout (Banducci and Karp 2009; Boulding and Brown 2013; Couture, Breux, and Bherer 2014; Crepaz 1990; Franklin and de Miño 1998; Geys and Heyndels 2006; Henderson and McEwen 2010; Hoffman-Martinot, Rallings, and Thrasher 1996; Jackman 1987; Jackman and Milner 1995; Lehoucq and Wall 2004; Radcliff and Davis 2000), public goods provision (Chhibber and Nooruddin 2004; Sáez and Sinha 2010; Teitelbaum and Thachil 2010; Thachil and Teitelbaum 2015; Weitz-Shapiro 2012), female representation (Lijphart 2012; Norris and Inglehart 2001; Tremblay 2007), and the representation of minorities (Lijphart 2012; Wilkinson 2006). Some authors argue that a higher number of parties will positively impact the quality of democracy, while others claim the opposite. This discrepancy is not driven by a choice of different indicators of democratic quality. Ambiguity in the findings prevails even when looking at the same outcome, such as turnout or the provision of public goods, where theory and empirical analyses have pointed towards both a positive and a negative relation.

One of the main difficulties with providing an empirical answer to this question is that the number of parties is the outcome of structural and institutional imperatives, which may also affect independent democratic outcomes. Some of these features will be hard to detect and measure, impeding a causal interpretation of existing empirical findings (but see Bol and Ivandic 2022). If we had a good understanding of what the plausible confounders are, accounting for them could minimize unobserved heterogeneity. Yet, as we show also in the following sections, no such consensus seems to have emerged. Previous studies that have dealt with the effects of party-system fragmentation on the same features of democratic quality have used different sets of control variables in their analyses. Even though authors carefully justify the set of controls they use, they have different views on which variables to control for. This discrepancy highlights the interconnectedness of social and political phenomena. More specifically, it shows how hard it is to assess the causal effect of party-system fragmentation in a standard conditioning-on-observables framework.

We use a novel instrumental variable (IV) approach to overcome unobserved heterogeneity that exogenizes party-system fragmentation.[1] Our instrument builds on the idea that legally fixed thresholds to parliamentary representation induce as-good-as-random variation in parliamentary entry around the area of the threshold. Thus, we instrument party system fragmentation with the number of parties just above the electoral threshold. Our estimation strategy of the first stage follows the premise that the regression discontinuity (RD) design can be conceptualized as a local randomized experiment (Branson and Mealli 2018; Cattaneo, Frandsen, and Titiunik 2015), where units near the cut-off can be treated as exchangeable. Our instrument thus consists of the number of parties whose vote share is just above legally fixed thresholds.

The second stage employs instrumented party system fragmentation to predict several democratic outcomes. We look a large number of outcomes related to democratic quality, which the literature has suggested might be affected by party-system fragmentation: accountability, corruption, governmental instability, representation of underprivileged groups, women's descriptive representation, electoral participation, and provision of public goods. Drawing upon an extensive battery of outcomes allows us to better detect areas in which party system fragmentation matters. We combine these indicators into encompassing indexes and use ready-made proxies of overall democratic quality.

Our results suggest that, while these outcomes correlate with the level of party-system fragmentation, this effect is not causal. Our 2SLS models find that party-system fragmentation increases government fractionalization, as expected. Yet, more importantly, we find no evidence

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[1]Given that we focus only on competitive party systems (that is, systems with more than one party) throughout the paper, we use the terms party-system fragmentation and number of parties interchangeably.

of an effect on any of the remaining twenty-five outcomes. The effects stay null in several alternative specifications.

While our results are local and can only speak to changes brought about by parties that are not very large, many of the theoretical reasons why one should expect fragmentation to affect the quality of democracy should apply to such parties. Moreover, in the Online Appendix, we show that the results remain null if we focus only on elections with above-median thresholds, where we draw upon changes brought about by parties with vote shares between 4 per cent and 15 per cent. Finally, we also report our first stage as a quantile regression. These analyses suggest that our instrument is equally capable of predicting an increase in the number of parties regardless of its baseline value.

We also replicate the analyses using the combination of several alternative specifications of our main models. We report the distribution of coefficients and p-values from 18,200 models, which again suggest no noticeable effect of party-system fragmentation on the quality of democracy. The coefficients approach a normal distribution with a mean zero, and the p-values do not cluster close to traditional statistical significance thresholds. There is also no evidence of a correlation between the size of the coefficient in the second stage and the strength of the first stage. This suggests that the null effect is not the product of a weak first stage. Finally, we show that these results are more than just a product of the 2SLS approach leading to wider confidence intervals. The point estimates in the 2SLS are also much smaller than in the OLS estimates. Out of 26 outcome variables, in 24 of them the effect size under the 2SLS models is less than half of the OLS ones.

While the effects are null on average, we run subsample analyses that uncover some settings where party-system fragmentation may indeed affect the quality of democracy. In contexts where polarization is very high, party-system fragmentation affects outcomes such as accountability, corruption, descriptive representation of women and underprivileged groups, and the overall quality of democracy. While enriching the conclusions from this study, this finding highlights the scope conditions underlying existing claims about the role of party system fragmentation on democratic quality. Fragmentation does matter, but only for a small subset of cases when party polarization is particularly high.

These results help us better assess the boundaries surrounding some of the discoveries in the literature on parties, party systems, and electoral systems. First, a large body of literature finds that party-system characteristics can affect several outcomes, such as coalition building (for example, Calvo, Guarnieri, and Limongi 2015; Golder 2006) or voter decision-making (for instance, Marinova 2016). While we do not question these effects, our results cast doubt on how the number of parties in a system can, per se, affect the quality of democratic output. This may be the case in very polarized systems. Such qualification, however, represents an important scope condition for these arguments.

Our results also inform discussions about the relative merits of different electoral systems. Most scholars attribute variation in democratic outcomes across different electoral systems to the effect of electoral rules on party systems. Electoral systems have been found to influence outcomes such as the type and duration of government (Laver 2003) or electoral accountability (Fisher and Hobolt 2010). The single most important mechanism from which such differences are deemed to emerge is the number of parties interacting in party competition. More inclusive electoral systems are expected to score higher or lower than more restrictive electoral systems in various policy outcomes because of the number of parties they allow to compete in the polity. Our findings invite a reassessment of this link. Again, with the exception of highly polarized systems, party-system fragmentation – perhaps the most defining aspect of party systems – seems to play a secondary role in the quality of democracy.[2]

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[2]There are evident scope conditions in this statement. Our design allows us to leverage variation in the number of parties in contexts with competitive elections. It goes without saying that the number of parties matters for democratic quality when

Models of Democracy and Number of Parties

A lengthy debate within comparative institutionalism concerns which institutional configurations work best for a given polity. The most influential accounts in this respect are those that try to bundle various institutional features together. One example is Lijphart's famous distinction between consociational and majoritarian democracies (Lijphart 2012). Consociationalism is based on the idea that common policy concerns should be decided upon with participation by as many segments of society as possible, while at the same time minority groups should be left to decide alone about group-specific issues. It has been argued that this system works particularly well in plurinational societies (see for example Andeweg 2000). Moreover, through power sharing, consociationalism was hailed for having a better democratic output; for example, being more environmentally friendly, arresting fewer citizens, or providing more external aid. In short, compared to majoritarian systems, consociational democracies generally provide 'kinder, gentler' outcomes in many policy areas (Lijphart 2012).

A voluminous empirical literature has tried to put Lijphart's claims to the test. For example, Bernauer and Vatter (2012) find that consensual cabinet types correlate with higher overall satisfaction levels with democracy and a narrower gap in satisfaction between winners and losers. Similarly, Bochsler and Juon (2021) find that power-sharing democracies are better equipped to represent diverse social groups and women when compared to majoritarian democracies. However, other authors have taken issue with Lijphart's defence of this model. Criticism includes concerns that the model is hard to adopt (Horowitz 2002), leads to inefficient government (Jarstad 2009), and makes reform difficult (Haggard and Kaufman 2018, 358).

This last point touches upon another influential theoretical scheme encompassing multiple institutional dimensions: Tsebelis' veto players theory (Tsebelis 2011). Unlike Lijphart, Tsebelis sees more veto players–agents who can decline a proposition against the status quo–in power-sharing arrangements. In making shifts from the status quo more difficult, veto players often impede policy change and open doors to gridlock. While parliamentary systems can overcome these challenges via a vote of confidence or investiture allowing a change in government composition (Sartori 1997), in presidential systems such crises can lead to regime change (Cheibub, Przeworski, and Saiegh 2004; Shugart et al. 1992).

Embedded in this debate is the idea that the number of parties in a given polity matters for distinctions of the type of democracy and its quality. Indeed, the number of parties is crucial to both Lijphart's and Tsebelis's theories. On the one hand, without being a sufficient condition, the number of legislative parties is a central feature in defining democracy as consociational or majoritarian (Vatter 2009, 32), with the former registering higher levels of party system fragmentation than the latter. But, on the other hand, more parties mean more veto players, which, combined with more distant ideal points between them, can make a policy change more challenging.

One conclusion that can be drawn from this literature is that no institutional configuration appears to strictly dominate the others. Instead, there are policy tradeoffs. Similar to other institutional arrangements, the number of parties can improve some democratic outcomes but worsen others. Arguments about whether party-system fragmentation improves or undermines democratic quality thus largely hinge upon which policy aspects one chooses to focus on.

For instance, looking into the range of descriptive representation provides a positive picture of the role of parties on democratic quality. In a well-functioning democracy, social groups should have equal chances to influence policy-making. In this light, some authors have argued that fragmentation may improve the quality of democracy by improving the descriptive representation of women and minorities. With more parties in parliament, there are more access points for politicians representing underprivileged groups (Norris and Inglehart 2001). Substantive representation can also increase because more fragmented party systems may incentivize parties to

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it signifies a shift from non-competitive to competitive elections; that is, when the number of parties becomes part of the definition as to what a democratic regime means.

guarantee the representation of women and minorities. Parties compete for votes; the more parties there are, the more they will try to differentiate themselves from others (Downs 1957). They can do so by politicizing new issues (De Vries and Hobolt 2020). Consequently, one might expect that the more parties there are in a system, the more likely one will take on the agenda of promoting women and minority representation.

In the case of minorities, specifically, majoritarian democracies make it easier for dominant groups to impede the political representation of minorities (Trebbi, Aghion, and Alesina 2008). As the number of parties and the probability of coalitions increase, it becomes harder for any party to rule without securing the support of minorities. In failing to provide for the need of minorities, a party will endanger the possibility of building coalitions with parties whose success relies on minority votes (Wilkinson 2006). Moreover, as with female candidates, more parties represent more entry points for minority candidates. Even if not represented in government, having legislative seats means that minority representatives can still vote to influence the process of policy-making and government formation (Kostadinova 2007).

Empirical evidence suggests that more fragmented party systems provide a better representation of women (Lijphart 2012; Tremblay 2007), even if some studies also report null effects (Kostadinova 2007; Norris and Inglehart 2001; Yoon 2004). However, when it comes to the representation of minorities, to the best of our knowledge empirical analyses are scant and tend to find only minimal effects (Kostadinova 2007).

Turning our focus from representation to questions of government efficiency changes the established view about the role of party system fragmentation. A higher number of parties means, almost by construction, a higher likelihood of a coalition government (Downs 1957). Under coalition governments, reaching consensus becomes more challenging as the ideological distance between the parties participating in government increases (Kreppel 1997). Even when not leading to a stalemate (Tsebelis et al. 2002), the resulting instability poses obstacles to government efficiency (Sartori 1997).

This need for coalition governments can affect democratic quality via additional routes. In the first place, it can reduce accountability. In a well-functioning democracy, voters need to be able to 'throw the rascals out'. This is only possible if they can correctly attribute blame. This is also why accountability has been regarded as a central feature of democratic quality (Diamond and Morlino 2004). How does party-system fragmentation affect accountability? The answer is, again, via the type of government formed. With a single-party government, voters need only evaluate the government's performance when making voting choices. However, as the number of parties in government increases, this task becomes more challenging because voters cannot evaluate the government as a whole – they also need to understand who is responsible for what. This allows incumbents to diffuse responsibility, making blame attribution harder (Hobolt, Tilley, and Banducci 2013; Powell and Whitten 1993).

Moreover, the need for coalitions can open the door to corruption. Corruption is widely regarded as contrary to the quality of democracy since public resources deviate from development goals such as improving the infrastructure or human capital (Diamond and Morlino 2005, xxviii). In more fragmented party systems, legislators may change their policy positions during campaigns to allow coalitions to be formed. Realizing this, voters can start to care less about parties' stances, generating an apathetic electorate that is more permissive of corruption (Rose-Ackerman 1978). Party-system fragmentation can also affect corruption directly, even in the absence of coalition governments. As the number of parties increase, it becomes more costly for voters to access information that allows them to distinguish between honest and corrupt politicians (Schleiter and Voznaya 2014, 678). This means that, even if voters want to elect honest politicians, detecting them in high fragmentation contexts might be more challenging.

The empirical literature has confirmed some of these worries. For example, several studies have found that coalitions make governments more unstable and legislatures more short-lived (Best 2013; Grotz and Weber 2012; Hellström and Walther 2019; Somer-Topcu and Williams 2008;

Taylor and Herman 1971; Warwick 1979). Party-system fragmentation has also been found to correlate with more corruption (Chang and Golden 2007). A few qualifications have been made to this assertion, however. For example, while Charron (2011) finds that, although more parties are associated with an increase in corruption, the effect seems to hold only in single-member district systems – not in proportional representation (PR) ones. In turn, Schleiter and Voznaya (2014) find that the impact of party-system fragmentation on corruption is non-monotone. From a low baseline, increasing the number of parties decreases corruption. However, the effect reverses at high levels of party-system fragmentation, where it becomes negative.[3]

Electoral participation is another dimension of democratic quality that, according to previous research, can be affected by party-system fragmentation. Low turnout has been regarded as a measure of apathy on behalf of the citizenry and a sign of bad democratic quality (Ballinger 2006). Moreover, because individuals who do not turn out have different characteristics and preferences (Gallego 2014), low voter turnout can also affect the democratic goal of political representativeness (Bechtel, Hangartner, and Schmid 2016).

Previous research has proposed several arguments regarding how party-system fragmentation will likely affect turnout. On the one hand, some authors have argued that party-system fragmentation can depress voter turnout. Again, owing to the frequent need for coalition formation, citizens vote for just one part of the government in fragmented party systems. This makes the formation of a government depend less on the results of elections and more on the process of elite negotiation (Downs 1957; Key 1955; Lipset 1960). At the same time, having more parties in a system increases the costs of access to information (Downs 1957). It also increases the probability that a given voter will be cross-pressured by several parties, which reduces their ability to develop party identification – a strong predictor of voter turnout (Campbell et al. 1960). Indeed, there is abundant evidence that party-system fragmentation negatively correlates to turnout (Franklin and de Miño 1998; Geys and Heyndels 2006; Henderson and McEwen 2010; Jackman and Milner 1995; Kostadinova and Power 2007; Lehoucq and Wall 2004; Radcliff and Davis 2000).

A different group of authors has argued that party-system fragmentation can instead boost turnout. Higher party-system fragmentation is likely to decrease the distance between voters' ideal points and the policy stances of the closest party. This means voters can find a party they care enough about to vote for it (Crepaz 1990). At the same time, more parties increase aggregate levels of voter mobilization, which has been found to increase turnout (Bond et al. 2012; Gerber and Green 2000). Empirically, there is indeed some evidence of a positive relationship between party-system fragmentation and turnout (Banducci and Karp 2009).

Finally, it has been argued that party-system fragmentation can affect the provision of public goods. These effects may, however, go in opposite directions. Some authors have argued that a greater number of parties can decrease the provision of public goods. An increase in the number of parties competing in elections makes those parties more likely to direct their campaign efforts at their specific constituency. Consequently, in office, they tend to provide more club goods than public goods (Chhibber and Nooruddin 2004). On the other hand, Teitelbaum and Thachil (2010) argue that fragmentation gives underprivileged groups a voice in politics, leading them to demand better public goods provision. Their empirical analyses support this expectation. Similarly, Sáez and Sinha (2010) argue that the more fragmented a party system is, the higher electoral uncertainty is. Such uncertainty increases pressure on incumbents, leading them to boost public goods provision. It should be noted that their analyses support this expectation when drawing upon investment in education but not when they draw upon the provision of other public goods.

To sum up, several strands of literature in comparative politics suggest that the number of parties can affect how democracy works in a country. Of course, the exact direction of these effects

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[3]As we discuss in our results section, in our analyses we also test for the possibility of non-monotone effects but find no such evidence (see Fig. 6 below).

will depend on the specific feature one will look at and one's vision of how democracy should work. A common problem with the empirical work thus far is that the evidence comes from cross-national comparisons, which cannot guarantee similarity between units across other characteristics that may impact democratic quality. It is to this exact problem that we now turn.

The Problem of Unobserved Heterogeneity

The difficulty with identifying the effect of party system fragmentation on these outcomes is that the number of parties is endogenous to many other party system characteristics. For example, the relationship between fragmentation and the representation of underprivileged groups is likely to be confounded by the very mobilization of those groups. Such mobilization can explain the independent variable (number of parties) and the dependent variable (representation). Similar arguments can be made about most other outcomes.

Because many variables can confound the relation between party-system fragmentation and an outcome of interest, it is hard to estimate its effect in a standard conditioning-on-observables framework. To do so, one would need to identify and control for all possible confounders. However, this assumes researchers can identify all those confounders, let alone collect appropriate data to measure them. We shall see whether the existing evidence points towards that direction. If so, one would expect some shared agreement in the literature as to what those relevant confounders are. In what follows, we provide the first systematic attempt to assess the degree of similarity between covariates included among studies looking at the effect of party system fragmentation on the same outcome of interest.

We reviewed the overlap in the controls used by empirical papers cited in the previous subsection, which empirically assess the effect of party-system fragmentation on outcomes related to the quality of democracy. For each paper, we collected the list of controls used in the analyses. We then built all possible dyads of papers and counted the number of controls that were common across the two papers. When a given paper has models with different sets of controls, we count all controls used in all models to provide the papers with a better chance of having an overlap in control variables. We built these dyads by outcome variables because the relevant controls may differ depending on the outcome the authors are interested in. This means that we do not build and compare dyads of papers that analyse different outcomes.[4] For each dyad, we calculated the proportion of overlap by dividing the number of overlap controls by the total number of controls in the paper with the lower number of control variables. This gives us an upper bound of the overlap between the two papers in each dyad. Doing so leaves us with 48 dyads.

Our goal is not to point fingers but to illustrate the complexity and interconnectedness of social and political phenomena. All authors in the papers we surveyed put forward compelling and valid reasons why they use specific variables as controls. Our point is to show that there are many such variables that one may deem relevant, that experts vary in their judgements, and that in some cases it may not be possible to measure and account for all of them accurately.

The results of this exercise are shown in Fig. 1. The Figure plots the density of the proportion of overlap between the control variables used in the dyads of the papers we analyse. The Figure clarifies that it is difficult to agree on the appropriate set of controls needed to assess the effect of party-system fragmentation on a given outcome. On average, there is a 32 per cent overlap in the control variables used by two papers drawing on the same outcome. Even without any readily available benchmark (we are not aware of such an exercise having been

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[4]Whenever the same control is added in two different studies but measured slightly differently (for example, electoral disproportionality vs. the size of the electoral district; compulsory voting vs. sanctions for non-voters), we count it as an overlap. This increases the odds of finding overlaps.
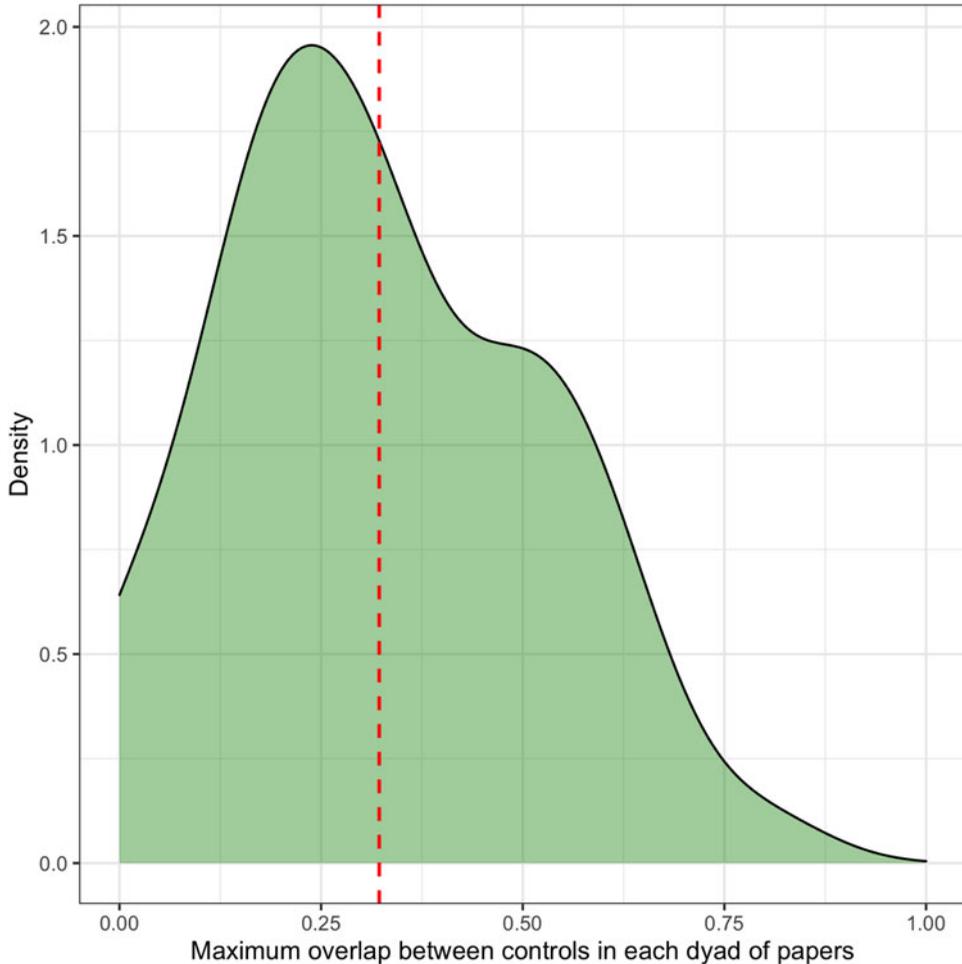
Figure 1. Is there a consensus on which control variables to use? Comparing control variables in dyads of cited papers
Notes: The plot shows the density of the maximum proportion of overlap in the control variables used in each dyad of papers that test the effect of party-system fragmentation on one of the outcomes discussed in the theory section. The vertical red line represents the mean proportion of overlap (0.32).

conducted in the past), this percentage suggests the absence of a consensus in the literature as to what variables would enable unbiased estimation of the causal effect of party-system fragmentation on outcomes commonly used as indicators of democratic quality. This highlights the motivation for the design-based identification strategy adopted in this study, to which we now turn.

Data and Measurement

To contribute to the debate about whether party system fragmentation affects democratic quality, we need to examine outcomes similar to those used in previous literature. We thus take each of the outcomes discussed in the earlier sections and look for high-quality indicators to measure them. Our focus is on country-level performance indicators of democratic quality and expert evaluations specifically produced with comparative research in mind. Because some of the concepts are often hard to measure, we use multiple indicators for each dimension whenever possible. In addition to these outcomes, we also include a set of summary indices included in V-Dem, which measure the extent to which each country comes close to the ideals of participatory, liberal,

electoral, egalitarian, and deliberative democracy (Coppedge et al. 2017).[5] Finally, for dimensions operationalized using more than one indicator, we also use a summary measure, which we obtain by extracting the first component of a principal component analysis (PCA). Doing so helps increase the precision of the estimated effects, mitigating concerns that effects are non-significant due to measurement error. By the same token, although we use multiple outcomes and our analyses could be subject to multiple hypothesis testing, we do not adjust the standard errors to make the estimation more conservative to null findings.

The complete list of outcomes and their source are summarized in Table 1. First, for each dimension of democracy discussed in our theory section, the table lists previous research that has connected party-system fragmentation to that dimension (be it theoretical or empirical). Then, it lists the specific indicators with which we tap that dimension, which will serve as outcome variables in the empirical models. Many of these outcomes come from the V-Dem project (Coppedge et al. 2017). Given that V-Dem provides a series of indicators, we include several in our models whenever they tap the same variables that previous literature has suggested might be affected by the number of parties. In addition, we collected data from the World Bank for outcomes not available in V-Dem. Finally, the variable measuring the distance to the next election was calculated by counting the number of months between each election and the following one.

By looking into such an encompassing range of outcomes, we will have a more comprehensive understanding of the impact of party-system fragmentation. Different scenarios are possible. Party-system fragmentation could improve or worsen the quality of democracy across different dimensions. Alternatively, the effect could be mixed, such that party-system fragmentation improves some dimensions of the quality of democracy but worsens others. This would suggest that the move from a system with few parties to one with more parties involves tradeoffs. The implication for policy would be that fragmented party systems might be a good fit for societies with specific characteristics but a bad fit for others. Finally, a last possibility is that party-system fragmentation has a negligible effect across all dimensions of democratic quality.

Our analyses draw upon 320 elections in 38 countries worldwide with an electoral threshold. As we discuss in the following section, such a threshold is necessary for us to apply our identification strategy. We draw on data from Dinas, Riera, and Roussias (2015b), which we update by adding more recent elections, and on data from the Comparative Manifesto Project (CMP) (Volkens et al. 2015). We use the CMP data for parliamentary parties since this allows us to retrieve their ideological position, which will be important in the analyses of heterogeneity based on the pre-treatment level of polarization. We add data from non-parliamentary parties (typically absent from the CMP data) retrieved from the updated Dinas, Riera, and Roussias (2015b) dataset.[6] This means that, whenever available, we include elections held between 1946 and 2018. Most of our elections occurred in the following decades: 1990s, 2000s, and 2010s. Table 2 provides a list of these elections. We include the first election using a fixed or effective nationwide representation threshold for a given country and follow all elections after that.

Empirical Strategy

Our identification strategy leverages quasi-exogenous variation stemming from fixed thresholds to parliamentary representation.[7] In elections with fixed thresholds of representation, some

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[5]These measures ask experts how much each case came close to each of these ideals. The V-Dem documentation provides an in-depth description of what each of the ideals means (Coppedge et al. 2017).

[6]It should be noted that the CMP occasionally does not include data for some parliamentary parties. While using their data is important for the analyses of heterogeneity, doing so also means we slightly underestimate the number of parties. To address this concern, Figure D.6 in the Online Appendix replicates our main analyses using only the Dinas, Riera, and Roussias (2015b) dataset. The results remain very similar.

[7]Following previous literature on threshold-based RD's (for example), we also include countries with an effective (national) threshold of representation (for example, the Netherlands).

Table 1. Description and source of the outcome variables used in the analyses

Indicator	References	Measures	Source	Description
Level of democracy		Egalitarian democracy index	VDem	Extent to which the ideal of egalitarian democracy is achieved.
		Deliberative democracy index	VDem	Extent to which the ideal of deliberative democracy is achieved.
		Participatory democracy index	VDem	Extent to which the ideal of participatory democracy is achieved.
		Liberal democracy index	VDem	Extent to which the ideal of liberal democracy is achieved.
		Electoral democracy index	VDem	Measures the extent to which the ideal of electoral democracy is achieved.
Provision of public goods	Chhibber and Nooruddin (2004), Teitelbaum and Thachil (2010), Sáez and Sinha (2010)	Provision of public (instead of particularistic) goods	VDem	How 'particularistic' or 'public goods' are most expenditures.
		Power distributed by social groups	VDem	Extent to which all social groups have equal political power.
Representation of underprivileged groups	Kostadinova (2007), Trebbi, Aghion, and Alesina (2008), Wilkinson (2006)	Power distributed by sexual orientation	VDem	Extent to which LGBTs enjoy roughly equal political power than heterosexuals.
		Representation of disadvantaged groups	VDem	How well represented disadvantaged social groups are in the national legislature.
Legislative representation of women	Tremblay (2007), Kostadinova (2007), Norris and Inglehart (2001), Yoon (2004)	Percentage of women in parliament	VDem	–
		Power distributed by gender	VDem	Extent to which women and men have equal political power.
Electoral participation	Franklin and de Miño (1998), Geys and Heyndels (2006), Henderson and McEwen (2010), Jackman (1987), Jackman and Milner (1995), Lehoucq and Wall (2004), Radcliff and Davis (2000), Kostadinova and Power (2007), Banducci and Karp (2009)	Turnout	VDem	–

(*Continued*)

Table 1. (*Continued.*)

Indicator	References	Measures	Source	Description
Government instability	Downs (1957), Kreppel (1997)	Index of fractionalization of government	World Bank	Probability that two randomly picked ministers will be from different parties.
		Distance to the next election (in months)	Elaborated by the authors	Months between treatment election and next (inverted).
Accountability	Powell and Whitten (1993); Whitten and Palmer (1999); Hobolt, Tilley, and Banducci (2013)	Vertical accountability index	VDem	Extent to which citizens can hold government accountable.
		Horizontal accountability index	VDem	MPower of state institutions to oversee the government.
		Diagonal accountability index	VDem	Range of actions that citizens, civil society organizations CSOs, and an independent media can use to hold government accountable.
Corruption	Rose-Ackerman (1978), Schleiter and Voznaya (2014), Chang and Golden (2007), Charron (2011)	Public sector corruption	VDem	How routinely public sector employees grant favours in exchange for bribes, kickbacks, or other material inducements.
		Executive embezzlement and theft	VDem	How often members of the executive or their agents, steal, embezzle, or misappropriate state resources for personal or family use.
		Executive bribery and corruption	VDem	How routinely members of the executive grant favours in exchange for bribes, kickbacks, or other material inducements.

Table 2. List of elections included in the analyses

Country	Elections included
Albania	1992, 1996, 1997, 2001, 2005, 2009, 2013, 2017
Armenia	1995, 1999, 2003, 2007, 2012, 2017
Austria	1994, 1995, 1999, 2002, 2006, 2008, 2013, 2017
Bolivia	1997, 2002, 2005, 2009
Bulgaria	1990, 1991, 1994, 1997, 2001, 2005, 2009, 2013, 2014, 2017
Croatia	1992, 1995, 2000, 2003, 2007, 2011, 2015, 2016
Cyprus	1996, 2001, 2006, 2011, 2016
Czech Republic	1990, 1992, 1996, 1998, 2002, 2006, 2010, 2013, 2017
Denmark	1971, 1973, 1975, 1977, 1979, 1981, 1984, 1987, 1988, 1990, 1994, 1998, 2001, 2005, 2007, 2011, 2015
Estonia	1992, 1995, 1999, 2003, 2007, 2011, 2015
Georgia	2004, 2008, 2012, 2016
Germany	1949, 1953, 1957, 1961, 1965, 1969, 1972, 1976, 1980, 1983, 1987, 1990, 1994, 1998, 2002, 2005, 2009, 2013, 2017
Greece	1993, 1996, 2000, 2004, 2007, 2009, 2012 (May) 2012 (June), 2015 (January), 2015 (September)
Hungary	1990, 1994, 1998, 2002, 2006, 2010, 2014, 2018
Iceland	2003, 2007, 2009, 2013, 2017
Israel	1949, 1951, 1955, 1959, 1961, 1965, 1969, 1973, 1977, 1981, 1984, 1988, 1992, 1996, 1999, 2003, 2006, 2009, 2013, 2015
Italy	1994, 1996, 2001, 2006, 2008, 2013, 2018
Latvia	1993, 1995, 1998, 2002, 2006, 2010, 2011, 2014, 2018
Lithuania	1992, 1996, 2000, 2004, 2008, 2012, 2016
Macedonia	1998
Mexico	2000, 2003, 2006, 2009, 2012, 2015
Moldova	1994, 1998, 2001, 2005, 2009, 2010, 2014
Montenegro	2006, 2009, 2012, 2016
Netherlands	1946, 1948, 1952, 1956, 1959, 1963, 1967, 1971, 1972, 1977, 1981, 1982, 1986, 1989, 1994, 1998, 2002, 2003, 2006, 2010, 2012, 2017
New Zealand	1996, 1999, 2002, 2005, 2008, 2011, 2014, 2017
Norway	1989, 1993, 1997, 2001, 2005, 2009, 2013, 2017
Peru	2006, 2011, 2016
Poland	1993, 1997, 2001, 2005, 2007, 2011
Romania	1992, 1996, 2000, 2004, 2008, 2012, 2016
Russia	1993, 1995, 1999, 2003, 2007, 2011
Seychelles	1993, 1998, 2002, 2007, 2011, 2016
Slovakia	1990, 1992, 1994, 1998, 2002, 2006, 2010, 2012, 2016
Slovenia	2000, 2004, 2008, 2011, 2014, 2018
South Korea	1988, 1992, 1996, 2000, 2004, 2008, 2012, 2016
Sweden	1970, 1973, 1976, 1979, 1982, 1985, 1988, 1991, 1994, 1998, 2002, 2006, 2010, 2014, 2018
Taiwan	1992, 1995, 1998, 2001, 2004, 2008, 2012, 2016
Turkey	1983, 1987, 1991, 1995, 1999, 2002, 2007, 2011, 2015 (June), 2015 (November)
Ukraine	1998, 2002, 2006, 2007, 2012, 2014

Note: German elections prior to 1990 refer to West Germany.

parties end up narrowly missing or crossing that cut-off point, thereby changing the number of parliamentary parties and the seat allocation among them. Previous studies have exploited such variations using regression discontinuities (RD) (Abou-Chadi and Krause 2018; Dinas and Foos 2017; Dinas, Riera, and Roussias 2015b; Valentim 2021). Because we are interested in outcomes at the party-system level, not the party level, our challenge lies in transposing this logic to that level. We do so by taking advantage of variations in whether parties with vote shares close to the electoral threshold end up slightly above or below that threshold, which we use as an instrument for the overall number of parties in the system.[8]

Following previous literature, we measure fragmentation with the effective number of parliamentary parties (ENPP) (Laakso and Taagepera 1979), which weighs parties according to their

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[8]For an early attempt to apply this idea in the study of law making see Dinas, Foos, and Riera (2015a). For a recent similar application to the study of government stability, see Carozzi, Cipullo, and Repetto (2022).

seats in parliament. As shown later (Figure D.1 of Appendix D), the results are substantively identical when we use the absolute number of parliamentary parties as our treatment variable.

Our instrumental variable draws on the idea of the RD as a local randomized experiment, whereby the forcing variable assigns the treatment stochastically in the area of the threshold. According to this logic, there will be a window on both sides of the threshold where treatment assignment becomes as-if random, and the RD mimics a randomized experiment (Branson and Mealli 2018). We build on this idea by using as an instrument a measure that captures the difference between the actual number of parties in an election and the one we would get in a counterfactual scenario where parties just above the threshold would not have made it to parliament. To define what it means to be 'just above' the threshold, we draw a bandwidth between the threshold and 1.5 times its value. We assume that all parties within that bandwidth made it into parliament by a margin so narrow that we can consider it to be as-good-as-random.

The upper bound of this bandwidth (given that the lower bound is the electoral threshold itself) was chosen following the same practice employed in the studies that use electoral thresholds as cut off points in an RD framework. Using a dataset that includes the same set of elections but now unfolded at the party level, we applied RD's to estimate the effect of crossing the threshold on a set of party-level outcomes; that is, each party's vote share, absolute seats, and seat share. Although we are not interested in the outcome of these analyses, we use them to calculate the optimal bandwidth using the 'rdrobust' package (Calonico et al. 2017).[9] The mean optimal bandwidth in these three analyses is 48 per cent above the threshold, which we round to an intuitive upper bound of 50 per cent above the threshold. This means that our bandwidth will encompass all parties whose vote share lies between the electoral threshold and 1.5 times its value.[10] Then, we compare how much these parties add to the ENPP in that election by comparing the party system that came out of each election with a counterfactual party system; that is, where the parties that narrowly made it to parliament would have failed to do so. Our instrument is the difference between the two. Figure A.1 in the Online Appendix shows the distribution of this instrument.

The identifying assumption in this approach is that, while the number of parties is endogenous to other political dynamics, such factors do not jump at the same cut-off. For example, we expect underlying cleavages to differ between multi- and two-party systems. We do not expect such a cleavage structure to predict whether a given party will be above or below the representation threshold. This allows us to exogenize the number of parties that enter parliament in a given legislative period and thus estimate its effect on the outcomes discussed in the previous section. To avoid endogeneity concerns, all outcomes will be measured at the end of the legislature at the beginning of which the treatment and instrument are measured (that is, in the next election year).

Figure 2 provides a visual intuition of this estimation strategy using data from the Bulgarian 2017 election, where an electoral threshold of 4 percentage points was in place. Essentially, we assume that the party 'Will', which received 4.15 per cent of the national vote, made it to parliament by chance. However, a different configuration of the election under the same conditions could have resulted in variation in parties' vote shares that, albeit trivial, would be sufficient to leave Will out of parliament. In this example, our capacity – bounded by the electoral threshold and the value 1.5 times higher than that threshold – means that we take the bandwidth between 4 and 6 percentage points (the red area in Fig. 2). The only party falling within that bandwidth is the party Will, which means that our instrument will be comparing the actual party system (panel on the left-hand side of Fig. 2) to a counterfactual one where this party would have failed to make it to parliament (panel on the right-hand side of Fig. 2).

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[9]To make this distance comparable across elections with different electoral thresholds, we normalize the vote share of each party as a proportion of the electoral threshold in its country.

[10]The choice of the specific bandwidth is somewhat arbitrary. To make sure the specific value we choose is not driving the results, in Figure D.2 we employ multiple alternative bandwidths (from 10 per cent to 100 per cent around the threshold). The results remain very similar.

Figure 2. The intuition behind the instrumental variable, using data from the Bulgarian election in 2017

The last step is to know how much the parties within this bandwidth add to the ENPP in the country. To do so, we start by calculating the ENPP for the election. Then we estimate what the ENPP in the country would be if the parties within the bandwidth had not made it to parliament.[11] The value of our instrument is then calculated by taking the difference between the two values.

As with any IV analysis, we need a solid first stage: the number of parties just above the threshold needs to be a strong predictor of the overall level of ENPP in a given election. We report the first stage in Fig. 3. The left-hand panel shows the correlation between the instrument (number of parties just above) and the treatment (ENPP). The right-hand panel plots the distribution of the first stage F-test for the models with all the outcomes we draw upon. Since there are some missing values in our data, the F-test yields slightly different values depending on the specific outcome one draws upon. However, as this panel shows, regardless of the outcome, all models yield a strong first stage. The mean value of the F-test is 32.27.

Beyond the first stage, we need to assess how our instrument performs with respect to the two other major IV assumptions, ignorability and exclusion. For ignorability to hold, our instrument needs to be orthogonal to potential outcomes. Ignorability holds in our setup as parties within the neighbourhood around the cut off cannot fully control whether they will be slightly above or below it. As shown in the Online Appendix (Figure A.2), a McCrary test executed in the unfolded, party-level dataset fails to reject the null of no sorting ($p = 0.91$).

For exclusion to hold, the only causal path through which our instrument affects democratic outcomes should be via its effect on party-system fragmentation. Figure A.3 of Appendix A provides suggestive evidence against violations of this assumption. It shows the results of several RDs on the party-level dataset using forty-one placebo outcomes, of which only one (less than what one would expect out of chance) yields a statistically significant result in both of the model specifications we employ. Another possible threat to exclusion is that party systems with more parties just above the threshold may have more parties in general. For this reason, our models control for

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[11]The ENPP formula uses the sum of the total seats in a given national parliament. Because (in this step) we are calculating the ENPP if the parties within the bandwidth had not made it to parliament, we discount the seats won by these parties. In so doing, we make one assumption: we assume that the counterfactual is a situation where the seats won by parties within the bandwidth would be split by the remaining parties in a perfectly proportional fashion. We believe this is a good approximation for all countries in our sample, all of which use proportional or mixed systems – and in that case, the threshold applies only to the proportional tier.
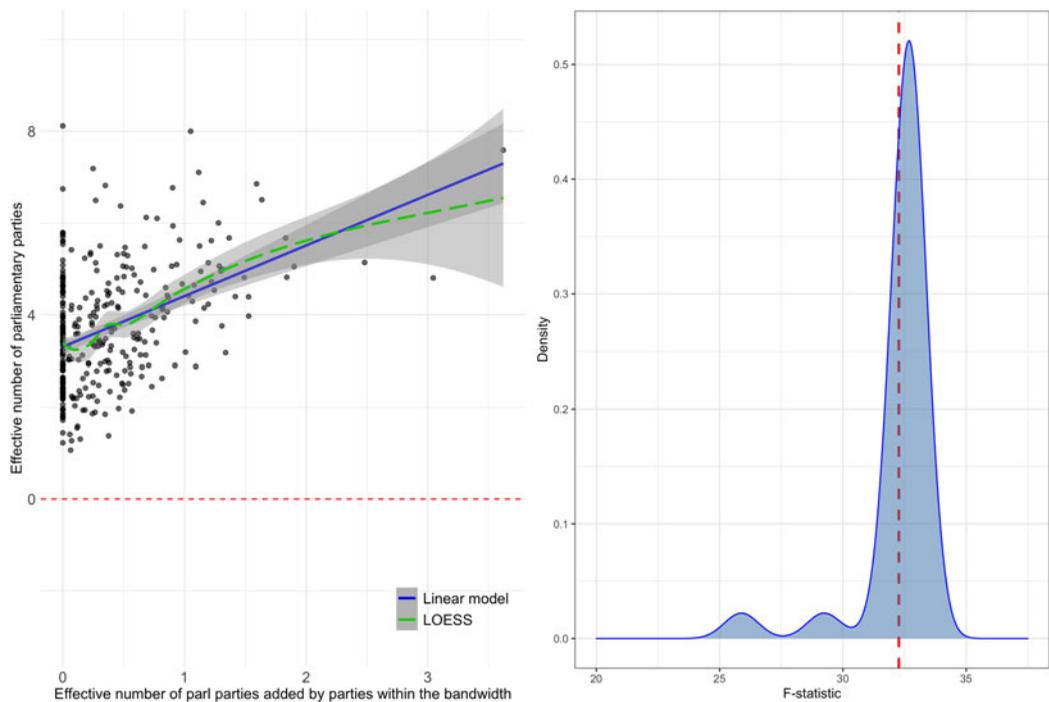
Figure 3. First-stage estimates of our estimation strategy
Note: The vertical red line in the right-wing panel represents the average value of the *F*-test.

the number of parties within the same bandwidth below the threshold.[12] Another way exclusion could be violated is if fragmentation also changes the ideological outlook of the specific parties that enter parliament. If this were the case, we could end up with different constellations of parties in parliament in a way that is independent of the level of fragmentation. In Figure A.3 in the Online Appendix, we proxy for this by using the party's left-right placement as an outcome in RD models on the party-level dataset. We find no evidence that parties that narrowly enter parliament have a different left-right placement from parties that narrowly failed to enter parliament.

It should be noted that while our strategy to estimate the first stage builds on an intuitive understanding of the RD, it draws on a conceptualization of the RD as a local randomized experiment (Cattaneo, Frandsen, and Titiunik 2015). This implies as-good-as-random assignment of treatment status in the neighbourhood of the threshold. Standard RD can work under a weaker assumption at the cut-off, namely the continuity of potential outcomes while crossing the threshold.[13] In the Online Appendix we report a different approach to estimate the first stage, which approximates this logic more closely. As shown in Figure D.8, the results remain similar to the main ones reported bellow: we find null effects across the board.

Findings

Figure 4 shows the effect of the number of parties on our outcome variables. All outcome variables have been standardized to make comparisons easier across outcomes measured in different

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[12]Figure D.5 in the Online Appendix provides an alternative specification where we do not control for the number of parties within the bandwidth below the threshold but, instead, the number of all non-parliamentary parties. The results remain very similar.

[13]The weaker identifying assumption, however, typically comes at the cost of stronger modelling assumptions when extrapolating point estimates at the cut-off point (Branson and Mealli 2018).
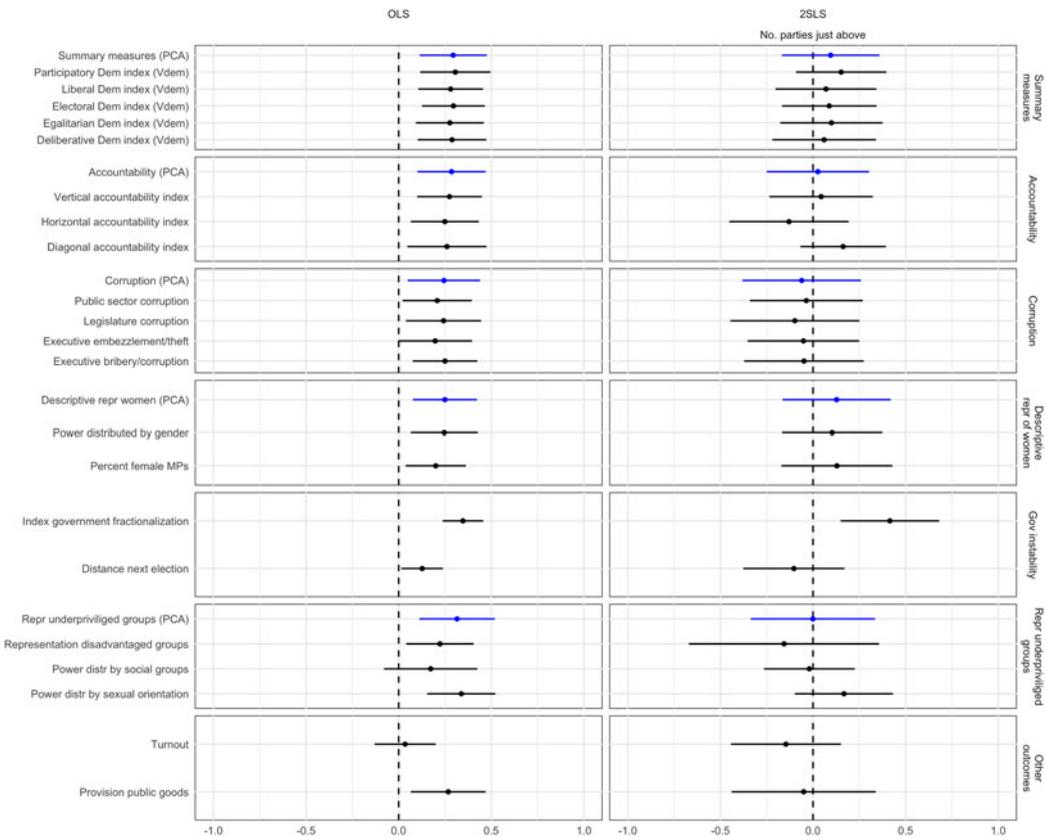
Figure 4. Effect of the number of parties on the quality of democracy
Notes: Lines represent 95 per cent confidence intervals. Standard errors are clustered by country. All dependent variables are standardized.

scales. Apart from our 2SLS analyses, we also include the OLS models where we simply regress each outcome in election years on the ENPP in that election – as done by most previous research. Although some previous studies rely mostly on bivariate analyses (Lijphart 2012), most include controls for variables that are likely to confound the relationships of interest. Our goal with the inclusion of this set of analyses is not to provide a direct comparison between our results and those of past research. Instead, in including these OLS models we hope to provide a benchmark of the size of the effects of our 2SLS models and get a sense of the direction in which non-causal models can bias the relations of interest – if at all. This point is particularly important since, as we will discuss, our findings are mostly null. For this reason, the comparison with the OLS models provides a way of assessing whether these null results are driven by smaller coefficients or simply by more noisy estimates.

As the Figure shows, many of the findings from the OLS models align with previous literature, especially regarding the representation of minorities, descriptive representation of women, and corruption – all of which increase as the number of parties increases. Moreover, the summary measures suggest that fragmentation is associated with better-working democracies.

These effects disappear when we turn to the 2SLS estimates. The only effect that remains significant at the 95 per cent level is the one on the index of government fractionalization. As one might expect, party systems with more parties lead to more fractionalized governments. Interestingly, however, that does not make legislatures more short-lived – if anything, more fragmented party systems have longer-lasting legislatures. As for the remaining outcomes, we find no

evidence of the relations predicted by previous literature. No other outcome, apart from government fractionalization, reaches statistical significance. Moreover, in many instances (for example, accountability or the representation of underprivileged groups), not even the direction of the effects is robust to different proxies of the same dimension.[14]

Benchmarking the magnitude of the findings against other studies is not possible for all outcome indicators because not all had been used in previous research. Still, when possible, such a comparison suggests that the magnitude of the effects is small. For example, when it comes to the effect on the percentage of female MPs, we obtain an estimate of 0.13 standard deviations. This represents 38 per cent of the effect size found by Tremblay (2007), whose average effect size in Table 2 (of their paper) is 0.34 standard deviations. Another effect that we can benchmark against previous literature is the one on turnout. The unstandardized effects we find (−1.893) represent 37 per cent of what Radcliff and Davis (2000) find in their comparative analyses – the average effect size in Table 1 in their paper is −5.154.

To make sure that the null finding is not being driven by the specific model specification we choose, we replicate the 2SLS analyses using a large number of different specifications. We use two different measures of the treatment variable, the effective and absolute number of parties in parliament combined with three different sets of fixed effects: none, country fixed-effects, and country-and-year fixed effects. We also run additional models with the log transformations of the instrument.[15] Finally, we include a specification where we move the bandwidth around the threshold we use to calculate our instrument. Concretely, we use bandwidths between 10 and 100 per cent of the threshold size.[16] We remove the index of government fractionalization as an outcome because, as discussed above, this is the only outcome on which we find a significant effect. Our goal here is to check whether that governmental fractionalization affects any other outcome, which is why we focus on the remaining dependent variables we analyse.

These combinations yield a total of 18,200 models, which are summarized in Fig. 5. As shown in Panel A, the standardized coefficients of the whole set of models approach a normal distribution centred around zero. These coefficients have a mean of 0.012 and a standard deviation of 0.129. Panel B shows that the p-values do not cluster near conventional statistical significance thresholds. The mean p-value is 0.498, with a standard deviation of 0.286. Finally, Panel C shows the correlation between the F-statistic in the first stage and the absolute standardized coefficient we obtained in the second stage. This exercise aims to test whether the null results we find are the product of a weak first stage. Thus, we would be especially concerned about finding a positive correlation between the two variables. As Panel C shows, however, that is not the case. If anything, the two variables are negatively correlated, which rules out the possibility that the null effects are the product of a weak first stage. It is, however, to be expected since a weaker first stage can generate a bias towards the OLS estimates, albeit with wide uncertainty (Angrist and Pischke 2008).

How different are the estimates from our approach from those of the OLS? Answering this question is crucial to ensure that the difference between the OLS and 2SLS results is not simply driven by the 2SLS being less precise. To that end, we take the set of models calculated for the analyses shown in Fig. 5. For each outcome, we calculate the mean coefficient from the 2SLS models, which we compare to the coefficient found in the OLS models shown in Fig. 4.

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[14]When it comes to the case of turnout, it could be that when fewer parties narrowly make it to parliament, more voters are likely to be disappointed because the party they support narrowly failed to enter parliament. This would represent an alternative channel through which our instrument could affect that specific outcome. In Figure A.4 in the Online Appendix, we look into this possibility by checking whether the number of wasted votes correlates with our instrument. We plot the sum of the vote share won by parties in the parliament against our instrument. If anything, the correlation is negative – meaning that more votes are wasted in elections where more parties make it to parliament. Moreover, it should be noted that this argument is unlikely to apply to any of the other outcomes we draw upon.

[15]Figure A.6 in Appendix A shows the first stage when we use this transformation of the instrument.

[16]As discussed below, we report the results of this exercise in isolated fashion in Figure D.2 in the Online Appendix.
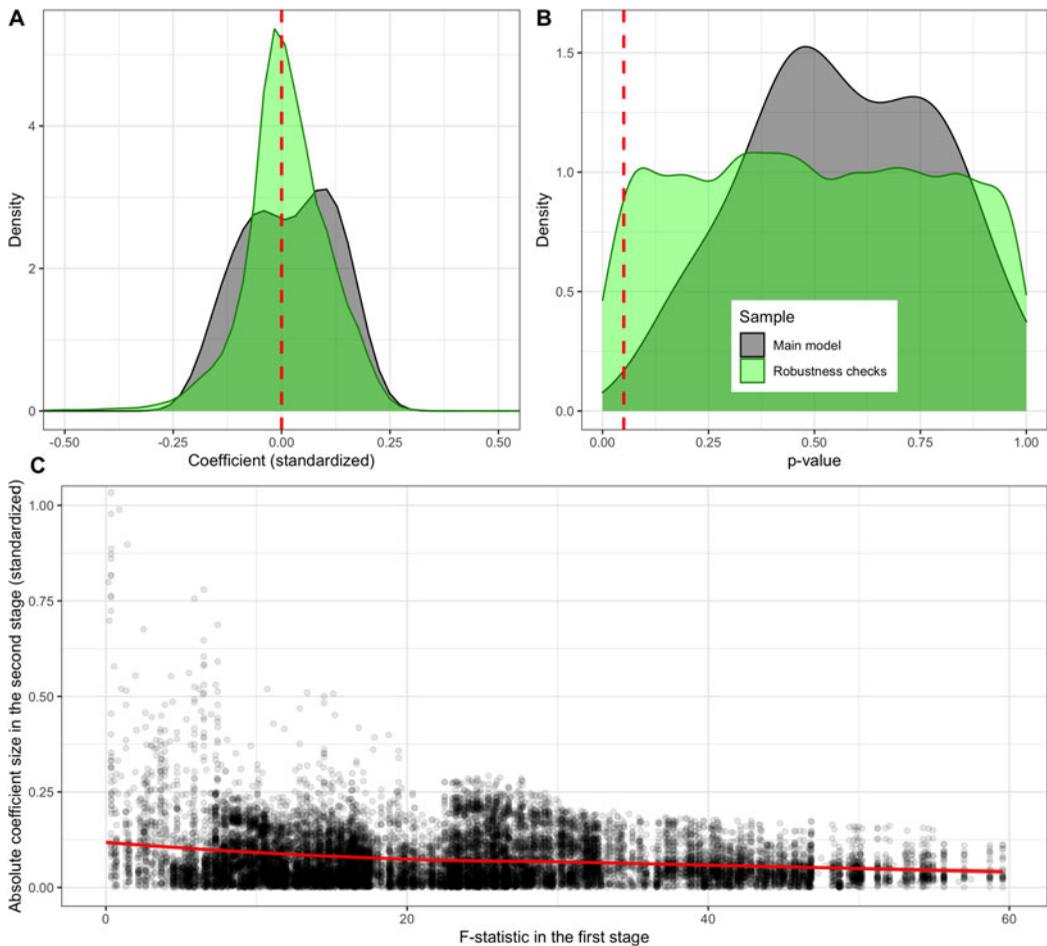
Figure 5. Standardized coefficients and p-values from 18,200 models using different specifications
Note: The vertical red line in panel B represents the critical value of 1.96.

The results of this exercise, shown in Table 3, show that the difference in results is not simply driven by the 2SLS being less precise. Twenty-four of twenty-six 2SLS effect sizes are half the size of the OLS coefficient or smaller. The effect on turnout is above that (at 1.27), but it goes in the opposite direction. Moreover, the OLS model is far from significant for this outcome. The only model where the effect size goes in the same direction as the OLS, and is bigger, uses government fractionalization as the outcome. This, however, is in line with the findings from Fig. 4, according to which a higher number of parties leads to more fragmented governments but has no effect on any other outcome. Moreover, it should be noted that nine outcomes go in the opposite direction between the 2SLS and the OLS models (as indicated by a negative value in the last column of the table).

Additional Robustness Checks

The Online Appendix provides additional analyses. Appendix B looks at long-term effects. It shows that the effects do not become stronger if we increase the time gap between the measurement of treatment and outcome. Appendix C deals with potential concerns stemming from the fact that our models can only retrieve a local effect. Figure C.1 shows that the results are not stronger if we focus on above-median thresholds, where the parties driving the effects have higher

Table 3. Comparison of effect sizes across OLS and 2SLS models

Variable	OLS coefficient	OLS p-value	Mean 2SLS coefficient	Proportion
Summary measures (PCA)	0.29	**0.00**	0.06	0.21
Participatory Dem index (Vdem)	0.31	**0.00**	0.08	0.27
Liberal Dem index (Vdem)	0.28	**0.00**	0.05	0.19
Electoral Dem index (Vdem)	0.30	**0.00**	0.05	0.19
Egalitarian Dem index (Vdem)	0.28	**0.00**	0.05	0.17
Deliberative Dem index (Vdem)	0.29	**0.00**	0.06	0.22
Accountability (PCA)	0.29	**0.00**	0.02	0.09
Vertical accountability index	0.27	**0.00**	0.03	0.10
Horizontal accountability index	0.25	**0.01**	−0.03	−0.13
Diagonal accountability index	0.26	**0.02**	0.07	0.29
Corruption (PCA)	0.24	**0.02**	−0.05	−0.21
Public sector corruption	0.21	**0.03**	−0.03	−0.14
Legislature corruption	0.24	**0.02**	−0.06	−0.26
Executive embezzlement/theft	0.20	**0.05**	−0.02	−0.11
Executive bribery/corruption	0.25	**0.01**	−0.09	−0.34
Descriptive repr. women (PCA)	0.25	**0.01**	0.05	0.19
Power distributed by gender	0.25	**0.01**	0.06	0.24
Percentage of female MPs	0.20	**0.02**	0.03	0.14
Index government fractionalization	0.35	**0.00**	0.41	1.17
Distance next election	0.13	**0.03**	−0.07	−0.50
Repr. underprivileged groups (PCA)	0.31	**0.00**	0.02	0.08
Representation disadvantaged groups	0.22	**0.02**	0.00	0.01
Power distr. by social groups	0.17	0.17	0.00	0.01
Power distr. by sexual orientation	0.34	**0.00**	0.05	0.16
Turnout	0.03	0.67	−0.04	−1.27
Provision public goods	0.27	**0.01**	−0.01	−0.05

Notes: Bold values indicate models with an OLS p-value below 0.1. 2SLS coefficients are the mean of the results for each outcome from different specifications of the 2SLS models.

vote shares. Figure C.2 shows that the predictive power of our instrument is independent of the baseline number of parties.

Appendix D also reports several alternative model specifications. To ensure that the specific measure of fragmentation is not driving the results, Figure D.1 replicates the main results shown in Fig. 4 using the absolute (instead of effective) number of parliamentary parties as treatment. The results remain similar to the main ones. Figure D.2 shows that the effects remain similar if we change the bandwidth used to calculate our instrument in the first estimation strategy. Figure D.3 shows that the results do not change if we use the logged number of parties above the threshold as our instrument. To ensure the findings are not driven by our sample being too heterogeneous, Figure D.4 in the Online Appendix replicates the analyses restricting the sample to European countries – the region from which we have more observations. The results remain very similar in both sets of subsamples. Figure D.5 reports an alternative specification. Instead of controlling for the non-parliamentary parties within the same bandwidth as our instrument – but below the threshold – we control for the total number of non-parliamentary parties. The results remain similar. Figure D.6 replicates the analyses using the Dinas, Riera, and Roussias (2015b) dataset instead of the CMP data to obtain data on parliamentary parties. Again, the results remain similar. Finally, we report the main estimates using the 'continuity-on-potential-outcomes' logic of the RD to construct our instrument. In particular, we instrument the treatment status of the party closest to the threshold (that is, whether that party happens to cross the cutoff point or not). As shown in Figure D.8, the results remain similar to the main ones.

Subsample Analyses

The analyses in the previous section show that party-system fragmentation has, on average, no effect on the quality of democracy. A potential concern is that this overall null effect can hide
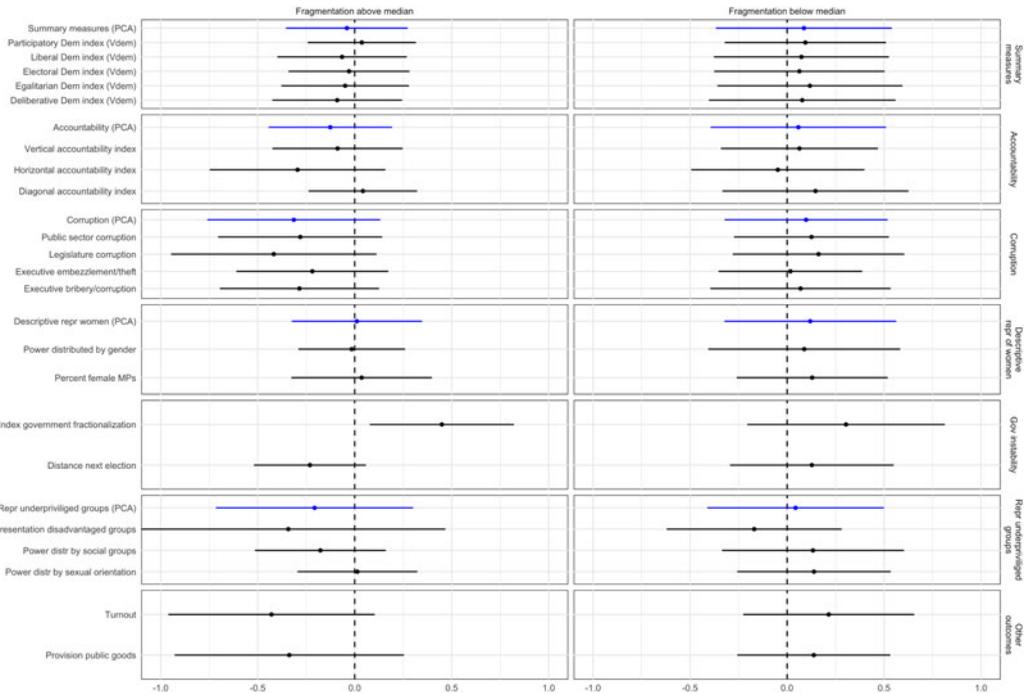
Figure 6. Effect of party-system fragmentation on the quality of democracy, split by pre-treatment level of fragmentation
Notes: Lines represent 95 per cent confidence intervals. Standard errors are clustered by country. All dependent variables are standardized. Dependent variables are measured at the end of the legislature at the beginning of which the treatment is measured.

heterogeneous effects according to other party-system characteristics. We look into two such moderators.

A first concern is that the added value of having more parties in parliament is only felt when the pre-treatment number of parties is low. The rationale is that the marginal returns from having an additional party in parliament can vary depending on the pre-existing number of parties. The effect of party system fragmentation is not linear; it follows an inverse U-shaped function. An increase in the number of parties has positive consequences on democratic outcomes when the pre-treatment number of parties is low, but has a negative effect when the pre-treatment number of parties is high (for similar arguments, see Carey and Hix 2011; Salas 2018; Schleiter and Voznaya 2014; Taagepera, Selb, and Grofman 2014).

To test for this possibility, we replicate our analyses on elections in countries whose level of ENPP in the election before the treatment was below the overall median ENPP and on elections in countries whose level of ENPP in the election before the treatment was above the overall median ENPP. As shown in Fig. 6, we find no evidence of an effect in any of these two subsamples.

The second party-system characteristic that may operate as a moderator is polarization. Party systems with the same number of parties can vary in their levels of polarization, which can be expected to fundamentally change the dynamics of the party system (Dalton 2008; Sartori 1976). For example, an intuitive hypothesis would be that party system fragmentation affects democratic outcomes only insofar as the parties occupy different positions along the ideological continuum, meaning that they channel voters' grievances with different preferences. In turn, if the parties all cluster around similar ideological positions, an increasing level of fragmentation is likely to not translate into meaningful differences in democratic outcomes.
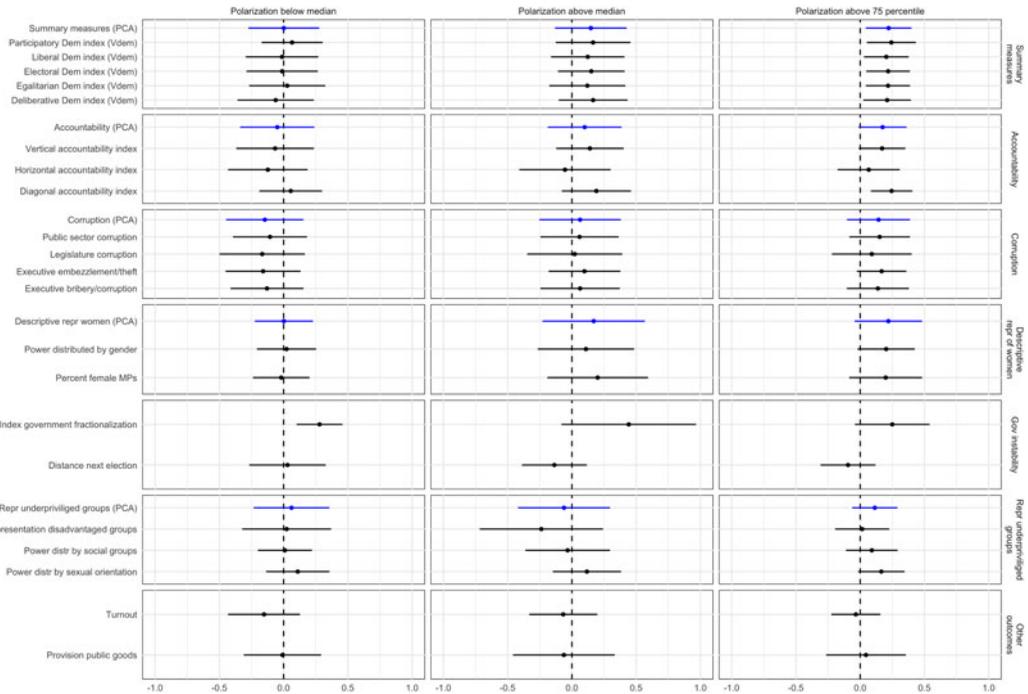
Figure 7. Effect of party-system fragmentation on the quality of democracy, split by pre-treatment level of polarization
Notes: Lines represent 95 per cent confidence intervals. Standard errors are clustered by country. All dependent variables are standardized. Dependent variables are measured at the end of the legislature at the beginning of which the treatment is measured.

To check if our results are conditional on the level of polarization, we calculate the level of polarization of the system using the index proposed by Dalton (2008).[17] Then, we replicate the analyses shown in Fig. 4 three times: once for observations with a polarization score in the treatment election below the median; once for observations with polarization score above median; and once for observations with polarization score above the 75 percentile.

Figure 7 shows the results of these analyses. In the subsample with low levels of polarization, the effects are very similar to the main results. The only effect we find is the one on government fractionalization – even if this effect is not significant in the sample with above-median polarization. All other effects are small and far from significant. The picture changes slightly, however, as we move to more polarized party systems. In the subsample of elections with polarization above the median, and especially in the one with polarization above 75 per cent, the results become more similar to the OLS results shown in Fig. 4. While some of the results do not reach statistical significance, it seems that in these contexts an increase in fragmentation may lead to an increase in accountability, corruption, descriptive representation of women and underprivileged groups, and overall better-working democracies. It does seem that, while party system fragmentation has no causal effect on average, it can affect the quality of democracy in contexts where the level of polarization is very high.

Figure B.3 in the Online Appendix presents a different way of checking whether the results are conditional on the level of polarization. In that Figure, we replicate the analyses on the subsamples of elections where the added value of polarization brought about by parties just above the threshold is higher or lower than its median. The results are similar to the ones shown in

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[17]To calculate this index, we draw upon the election-level do file provided by CMP.

Fig. 7. While not very conclusive, since many results fail to reach statistical significance, they do suggest that fragmentation has a stronger effect on the quality of democracy when polarization is high.

All in all, fragmentation matters but only under limited scope conditions. In the concluding section, we elaborate on this finding in conjunction with the overall null effects.

Conclusion

In 1895, Lowell (1895) argued that, for government to produce good results, parliament needed to have no more than two parties. Numerous subsequent studies have tested this proposition, trying to understand whether an increase in the number of parties is detrimental to the quality of democracy. These studies have struggled with identification issues because the number of parties is endogenous to many other party-system characteristics. We have tried to address this problem using a novel identification strategy that exogenizes party-system fragmentation. Contrary to previous literature, we find that while a higher number of parties leads to more fractionalized governments, it does not affect other democratic outcomes. Moreover, the null effect is robust to a number of alternative model specifications.

We do find, however, one instance in which fragmentation may affect the quality of democracy; that is, in the subsample of elections with very high polarization. Future research may find other moderators that affect the causal relationship between fragmentation and the quality of democracy. Our goal in that regard was not to be exhaustive but to look into the usual suspects that previous research has suggested might moderate this relationship. At the same time, this result should be viewed with care since the moderation is not causal and is subject to omitted variable bias. Still, to the extent that such moderation exists, our findings align with previous research that has argued for the importance of taking into account other party system variables beyond fragmentation (Dalton 2008; Morlino 2011; Rozenas and Alvarez 2012; Sartori 1976).

While many previous studies have drawn upon the effect of party-system fragmentation on several dimensions of the quality of democracy separately, our study is among the few that look into its effect on a large battery of democratic outcomes. Doing so allows us to identify the possible tradeoffs between different dimensions of democracy. Should that be the case, policymakers would have to make country-based decisions on whether the advantages of increasing the number of parties outweighed its disadvantages, given the characteristics of their specific society. That we find no evidence of such tradeoffs, on average, suggests that there is little empirical evidence to sustain that increases in party-system fragmentation should normatively be fostered or dampened – unless, potentially, in very polarized contexts.

The main reason why most previous research expected an effect of party-system fragmentation on the quality of democracy was that systems with more parties would be more likely to have coalition governments. Some authors focused on the negative effects of coalitions, and others on their positive effects. The only significant effect we find across the whole sample is on the level of fractionalization of government, which suggests that this assumption is plausible. However, increasing government fractionalization does not translate into the change in democratic outcomes expected by previous research – unless, again, in very polarized systems.

A possible explanation for our null finding is that party systems with different numbers of parties may have different ways of coping with the diversity of the political groups they accommodate in their legislative bodies. In other words, even if party systems with high and low levels of fragmentation can bring about equally well-functioning democracies, the specific paths by which they reach those endpoints can differ. While the exploration of such mechanisms is beyond the scope of this paper, it represents an interesting avenue for future research.

Our results align with previous work such as that by Morlino (2011), according to whom political competition is a crucial metric to assess the quality of democracy – much more so than the

actual number of parties. Our results are compatible with this view. While free political competition is undoubtedly crucial to ensure a well-working democracy, the exact number of parties in a system is not necessarily so.

That we find little evidence of party-system fragmentation affecting the quality of democracy has important policy implications. There is extensive debate on the relative advantages and disadvantages of party systems with different characteristics – a frequent consideration in debates on electoral reform. However, suppose such debates aim to increase the quality of democracy. In that case, our findings suggest that party-system fragmentation may not be a relevant parameter since it seems to have no clear-cut effect on the quality of democracy.

This being said, it is possible that while the number of parties does not have any effect per se, the parliamentary entry of parties with specific characteristics does. For example, the parliamentary entry of representatives of previously excluded social groups may improve outcomes such as the feelings of external efficacy among members of these groups (Atkeson and Carrillo 2007). Our results do not deny this possibility, but they do suggest that the effect of these newly successful parties is directly driven by the novelty they bring to representative and governing bodies. We find no evidence of an indirect effect, via an increase in the number of political platforms offered to voters.

Finally, a word is warranted on scope conditions. One potential concern with our study is that, by design, we can only study the effect of party-system fragmentation on the quality of democracy in countries with an electoral threshold in place. In practical terms, this means that our analyses can only focus on proportional or mixed systems, as majoritarian systems do not implement electoral thresholds. This being said, we believe that our study provides for a good balance between identification and generalizability. Our identification strategy relies on something other than a case study, which might raise questions about how much the findings can travel to different contexts. Instead, we identify the effect of the number of parties across various countries and time periods, strengthening confidence in the external validity of our findings. In addition, our sample includes a wide array of countries, and we find no evidence that our effects differ across variables are different between proportional and majoritarian electoral systems – such as pre-treatment levels of fragmentation or polarization.

At the same time, most of our countries are democracies. This means we cannot say much about the effects of fragmentation in non-democratic countries. It should be noted, however, that party-system fragmentation is a qualitatively different phenomenon in settings where citizens are not free to form parties and run for elections. In those contexts, it is also affected by the extent to which the ruling elite allows quasi-opposition to take place – which is very different from the dynamics we set out to analyze here.

A final scope condition is that we can only make inferences about the specific outcomes we analyze. While our choice of dependent variables is grounded in previous literature, we cannot rule out that other variables we did not consider here may be affected by party-system fragmentation.

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