



## Duverger and the territory: explaining deviations from the two-party-competition-law

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To cite this article: Daniel Bochsler (2019): Duverger and the territory: explaining deviations from the two-party-competition-law, Journal of Elections, Public Opinion and Parties, DOI: [10.1080/17457289.2019.1658195](https://doi.org/10.1080/17457289.2019.1658195)

To link to this article: <https://doi.org/10.1080/17457289.2019.1658195>



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# Duverger and the territory: explaining deviations from the two-party-competition-law

Daniel Bochsler<sup>a,b</sup>

<sup>a</sup>Nationalism Studies and Political Science Department, Central European University, Budapest, Hungary; <sup>b</sup>Faculty of Political Sciences, University of Belgrade, Serbia

## ABSTRACT


According to Duverger's Law, plurality voting systems lead to two-party competition. However, many results of national parliamentary elections deviate from this rule. In contrast to previous research, which argues that in countries with territorial splits, regional two-party systems aggregate to national multi-party systems, this article shows that this explanation accounts for only a small proportion of the empirical exceptions to Duverger's Law. Instead, this article distinguishes three explanations for Non-Duvergerian outcomes at the national level. The three mechanisms relate to the level of electoral constituencies, to the aggregation of constituency results, and to the interaction between constituency- and aggregation effects. This article assesses the explanatory power of each of the three explanations on an extensive sample of election results from plurality vote systems, linking national to constituency-level results.

## Introduction

The study of the effect of electoral systems on the proliferation of political parties can be traced back to back to Duverger. He proposed the famous rule, which borders on a "sociological law", that "the simple majority single ballot system favours the two party system" (1951, 247). This law has been vociferously criticized, with the voices defending its empirical validity few and far between (Chhibber and Kollman 2004, 58; Grofman, Blais, and Bowler 2009, 6; Moser, Scheiner, and Stoll 2018, 139). Critics either point to numerous exceptions (Rae 1967, 92–96; Riker 1982; Gaines 1999) or that the causal effect runs in the other direction (Grumm 1958; Colomer 2005).

However, this leaves a key puzzle unexplored: why do some elections follow Duverger's Law, and others not? Duverger's critics often overlook the fact that

**CONTACT** Daniel Bochsler  bochslerd@ceu.edu  Central European University, Nationalism Studies and Political Science, Central European University, Nador utca 9, Budapest 1051, Hungary

 Supplemental data for this article can be accessed at <https://doi.org/10.1080/17457289.2019.1658195>

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Duverger did not formulate a universal law, but was explicit about its limits: the law does not apply to countries where some minor parties are based on “strong local support” (Duverger 1951, 257). Can this contextual condition – the existence of strong national parties and no territorial splits (Sartori 1986; Chhibber and Kollman 2004) – explain the frequent exceptions to his law (Gaines 1999)?

This article investigates the conditions under which Duverger’s Law does not hold. It discusses three mechanisms which explain deviations from Duverger’s Law and tests them empirically. In a nutshell, it shows that Duverger’s Law has strong explanatory power, but only under a set of further necessary conditions. Identifying of the causal effects which produce such electoral contexts goes beyond the scope of this article. Instead, it provides a theoretical typology and an empirical assessment of three different, equifinal patterns which differentiate between three types of Non-Duvergerian outcomes.

Empirically, this article studies party competition in nine countries which have conducted national parliamentary elections (first chamber) under the plurality rule since 1832: Botswana, Canada, India, Jamaica, New Zealand, Trinidad & Tobago, the United Kingdom, the United States, and Zambia, including all elections with a score on Polity IV of 6 or higher. This sample includes all democracies for which constituency-level data is available from two election datasets with results at the constituency-level worldwide (Brancati 2007; Kollman et al. 2014). It analyses both the national party systems and competition in electoral districts, covering 216 elections under the plurality rule, with a total of 72,000 constituency results. Going beyond previous empirical investigations of Duverger’s Law, it connects national outcomes which deviate from it with local-level evidence from electoral districts.

In the next section, this article reviews earlier studies of exceptions to Duverger’s Law at the national level, before introducing three alternative explanations. The third section introduces the empirical research design and presents the results. Part four provides comparative summaries of the results and discusses avenues for further research.

## **A short review of the literature**

The main interest of research on parties and party systems, and the effect of Duverger’s Law is situated at the national level. Although party systems are organized nationally, and electoral systems eventually affect the format of party systems at the national level, their underlying mechanism applies at the level where seats are allocated to parties. Thus for plurality-vote systems, the appropriate level to test the effect underlying Duverger’s Law is that of districts (Shugart 1985; Singer 2013, 207).

As electoral data at the district-level are becoming increasingly available, this literature is growing in size. Mostly, studies of electoral system effects

at this level investigate Duverger's hypothesis, according to which proportional representation or two-round majority systems allow for multi-party competition (whereas the plurality vote leads to two-party systems). Thus, they analyse how district magnitude, the electoral formula, and/or social diversity affect the format of competition (Singer and Stephenson 2009; Potter 2014; Gerring et al. 2015; Tiemann 2015). Following a different research agenda, but still based on district-level data, a number of recent studies (Singer 2013; Milazzo, Moser, and Scheiner 2018) have started to investigate the factors which explain two-party competition in single-seat districts. They follow Duverger's Law, which stipulates that the plurality vote leads to two-party competition. Besides simple plurality systems, Singer (2013) also includes majoritarian (multi-round) or mixed electoral systems (as do Milazzo, Moser, and Scheiner 2018), thus extending the study to investigate possible contamination effects from the parallel application of proportional rules.

Another body of research has investigated the links between electoral constituencies and the national party system. In fact, national exceptions to Duverger's Law can, but do not necessarily, imply an exception from Duverger's Law at the district level. In the footsteps of Cox (1997, 181–202), who addressed this puzzle as electoral coordination between districts, scholars have investigated the capacity of political parties to rally and attract votes across the country (Caramani 2004; Harbers 2010, etc.). The most prominent empirical study of this kind, with a focus on the plurality vote, investigates four large democracies. Chhibber and Kollman confront the *between-district* explanation with other forms of failure of Duverger's Law which are rooted *within* electoral districts (1998, 2004, 40–45).

Other scholars have identified other, more complex patterns behind how electoral competition at the national level and the electoral districts is linked. According to these studies, the national party system is more than just an aggregation of local results. Instead, there are two-sided linkages between the two (Grofman 1999; Calvo and Rodden 2015; Bochsler 2017). Some explanations involve contamination from parallel elections under different electoral rules, e.g. in other electoral arenas (Gaines 1999) or in mixed electoral systems (Cox and Schoppa 2002; Singer 2013). The subsequent parts of this article, however, discuss effects which are endogenous to the plurality rule rather than contamination from other elements of the electoral system. Capitalizing on this body of research, the next section outlines these three types of explanation.

### Three explanations

The causal mechanism underlying Duverger's Law relies, on the one hand, on two-party competition at the level of the electoral constituency (*within-district*

*competition*). On the other hand, Duverger's Law requires the coordination of candidates across districts so that two strong national political parties emerge (*between-district coordination*) (Cox 1997). Exceptions to Duverger's Law can either originate from within-district competition which deviates from Duverger's expectations, from (the lack of) between-district coordination, or they can be the result of interplay between the two aforementioned mechanisms. This section discusses three types of cases, where – with similar assumptions about collective behaviour to those made by Duverger (i.e. reliable information about the electoral strength of parties, rational and strategic actors interested in gaining parliamentary representation) – elections under the plurality vote will produce a Non-Duvergerian outcome at the national level.

These mechanisms are equifinal, i.e. not all deviations from Duverger's Law can be attributed to the same causal mechanism, and each of the possible explanations can have an effect in the absence of the others (except for mechanisms which hypothesize an interplay between constituency – and national effects – see below). This section formulates three explanations. The mechanisms are related to electoral competition within districts, coordination between districts, or the interplay of within- and between-district explanations. Thereby, it scrutinizes earlier explanations (which will subsequently be measured with new data), and it offers new nuances to the theoretical explanations, especially highlighting the interplay between the two main explanations, and demonstrating the empirical consequences thereof.

### ***Within-district competition***

Strategic behaviour along the lines of Duverger's Law means that third- and lower-ranked parties gain few votes (referred to subsequently as "third parties"), as their supporters move to one of the two largest parties. Here, we identify contexts where the collective process of decision-making among fully rational, strategic and informed actors will fail to produce to a two-party system.<sup>1</sup> This effect can only take place if voters can clearly anticipate which of the two parties, or candidates, are viable, i.e. which will gain the most votes in elections and have chances of winning seats (In other electoral systems, this number of viable candidates might be higher, but the rule can be applied accordingly (Selb 2012).) The identification of these viable parties or candidates is not always evident. In some electoral districts, the second party might be neck and neck with one or several others (Palfrey 1989, 82). In these cases, all these parties may seem equally viable to the voter, preventing

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<sup>1</sup>A large body of earlier work has focused on voter-related factors, in particular that of the lack of information, which explain why Duverger's Law often fails (e.g. Blais 2002; but see Raymond and Tromborg 2016). There are also other types of explanations for Non-Duvergerian outcomes which are not related to the lack of information.

strategic coordination among voters or parties in support of the most promising challenger.<sup>2</sup> Accordingly, Cox (1997, 72–76) has identified *Non-Duvergerian equilibrium* situations: three or more parties can stay in competition, but there is no clear incentive for any of the party supporters to switch.<sup>3</sup>

*Explanation 1: Multi-party systems emerge when there is a tight race between the second and third-ranked parties at the level of districts.*

### **Between-district coordination**

The most prominent exception from Duverger's Law, however, does not apply to the level of districts, but to national party systems. The theoretical explanation thereof goes back to Duverger. He stated his law of the plurality vote in 1951 and also discussed conditions for the emergence of smaller political parties. He claims that small parties can be established, and will survive, when they can count on "strong local support". They will "remain confined to their geographical origins" (Duverger 1951, 257).<sup>4</sup> His law on two-party competition applies to electoral districts, but the set of competitors varies across different parts of the country, so that at the national level a multi-party system emerges. Cox (1997, 181–193) terms this phenomenon "linkage" across districts.

*Explanation 2: In the presence of territorial splits in the party system, local two-party competition will result in multi-party systems at the national level.*

### **Interplay of within-district competition and between-district cooperation**

Thirdly, the national party system can contaminate the electoral competition at the level of districts. Here, I ask whether territorial splits also indirectly affect the pattern of electoral competition in the districts (for some of the implications, see Calvo and Rodden 2015). Such national effects can explain Non-Duvergerian outcomes, both locally and nationally. The trend towards two large parties might also emerge from the national arena of politics. Even though mandates are allocated in the electoral districts, national parliamentary elections are more than local contests: they also have a national component. On the one hand, elections are a contest for the office of the prime minister. The national contest might motivate voters to vote for these

<sup>2</sup>But see Fey (1997).

<sup>3</sup>Non-Duvergerian equilibria also emerge in electoral districts with a candidate or party which gains a majority of the first preferences (cf. Riker 1976; Cox 1997; Raymond and Tromborg 2016; Bochsler 2017). Palfrey (1989, 82) adds that the smaller parties do not unify into a single party. However, this can lead to a result whereby fewer than two parties are present nationally.

<sup>4</sup>"Pour qu'un de ces derniers parvienne à se constituer d'une façon solide, il faut qu'il dispose de forts appuis locaux [...]. [Il] restera confiné dans son aire géographique d'origine, et n'en sortira que péniblement et lentement, [...]."

parties even in districts where their votes are purely symbolic, as they have no chance of affecting the local contest (Bochsler 2017; Verthé et al. 2017).<sup>5</sup> On the other hand, large national parties might decide to run candidates and conduct their campaign even in parts of the country where they are not a viable force, as this increases their number of votes nationally. Thus parliamentary elections can be (mis-)understood as a poll on the national parties' popularity. Also, running candidates in all districts demonstrates a party's national outreach: "To make credible the claim that it is a truly national party, and not simply a regional one, a party may contest seats nationwide, even if it has little chance of winning" (Grofman, Blais, and Bowler 2009, 4). Thus, the national competition can have *spill-over effects* into the districts.

The *spill-over* or *contamination* implies an asymmetric pattern of competition between regional and national parties. There is territorial fragmentation in party competition, i.e. parties that are strong in some parts of the country are inexistent or marginal elsewhere. However, this does not lead to the division of a country into regional party systems with different parties. Instead, the largest national parties will run their candidates and win votes countrywide.

*Explanation 3: Under the plurality rule, in the presence of territorial splits, an asymmetric type of electoral competition can emerge, where regional parties compete and gain votes in their strongholds, but the two largest parties compete and gain votes in (nearly) all constituencies.*

## Empirical analysis

The empirical study described here combines electoral data from the national level and from the level of districts for nine democracies which elect their national parliament (first chamber) under the plurality rule. It innovates in two respects which are key for this article.

First, the study is based on a broad dataset covering 216 parliamentary elections under the plurality rule in nine democracies since 1834.<sup>6</sup> While all investigated elections are rated as democratic (Polity IV  $\geq 6$ ), their large geographic and temporal diversity guarantees the inclusion of a very diverse set of cases, much more heterogeneous than those investigated in previous research. (Appendix D [see Supplementary Material] offers the same analyses for elections after 1946 only.) This promises to uncover a variety of explanations for Non-Duvergerian results, going beyond the limited set of elections which have hitherto been influential in the literature.

Second, in line with the theoretical argument, the study combines district-level observations (within-district competition) with deviations in national

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<sup>5</sup>Similarly, national parties might run in regions, as this gives them more leverage to enter into negotiations with regional parties to foster coalitions across levels of politics (Chhibber and Murali 2006).

<sup>6</sup>Earlier data from the United States was omitted due to the presence of a large proportion of constituencies with non-partisan candidates among the front-running candidates.

outcomes (dependent variable) and allows for an analysis of the interrelation of the two (between-district competition). This also allows an analysis of whether the national party system affects electoral competition at the local level (explanation 3). Thus, the empirical innovation here relies not only on extensive empirical testing, covering nine democracies but also on the joint analysis across levels of analysis.

The study uses two large-scale datasets, the “Constituency-Level Elections” dataset (CLE) (Brancati 2007) and the “Constituency-Level Elections Archive” (CLEA) (Kollman et al. 2014). For the CLEA data, the national seat allocation for political parties is drawn from different sources. The datasets count 72616 electoral districts. In 31% of the districts, primarily in elections in the United States until the 1870s, and elections in Jamaica, only one or two candidates run. Excluding these districts, the average vote share of 3rd candidates amounts to 15.4%, although in Jamaica and Trinidad and Tobago it is below 10%.

To distinguish Duvergerian from Non-Duvergerian outcomes, the study relies on an upper threshold which is commonly used in the literature (Chhibber and Kollman 2004, 49): elections leading to more than 2.5 effective parties in parliament are classified as large, Non-Duvergerian party systems. The article also introduces a lower threshold of 1.9 effective parties in parliament to identify Non-Duvergerian party systems with a dominant party.

Recent research has introduced alternative measures of *Duvergerian outcomes*. These indicators are more sensitive to vote differences between the largest- and the second-largest party than the *effective number of parties*. For instance, a distribution of 67%–16.5%–16.5% is related to an effective number of parties of exactly 2.0, but can by no means be characterized as two-party competition (Gaines and Taagepera 2013; Dunleavy 2014). Appendix B2 (see Supplementary Material) shows how the assessment of Duvergerian outcomes, based on the effective number of parties, and alternative measures, overlap. However, this family of indices is not suited for making a distinction between different types of Non-Duvergerian outcomes. In particular, it does not distinguish between dominant-party districts (e.g. 71%–22%–4%) and a fractionalized competition with more than two strong candidates (e.g. 37%–36%–27%).<sup>7</sup> As this distinction is key in the present article, I operationalize *Duvergerian outcomes* based on the effective number of parties.

All three explanations are operationalized through indicators at the level of constituencies, and/or the interplay between constituencies and the national level of elections. The operationalization of the explanatory variables is introduced step by step below, in the discussion of the explanations.

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<sup>7</sup>The two very dissimilar cases lead to identical i-indices. Identical t-indices result, for instance, for the dominant-party district 73%–23%–4% and the three-party-competition 38%–37%–25%. The gap-index yields equal results for dominant-party districts 73%–23%–4% and for multi-party-competition in the format 45%–43%–5%–4%–3%.



### **Within-district analysis**

**Table 1** offers an overview of the format of the electoral competition at the level of districts and at the national level (see figure A1 in online appendix A for a graphical display).

48% of all electoral districts are characterized by two-party competition (**Table 1**, rows). Another 30% of the electoral districts are dominated by a single party (up to 1.9 'effective' parties). Districts with multi-party-competition (>2.5) are less frequent. The picture changes when we focus on the national level, where multi-party systems are much more common (**Table 1**, columns). In line with previous research (Chhibber and Kollman 2004), my analysis shows that many Non-Duvergerian outcomes at the national level must be the result of aggregation effects: Election results in 42% of all electoral districts with two-party competition are related to elections with multi-party competition at the national level. In the subsequent subsections, I will analyse such aggregation effects taking elections, rather than electoral districts, as my units of analysis.

The analysis in **Table 1** uses electoral districts as the unit of analysis, and therefore might lead to different results than an analysis aggregated at the level of elections. The subsequent subsection will aggregate the district results according to national elections.

### **National level analysis**

This section changes the level of analysis and looks at national elections as units of analysis. This allows me, first, to analyse whether the national Non-Duvergerian election outcomes are the result of the aggregation of two-party districts in a party system with territorial splits. Second, it permits the identification of single elections with a tie between the second and third party, measured by the "second to first loser vote total" (SF-ratio). Third, it allows me to introduce explanation 3, which connects the district- and the

**Table 1.** National versus district competition.

	National competition (by votes)					
	One party	Dominant party	Two-party systems	Multi-party systems		Total
	(1–1.5)	(1.5–1.9)	(1.9–2.5)	Moderate (2.5–3.0)	Large (>3.0)	
District competition	(1–1.5)	(1.5–1.9)	(1.9–2.5)	(2.5–3.0)	(>3.0)	
One party (1–1.5)	26	540	6745	757	1376	9444
Dominant party (1.5–1.9)	5	95	8970	1347	1685	12,102
Two-party comp. (1.9–2.5)	3	150	19,699	5213	9462	34,527
mod. multi-party (2.5–3.0)	0	168	1984	2180	7017	11,349
multi-party comp. (>3.0)	0	98	906	427	3773	5204
Total	34	1051	38,304	9924	23,313	72,626

*N* = 72,616 constituencies in 216 elections.

national level, and is based on spill-over effects between the national party system and district competition.

### ***Explanation: coordination across districts***

The previous analysis, pooling the district results across all elections (Table 1), revealed a marked difference between the electoral competition at the level of districts and the national level. Multi-party competition is more frequent at the national level than at the level of districts. This pattern was also identified by Chhibber and Kollman (1998, 2004, 40–45). They only found rare instances of multi-party competition in local districts, but many more when they counted the number of parties at the national level. This points to territorial splits in the party systems as the most plausible explanation for Non-Duvergerian outcomes.

Methodologically, this part of the analysis goes beyond the previous section (and beyond previous studies), which looked at the occurrence of multi-party competition in pooled datasets across a large set of elections. Instead, my unit of analysis is elections, and I aim to identify cases in which the *territorial splits* explanation applies. My variables characterize the distribution of electoral districts according to their degree of competitiveness. Previous analyses mostly rely on the mean effective number of parties in the districts.<sup>8</sup> The mean might not correctly display some elections with a mixture of different types of districts.<sup>9</sup> For instance, in a series of British elections in the nineteenth century, as well as in two Canadian elections in 1979 and 1980, an overwhelming number of districts were either dominated by a single party, or saw multi-party competitions. This leads to an average of 2 effective parties per district, even if Duvergerian two-party districts were hardly present in these cases (see figure in Appendix C1, Supplementary Material).

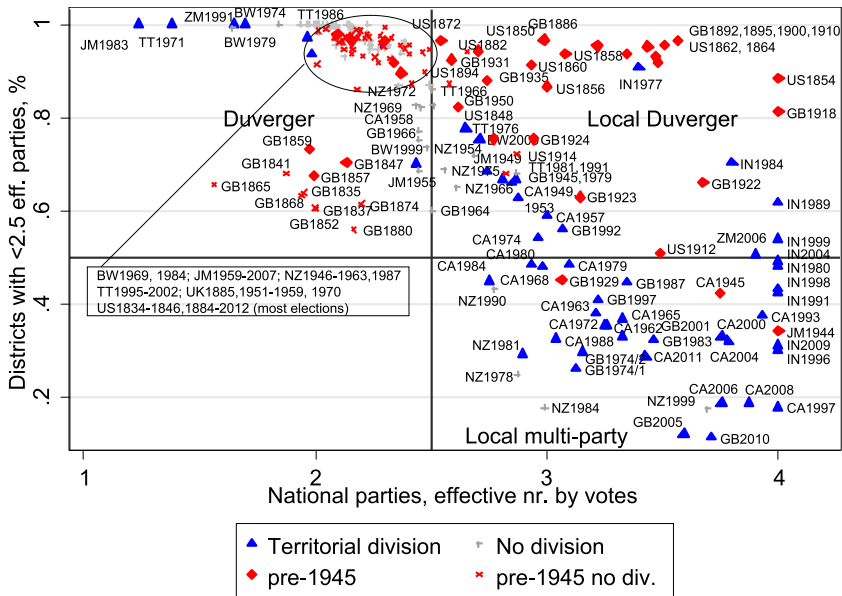
Instead of using the mean, I identify three categories of districts: dominant-party (<1.9 effective candidates), two-party (1.9–2.5), or multi-party districts (>2.5). My analysis relies on the share of each type of district by election (similar: Diwakar 2007).<sup>10</sup> For analyses of the district-level SF-ratios, I count the share of districts with a tight race (SF-ratio >0.6).<sup>11</sup>

<sup>8</sup>In particular, an entire family of measures which compare district-level and national-level electoral competition is based on the mean effective number of parties in the districts (Chhibber and Kollman 1998; Cox 1999; Moenius and Kasuya 2004).

<sup>9</sup>The mean entails the risk of assigning moderate values to elections with very heterogeneous patterns of competition in the districts. This is accentuated by the right-tailed distribution of the effective number of parties.

<sup>10</sup>This measure, and the mean are very strongly correlated. avg. # of district parties and % of multi-party districts:  $r = 0.9$  (for post-1946 elections  $r = 0.94$ ). SF-ratio:  $r = 0.85$  (for post-1946 elections  $r = 0.94$ ).

<sup>11</sup>There is no general cut-off point for tight races. The cut-off point of 0.6 (i.e. the third-largest party gains at least 60% of the votes of the second-placed party in the district) is low; and therefore the criterion to classify elections as “neck and neck” between the 2nd and the 3rd-placed party are not very restrictive. Districts with a single candidate (SF-ratio can not be determined) are included in the count, but considered to be 0.



**Figure 1.** National and local competition, aggregated at the national level.

Note: Number of national parties censored at 4.

In Figure 1, I identify the effective number of parties both at the national level (on the X-axis), and at the level of districts (Y-axis). As the analysis is to identify elections with a *Local Duvergerian* pattern, the Y-axis plots the percentage of electoral districts where the effective number of candidates is smaller than 2.5 (either dominant-party districts, or two-candidate districts).

Splitting the figure into four sectors, the right-hand side displays national Non-Duvergerian outcomes, and the lower part local multi-party competition. Not surprisingly, the lower-left sector (Non-Duvergerian local competition, but Duvergerian national outcome) is empty; Duvergerian national outcomes are always characterized by less than 2.5 effective parties (on average) at the level of districts. Vice-versa, there is no such necessary condition for Non-Duvergerian outcomes. They are either characterized by multi-party competitions in the districts (bottom-right), or by two-candidate competitions (or dominant-candidate districts) (upper right sector). The latter corresponds to the *Local Duvergerian* explanation (explanation 2). Most of the elections with Non-Duvergerian national outcomes (49 out of 87) fall into this section, and most of these (38) are characterized also by major territorial splits. (marked with a triangle). Most of these cases are elections with territorial splits, i.e. where in more than 25% of the districts, third parties are strongest (see discussion below). These are primarily pre-WWII elections in the United Kingdom (1886-1935) or the United States (1848-1882, with interruptions), with weakly nationalized party systems. After

WWII, none of the countries display a stable Local Duvergerian pattern over time. There are such Local Duvergerian episodes in Canada in the 1950s, in India in the 1980s (see also: Diwakar 2007), Botswana in the 2000s, a few isolated UK elections (1950, 1964, 1979, 1992), New Zealand (1966, 1975) and in Trinidad and Tobago.

Two further observations stand out. First, there is a considerable number of Non-Duvergerian (national) elections with local multi-party competition. If I omit the pre-1946 elections from the analysis, then most elections with a Non-Duvergerian (national) outcome (35 out of 57 elections) fall into the lower right sector, and are characterized by prevalent multi-party districts. The analysis in appendix D3 (see Supplementary Material) shows that there is also a strong correlation between the effective number of parties at the national level and at the level of districts for post-1946 elections.<sup>12</sup> Generally, the average competitiveness of elections in the constituencies is slightly below the competitiveness at the national level. However, elections, where the effective number of parties at the national level is *much* larger than at the district level are relatively rare. Hence, in most cases of a national Non-Duvergerian outcome, Duverger's Law does not apply to the local level either.

Second, a surprisingly large number of the cases in the lower right sector (local multi-party competition) is also characterized by territorial splits. In the previous literature, the explanations for local multi-party competition (e.g. my explanation 1), and between-district effects (Local Duvergerian elections) are considered as alternatives, and mutually exclusive. A possible reason for the overlap is offered in the subsection discussing explanation 3.

### ***Explanation: local equilibria***

Before combining the between- and the within-district effects, this subsection discusses two explanations of Non-Duvergerian effects that operate within districts. First, in districts with a dominant party, there is no incentive for political actors to behave strategically. Second, in districts with multiple parties, where the candidate with the second-largest number of supporters is equally as viable as other candidates, political actors might not be able to decide on which candidate to concentrate their efforts and their votes ("Cox equilibria", explanation 1). In both cases, no Duvergerian tendency towards two parties can be expected. While earlier research has identified such electoral districts,<sup>13</sup> this subsection asks whether their occurrence can explain Non-Duvergerian outcomes at the national level.

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<sup>12</sup>Results remain robust if analysing the average effective number of parties in the districts, instead of the percentage of districts with a multi-party competition.

<sup>13</sup>The frequency of dominant-party districts can be seen in Table 1, the relative frequency of Cox equilibria in appendix C2 (see Supplementary Material).

For this aim, this article relies on aggregated measures which assess the relative frequency of either dominant-party districts or Cox equilibria in national elections. Dominant-party districts are identified by the effective number of parties at the district level ( $<1.9$ ). Elections with Cox equilibria at the local level are identified by a high “second to first loser vote total” (SF-ratio) and local multi-party competition (Cox 1997, 85–88). The SF-ratio varies between 0 and 1. Low values close to 0 either characterize dominant-party districts or a two-party competition. High values, close to 1, characterize equilibria, i.e. where the second and the third party are running neck-and-neck, with no coordination being possible. If multi-party competition is a result of strategic coordination, in accordance with Cox’s explanation, then the distribution of SF-ratios should be bipolar: in some districts, two parties compete (SF-ratio close to 0), in others there is a tight race (SF-ratio close to 1).<sup>14</sup> High SF-ratios are also possible in dominant-party districts (e.g. with a vote distribution 61%–20%–19%) (cf. Gaines 1999). Under our restrictive operationalization (cf. Cox 1997, 87–88), such districts are not considered as Cox equilibria (see Appendix C2, Supplementary Material).

In Figure 2, the X-axis displays the percentage of districts with multi-party competition, and the Y-axis the percentage of districts with a tight race between the second- and the third ranked party (SF-ratio  $>0.6$ ). The percentage of districts with a high SF-ratio and multi-party competition varies between 0 and 56%.

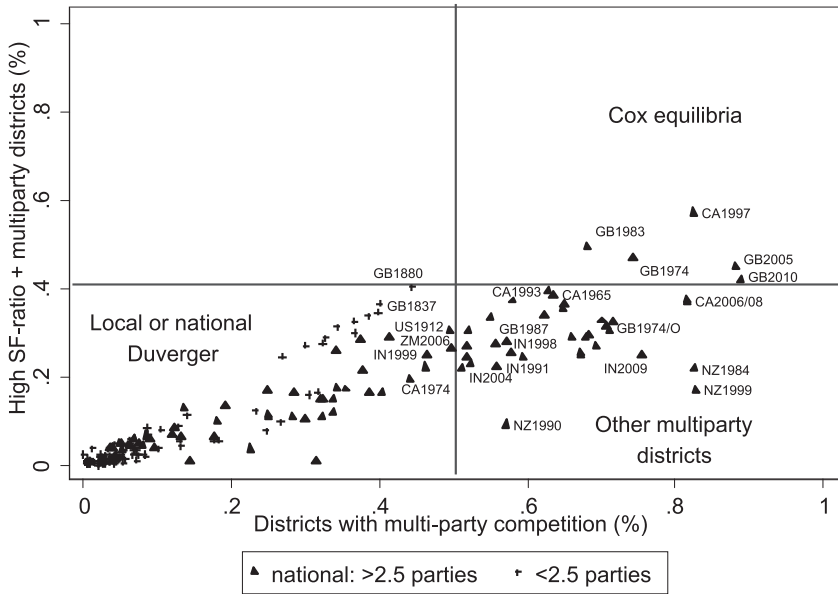
A series of elections located in the upper right sector of Figure 2, primarily from Canada and the United Kingdom, are characterized by a prevalence of local multi-party districts and Cox equilibria. The most pronounced case thereof is Canada in 1997. Inevitably, a multi-party system also emerges at the national level. However, there is an even larger number of elections with prevalent Non-Duvergerian district outcomes, but no equilibrium (lower right sector).<sup>15</sup> Hence, while Cox equilibria (exp. 1) have been demonstrated to work at the level of districts, they only rarely translate to the national level, explaining multi-party systems in national elections.

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<sup>14</sup>According to this operationalisation, 11% of our districts can be characterised as Cox equilibria. Other work relies on a less restrictive operationalisation, looking at SF-ratios only, e.g. Chhibber and Kollman (2004, 53–55). This allows districts with a dominant party, but two or several similarly large challengers, to be characterised as Cox equilibria. Chhibber and Kollman did not find empirical evidence for Cox’s explanation in four countries. With this less restrictive operationalisation, the frequency of districts with Cox equilibria increases from 11% to 14%, and five elections more appear among the cases with widespread Cox equilibria ( $>40\%$  of the districts): Canada 1997, Great Britain 1974, 1983, 2005, 2010. Results (Figures 4 and 8) are shown in appendix C2 (see Supplementary Material).

Future research could further investigate dynamic effects, i.e. whether actors learn from previous elections in the same district, and/or voter surveys, and how this affects Cox equilibria.

<sup>15</sup>This, despite a very low cut-off point to identify Non-Duvergerian equilibria. With a higher cut-off point for SF-ratios, the number of elections in this sector would increase further.



**Figure 2.** Identifying Cox equilibria.

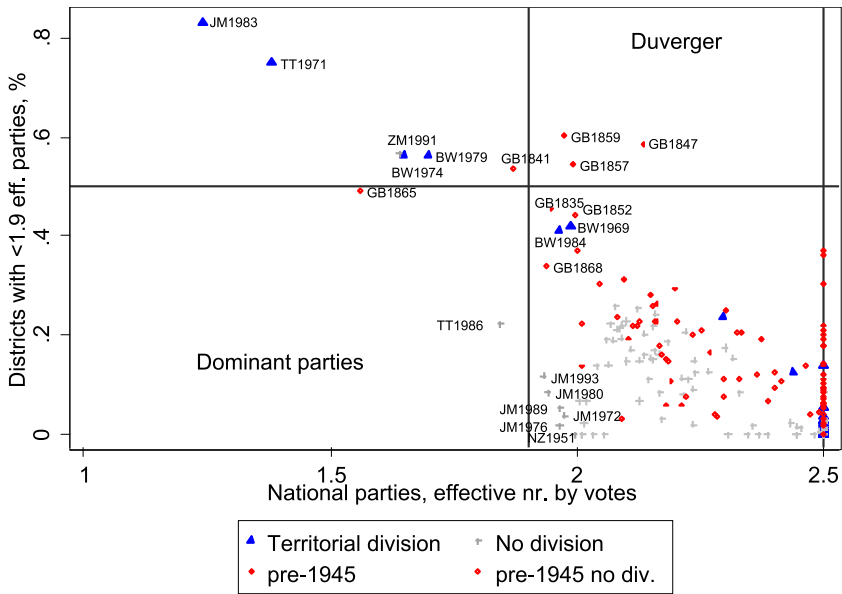
Notes: Due to space limitations, data labels in heavily populated areas are omitted. BO: Botswana; CA: Canada; GB: United Kingdom; IN: India; JM: Jamaica; NZ: New Zealand; TT: Trinidad and Tobago; US: United States; ZM: Zambia.

### Dominant parties

To offer a more complete analysis of Non-Duvergerian outcomes, [Figure 3](#) analyses elections with dominant parties at the national level (X-axis) and at the district level (percentage of dominant-party districts, Y-axis). Dominant-party constituencies are very common in the pooled sample ([Table 1](#)): 29.7% of all constituencies count fewer than 1.9 effective parties. However, such constituencies are almost always outliers in the context of competitive national elections. Only in very few elections do such dominant-party districts prevail ([Figure 3](#), upper part), and only in two elections in the United Kingdom (1865) and in Trinidad and Tobago (1986) is the scenario matched by a dominant party at the national level.

### Spill-over effects

The third explanation relies on the interplay between national-level and constituency-level electoral dynamics, leading to an asymmetric pattern of electoral competition. The largest national parties compete in (almost) all districts across the country, whereas regional parties compete in their respective fiefs. The empirical pattern of spill-over resembles partly the *Local Duvergerian* pattern (explanation 2): in both cases, electoral competition is



**Figure 3.** Dominant-party elections at the local and national level.

Note: National number of parties right-censored at 2.5.

characterized by territorial splits. However, while in Local Duvergerian cases, different front-runners compete in different parts of the country for mandates, some of the parties compete in (almost) all districts. As a consequence, in the case of spill-over effects, in many districts, multi-party competition prevails. The pattern of competition in the electoral districts will therefore, differ between districts in the periphery and in the centre. Districts in the *centre* and the *periphery* differ, because of the different strategies that third- or lower-ranked parties (and their supporters) pick: I address districts in strongholds of regional (peripheral) parties as “periphery”.<sup>16</sup> In these districts, large national parties will compete even if they are third- or lower-ranked. In some peripheral districts, this might coincide with high SF-ratios (cf. explanation 1), but this is not the norm. Vice-versa, in districts, where the largest national parties are strong, defined here as “centre”, regional parties will not compete.

To identify cases with spill-over effects, first I consider elections with a territorial split, and second I measure the degree of asymmetry in the competitiveness between electoral districts with strong national parties (centre) and those with strong regional parties (periphery). I consider national parties to

<sup>16</sup>In exceptional cases, the agenda of regional parties might also include gaining votes countrywide, and competing in constituencies in the “centre”. Then the emerging empirical pattern becomes very similar to Cox’s explanation 1. However, I consider it less likely that regional parties are able to gain votes in the centre to the same degree that national parties with support from the centre can gain votes in the periphery.

be the two parties with most (national) votes in previous elections. In the case of spill-over effects, the front-running candidates in the electoral districts will gain more votes in central districts than in the periphery; my index measures the difference in the vote share for the two strongest candidates.<sup>17</sup> In brief, there are more competitors in the periphery because the largest national parties gain votes there – despite having no chance of winning the mandates.

There is a range of indices measuring territorial splits in party systems (Bochsler 2010). They take the number of votes per district into account, and are therefore not exogenous to spill-over effects, i.e. whether national parties gains votes in the periphery.<sup>18</sup> In order to avoid circular results, I rely on a simple binary distinction, considering elections with at least 25% districts with a third-party as one of the front runners as territorially split.

In the elections analysed, the average district vote share of the two strongest parties (or candidates) ranges between 74% and 100% of the votes. On average, it is a little higher in constituencies in the centre than in the periphery. In some elections, this difference is large, ranging up to a net difference of 16% between centre and periphery. For instance, in the 1957 elections in Canada, in districts controlled by the two largest national parties, these received on average 91% of the votes, whereas in the “periphery”, the two largest local parties only gained 75% of the votes, on average. This vote difference measures the spill-over effect, i.e. it shows to what degree parties from the centre run and gain votes in peripheral districts.<sup>19</sup> Elections could be misclassified as instances of the spill-over effect when a few isolated constituencies with popular local or third-party candidates are present, leading to random variance in the number of first-party votes between the districts. In order to avoid this kind of type-I-error, I introduce the additional condition that more than 25% of all constituencies must be attributed to the *periphery* (i.e. a local/regional party is among the frontrunners). Below the 25% threshold, the spill-over index may point to random local effects. Appendix B1 (see Supplementary Material) documents the validity test used.

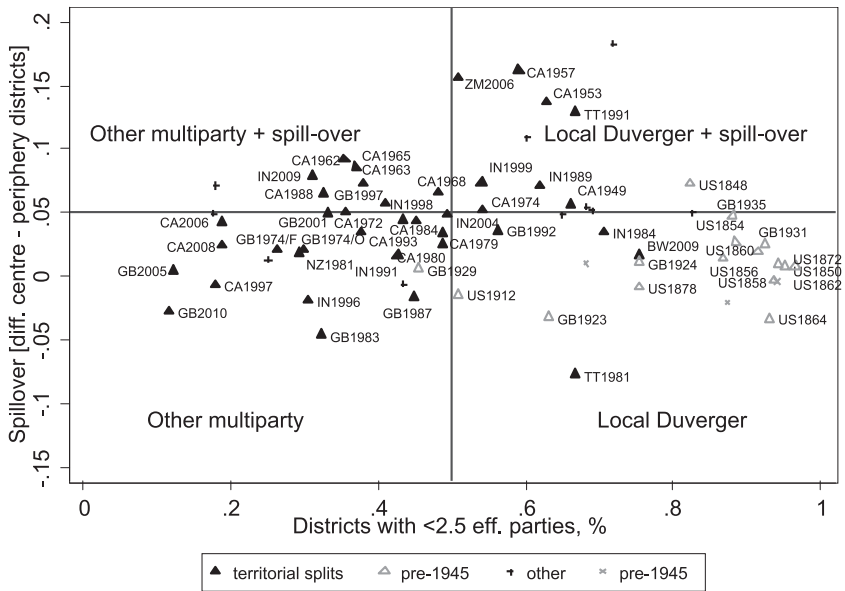
Figure 4 maps the spill-over effects according to the (average) effective number of parties in constituencies. It shows both Duvergerian and multiparty outcomes at the constituency level on the X-axis, and the explanations for multiparty elections on the Y-axis. Differences in competitiveness between *peripheral* constituencies and constituencies in the *centre* are widespread;

<sup>17</sup>I include not only the votes of large national and regional parties, but of third- and lower-ranked candidates. If I did not, the analysis would be heavily driven by the average vote share gained by other small parties (neither regional, nor large national parties), and by the distinction between large national/regional/other parties.

<sup>18</sup>Also, they consider differences in the vote share of the two largest parties across the territory, which are not relevant for spill-over effects, if no third party is among the two front-runners.

<sup>19</sup>The analysis was also conducted with a second measure, gauging the difference in the effective number of district parties between the centre and the periphery. The two measures correlate at  $r = 0.85$ , for elections with national multi-party competition after 1946 at  $r = 0.93$ .





**Figure 4.** Territorial splits and spill-over effects. Only elections with more than 2.5 effective parties (by votes, national level).

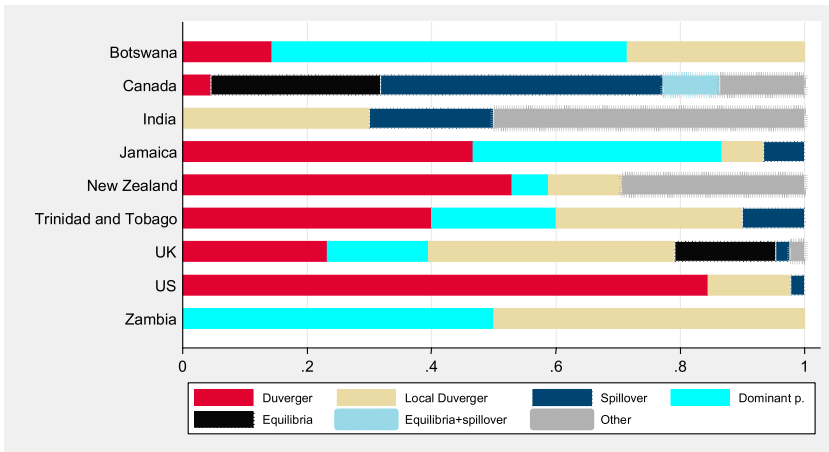
Notes: Election labels only for elections with territorial splits. Spill-over scores censored at 0.5.

i.e. cases with a larger effective number of parties in the *periphery* occur both in elections with two-party competition in the constituencies (right side of the graph), as well as in elections with multi-party competition at the level of constituencies (left side). They also occur in some elections with less relevant territorial splits in the party systems. In Figure 4, only elections with important territorial splits are labelled.

In contrast, some of the elections display the inverse pattern: in the 1981 elections in Trinidad and Tobago, electoral constituencies in the periphery were dominated by a single party. Hence, there was no spill-over effect, and national parties were particularly weak.

I have thus identified two competing explanations for multi-party competition at the level of districts; Cox's equilibria (explanation 1), and spill-over effects from the national party system (explanation 3). The question arises of if the two rivalling explanations coincide for the same cases? The analysis in appendix B1 (Figure B1, see Supplementary Material) shows that the two explanations are mutually exclusive, and there are hardly any overlapping cases, except for the Canadian election of 1965, which is marginally above the cut-off on both dimensions.

The analysis reveals asymmetric patterns of competition between national and regional parties, which have barely been discussed in the literature. More research is needed to explain why and when they emerge by analysing spill-



**Figure 5.** Distribution of type of election outcomes, by country.

Notes:  $N = 216$  elections. Appendix D (see Supplementary Material), Figure D8, shows the results for the post-1946 period.

over effects in light of earlier electoral results at the constituency level, or in light of territorial divides.

## Conclusions

Duverger’s Law, according to which the plurality rule leads to two-party systems, is controversial in comparative political research. The main points of critique centre on the frequent empirical deviations from Duverger’s Law. This article investigates previous explanations of Non-Duvergerian outcomes empirically and complements them with new explanations. The dominant explanation for deviant cases – already mentioned by Duverger himself – cites electoral coordination between electoral districts. When different sets of parties compete in different electoral constituencies, then local two-party systems are matched by a multi-party system at the national level. A second explanation stresses the within-district roots of Non-Duvergerian outcomes: under certain distributions of preferences and votes within districts, the strategic effect that leads to a two-party system will not come into play. I add a third explanation, highlighting spill-over effects on local competition from national party organizations.

The interplay of within-district and between-district effects as an explanation for Non-Duvergerian outcomes at the national level requires an empirical research design which links the local and the national level. This article offers the first study which systematically connects local and national electoral results for a large set of democracies which elect their national parliaments (first chamber) under the plurality vote.

The findings show that no single mechanism can explain Non-Duvergerian outcomes across these countries. Instead, all explanations find expression in some historical or contemporary cases. The importance of these explanations varies from country to country. [Figure 5](#) illustrates this picture. Relying on the thresholds which were introduced in the previous section, I classify each of the elections as Duvergerian (1.9–2.5 effective parties, by votes, national level) or Non-Duvergerian (<1.9 or >2.5 effective parties), and I relate Non-Duvergerian outcomes to different explanations. Some of the cases combine several explanations.

First, the “Local Duvergerian explanation”, whereby territorial splits explain why multi-party systems can emerge at the national level, is predominant in the literature. According to my results, it is the exception rather than the rule, with its importance being mostly restricted to historical cases in the United Kingdom and the US. Second, dominant party systems where two-dominant parties in electoral constituencies mean that no strategic effect is present, can be observed in particular in countries with a short history of competitive elections (Botswana, Jamaica, Trinidad and Tobago, Zambia, and a single election in New Zealand).

Third, a handful of manifestations of electoral districts with multi-party competition can be observed. Cox’s equilibria occur in four elections in the United Kingdom and one in Canada, whereas territorial splits with spill-over effects are seen primarily in Canada, India and Zambia.

Overall, the explanations of Non-Duvergerian outcomes vary greatly across countries. Hence, considering that the number of democracies employing the plurality vote for national parliamentary elections is limited, the results of any empirical investigation on the effect of the plurality vote should be expected to be strongly affected by the selection of cases. In particular, the inclusion of more recently democratized, and smaller countries, offers more nuanced findings.

## **Acknowledgements**

I am very grateful to Jae-Jae Spoon and three reviewers for constructive comments.

## **Disclosure statement**

No potential conflict of interest was reported by the author.

## **Funding**

This work was supported by Swiss National Science Foundation [grant number 137805].

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