Electoral Margins and Political Competition*

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Abstract

Are US election outcomes historically close? This paper analyzes long run trends in election vote margins and party seat margins and links them to changes in the nature of political competition. We assemble a comprehensive database of historical electoral results for the US House, Senate and presidential contests, from the 19th century until today. Seat margins declined in the recent period, so the margins of control of the House, Senate, and Electoral College by either party have become smaller. However, this was not accompanied by a decline in the margins of victory at the constituency level. We interpret these facts in the context of a simple model of electoral competition with multiple districts. We show theoretically that the increase in politicians' information about voter preferences, together with the growing nationalization of politics, can explain the decrease in seat margins and the concurrent stability in vote margins. As implied by the model, we document that campaign contributions received by House candidates are increasingly concentrated in a dwindling set of swing districts.

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1 Introduction

Election outcomes at the federal level have been remarkably close in the United States in recent decades. In the US House of Representatives, after sixty years of almost continuous Democratic Party dominance, control has switched five times between the two major parties since 1993. The House seat margin at the beginning of the 119th Congress (2024-2026) stands at just five seats. In the US Senate, party control changed six times between 1933 and 1993, and seven times in half the number of years since 1993. In the Electoral College, the winner lost the popular vote only four times since the Civil War - but two of these instances occurred in the last 25 years.

Election closeness has important implications for a range of questions in political economy. Some of these relate to policy outcomes: decreasing seat margins can increase the frequency of political transitions, with ramifications for economic performance (Marx et al., 2022), while also leading to more policy gridlock and inertia (Krehbiel, 1998; Jones, 2001; Ortner, 2017). Other implications relate to voter beliefs and behaviors: margins of victory can affect voters' perception of the legitimacy of elected officials (Blais et al., 2017; Greif and Rubin, 2024), as well as voters' incentives to seek information and their degree of political mobilization (Bursztyn et al., 2024).

This paper studies the historical evolution of election closeness in the US. We show that the trend toward closer seat margins is a relatively recent development that began half a century ago and holds for House, Senate and presidential elections. However, the tendency toward closer *seat margins* at the chamber level is not accompanied by a similar tendency toward closer *vote margins* at the constituency level. Since vote margins at the constituency level show no tendency to decline over the same period, the explanation for closer seat margins cannot be that constituencies have become more closely split between the two major parties. This is the central puzzle that we address in this paper. We link these trends to some deep changes in the nature of political competition.

We argue that two major forces conspire to explain closer seat margins without closer vote margins. The first force is the growing availability of information on voter preferences. Politicians have now access to a wealth of polling data, survey data, registration data, etc. With such information, mistakes about the location of voters in political space are less common, preventing landslide general elections. The House, Senate and Electoral College tend to be more evenly divided, i.e. seat margins are closer. However, a second force – the nationalization of politics – prevents this better information from translating into closer vote margins at the constituency level. As voters attribute more weight to national issues, local candidates are increasingly perceived as reflections of their party's ideologies, preventing them from targeting local median voters. Such a constraint, when the political orientation of different localities varies greatly, prevents vote margins at the constituency level from converging to zero as information on the location of voters in political space improves.

This paper offers five main contributions. First, we assemble a comprehensive database of historical election results for House, Senate, and presidential elections, since the 19th century. We systematically collected and harmonized data from a variety of sources to obtain a database that allows us to provide a consistent historical account of the evolution of seat margins and vote

margins. The sample that we use in our analysis includes a total of 35,441 electoral races: all House elections since 1868, which corresponds to the end of the Civil War, all Senate elections since 1901, corresponding to the adoption of the Seventeenth Amendment, and all presidential elections since 1880, corresponding to the adoption of the popular vote by all States.

Second, we document the twin stylized facts of declining seat margins at the chamber level over the last 60 years, and persistent vote margins at the constituency level.[1]

Third, we offer a new model of electoral competition between two parties in elections over multiple districts, that can provide an explanation for the stylized facts. We start from a Downsian model of electoral competition that allows for uncertainty on the position of district median voters (as in Wittman, 1973, 1977). We modify this model in several ways: (a) We consider multiple districts that are heterogeneous in their political leanings. Each district elects a representative to a national chamber, allowing us to study both district-level vote margins, and chamber-level seat margins. (b) Uncertainty stems from both national and local shocks to voter preferences. This allows shocks to the position of local median voters to be correlated across districts. (c) We model local platforms as either tailored to local voter preferences, or bound to a national party platform. We study four configurations of the model depending on the presence (or not) of uncertainty, and on whether (or not) platforms are tailored to local voter preferences. We show that switching from a model configuration with uncertainty and tailoring to one without either can rationalize the main empirical facts that we document.

Fourth, we test a key implication of the model: that campaign effort should be increasingly targeted toward a dwindling subset of swing districts. Indeed, when platforms were tailored at the local level, candidates from each party in all districts considered that victory was within their grasp. Instead, with national platforms, the only districts that are worth spending campaign resources in are those that are neither too left- or right-leaning. Thanks to information on the location of voters in political space, political actors can identify and target swing districts. We test this implication using data on contributions received by Democratic and Republican candidates in each congressional district in all House elections from 1980 until today. We show a pronounced upward trend in the degree of concentration of campaign contributions across congressional districts – precisely in those most closely contested.

Fifth, we interpret our stylized facts through the lens of the model. In particular, we discuss the recent literature on the availability of information about voter preferences. This literature has documented the vast increase in the number and quality of public opinion polls since the 1960 presidential election, when the first poll was used by John F. Kennedy's campaign (Hillygus, 2011). This allowed national parties to more precisely target the national median voter, resulting in more evenly divided chambers (smaller seat margins). In principle, this improved informational

[1]For the House and the Senate, we calculate the seat margin as the difference in seats won by the Democratic versus Republican parties, and we report the average vote margin at the congressional district and state levels, respectively. For presidential elections, the seat margin is computed for the Electoral College, and the vote margin is based on candidate shares of the popular vote at the state level.

environment should also enable candidates in each district to better target the district median voter, resulting in closer vote margins. The second force hindering this development is the growing nationalization of politics, which is extensively documented in the literature that we discuss next. The generalization of national media sources has led voters to place more emphasis on national issues relative to local ones, as evidenced by the decline in split-ticket voting and the greater congruence of local and national platforms since the 1980s (Hopkins, 2018). As a result, a Republican candidate in a Democratic leaning district stands little chance (and vice-versa), leading to positive vote margins. Finally, we discuss why alternative explanations, including gerrymandering and spatial sorting, are unlikely to explain the trends we observe in seat and vote margins.

In sum, our paper shows that recent trends toward tighter seat margins without corresponding decreases in vote margins are related to structural changes in the nature of political competition. These changes are linked to a new informational landscape where voters' attention is geared toward national issues and where politicians can more easily take the pulse of the electorate. Political competition occurs on a national level, with more precise targeting of political resources to pivotal districts.

2 Setting and Data

We study electoral results for the two chambers of the United States Congress, the House and the Senate, and for presidential elections. Our data come from Dave Leip's Atlas of U.S. Elections for the recent period and from the *Inter-university Consortium for Political and Social Research* (ICPSR) for elections held on or before 1990. We cleaned and harmonized the data from these two main sources and then cross-checked the electoral results using alternative data sources. We ended up manually imputing the results of 910 elections, and the political affiliation of 1,143 candidates. Appendix B details our cleaning process, the set of consistency checks we performed, and the corrections we made to the original data. Table 1 presents some summary statistics on the three types of elections.

House elections are held every two years to elect representatives from 435 congressional districts. Our period of analysis spans more than 150 years of elections, starting with elections for the 41st Congress, the first one in which all the former Confederate states were represented since they had seceded from the Union, and ending with elections for the 119th Congress. We analyze the composition of a total of 79 House chambers and the results of $31,820$ House elections. We exclude special elections (representing 1.2% of all races), as we are interested in the composition of the chamber at the time of the general election.[2] We also exclude multi-member districts, which correspond to 0.4 percent of the elections, from the vote margin analysis.[3]

[2] As shown in Section 3, the seat and vote margin trends are similar if we include special elections in the analysis.

[3] We nevertheless take into account the winners of multi-member district races to compute seat margins. Over our period of analysis, this concerns only 1% of the seats of a given Congress on average.

Table 1: Summary Statistics

	House elections				
Period	41st Congress 41 (1868) — 119th Congress (2024)				
	Mean	Sd	Min	Max	N
Panel A: Congressional district					
Vote margin	33.7	29.5	0.0	100	31,820
# Candidates	2.8	1.3	1	32	31,820
% D/R as top two	91.1	28.5	0	1	31,820
Panel B: Chamber					
Seat Margin	16.3	12.8	0.2	56.1	79
	Senate elections				
Period	65th Congress (1914) — 119th Congress (2024)				
	Mean	Sd	Min	Max	N
Panel A: State					
Vote margin	24.2	24.3	0.0	100	1,840
# Candidates	4.0	2.3	1	49	1,840
% D/R as top two	93.1	25.4	0	1	1,840
Panel B: Chamber					
Seat Margin	14.4	13.2	0.0	58.3	54
	Presidential elections				
Period	1880-2024				
	Mean	Sd	Min	Max	N
Panel A: State					
Vote margin	19.2	17.7	0.9	97.1	1,781
# Candidates	10.3	10.0	2	38	1,781
% D/R as top two	95.9	19.8	0	1	1,781
Panel B: Electoral College					
Seat Margin	41.8	28.8	0.9	97.0	37

Note: We define election vote margins at the constituency level as the difference between the share of votes cast for the winning candidate and the second-place candidate. Vote margins are computed at the congressional district level for House elections, and at the state level for Senate and presidential elections. We exclude special elections for the House and Senate elections. We define the seat margin as the difference between the number of seats (for House and Senate elections) or the number Electoral College votes (for presidential elections) won by the party with the most seats and the number of seats won by the party with the second-most seats, divided by the total number of seats.

Senate elections take place at the state level and are held every two years to renew one third of the chamber, so that senators serve for 6 years. We start our analysis with the 1914 elections, the first ones after the adoption of the Seventeenth Amendment, establishing direct elections for

all Senate seats. We analyze the composition of a total of 54 Senate chambers, starting with the 65th Congress, and the results of 1,840 Senatorial elections. As with House elections, we exclude special elections, which account for 7.6% of all races.[4]

Presidential elections are held every four years. We start our analysis with the 1880 elections, the first in which all states used the popular vote to determine their choice for President, up to the 2024 presidential election. We analyze Electoral College votes in 37 presidential elections and the results of 1,781 state-level races.

3 Stylized Facts on Seat Margins and Vote Margins

3.1 Seat Margins

We start by analyzing how the margin of control of the two legislative chambers evolved over time. For each Congress, and separately for the House and for the Senate, we calculate the number of seats won by each party based on the results of the general elections.[5] We then define the seat margin as the difference between the number of seats won by the party with the most seats and the number of seats won by the party with the second-most seats, divided by the total number of seats. This amounts to considering the absolute value of the Democratic (or Republican) seat margin.

Figure 1 plots the seat margins over time, where each blue dot gives the seat margin of a given Congress. For both chambers, we see a decrease in the recent period. Starting around the 90th Congress (1967-1969), the seat margin falls from an average of about 20% to less than 10%, and we see a reduction in the dispersion of seat margins across Congresses.

As shown in Appendix Figure A1, the graphs look very similar when we consider the official composition of the chambers that takes into account special elections, instead of the composition at the time of the general election coming from our election results data.[6]

We find a similar trend in the recent period when looking at presidential elections: the margin of victory in the Electoral College has decreased sharply over the last 60 years.[7] The same is true if we consider the margin of victory in terms of the number of states won by each party using our electoral data (abstracting from the number of electors attributed to each state), as shown in Appendix Figure A4.

[4] A few states held their elections under a two-round voting rule. When several rounds took place (which was ultimately the case in only 6 elections), we consider the results of the second round. We also consider the last round of results for elections taking place under ranked-choice voting (only the 2022 Alaska election resulted in several rounds).

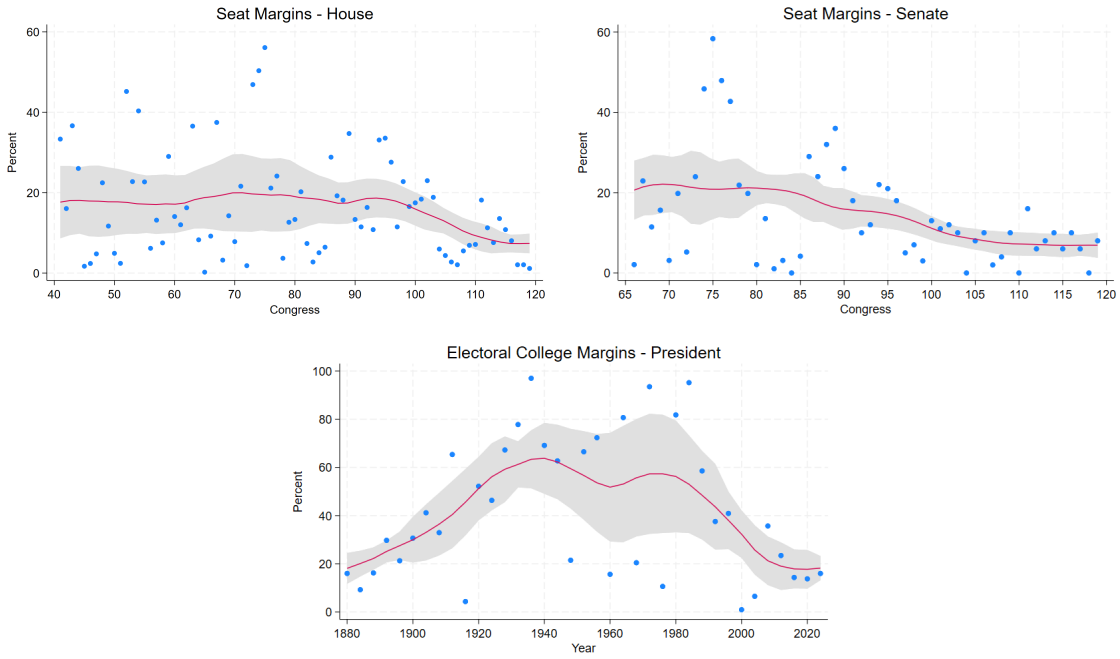
[5] For the Senate, given that only one third of the seats are up for election every two years, the results of a given general election are used to compute the composition of three Congresses.

[6] For these alternative graphs, we use data from history.house.gov for the House (https://history.house.gov/Institution/Party-Divisions/Party-Divisions/), and data from senate.gov for the Senate (https://www.senate.gov/history/partydiv.htm).

[7] We use data from Wikipedia to compute the margin of victory in the Electoral College: https://en.wikipedia.org/wiki/List_of_United_States_presidential_elections_by_Electoral_College_margin

When simply regressing the seat margin on the Congress or election year, we find a highly-significant negative relationship for all three types of election in the recent period (from the 90th Congress, when considering House and Senate elections, and from election year 1968 for presidential elections).

Figure 1: Evolution of Seat Margins



Notes: Each dot corresponds to the seat margin of a given Congress for the top two graphs, and to the margin of victory in the Electoral College for the bottom graph. The top left-hand side graph considers the composition of the House from the 41st Congress (1869-1871) to the 119th Congress (2025-2027). The top right-hand side graph considers the composition of the Senate from the 65th Congress (1917-1919) to the 119th Congress (2025-2027). The bottom graph considers Electoral College votes from the 1880 to the 2024 presidential elections.

3.2 Vote Margins

We define election vote margins at the constituency level as the difference between the share of votes cast for the winning candidate and the second-place candidate.[8] For the House, we consider the average vote margin across congressional districts for each general election separately. For the Senate, given that one third of the seats are up for election every two years, we average the vote margins across states over 6-year periods. Finally, for each presidential election, we consider the average popular vote margin across states.

Figure 2 depicts the evolution of vote margins over time. Contrary to seat margins, the average vote margin remained quite stable in the recent period for all three types of elections. The trends are

[8]Over our period of analysis, the top two candidates are one Republican and one Democrat candidates in more than 90 percent of the races (see Table 1).

similar when we include special elections (Appendix Figure A2), or when we exclude uncontested elections, where only one candidate received all the votes (Appendix Figure A3).

Figure 2: Evolution of Vote Margins

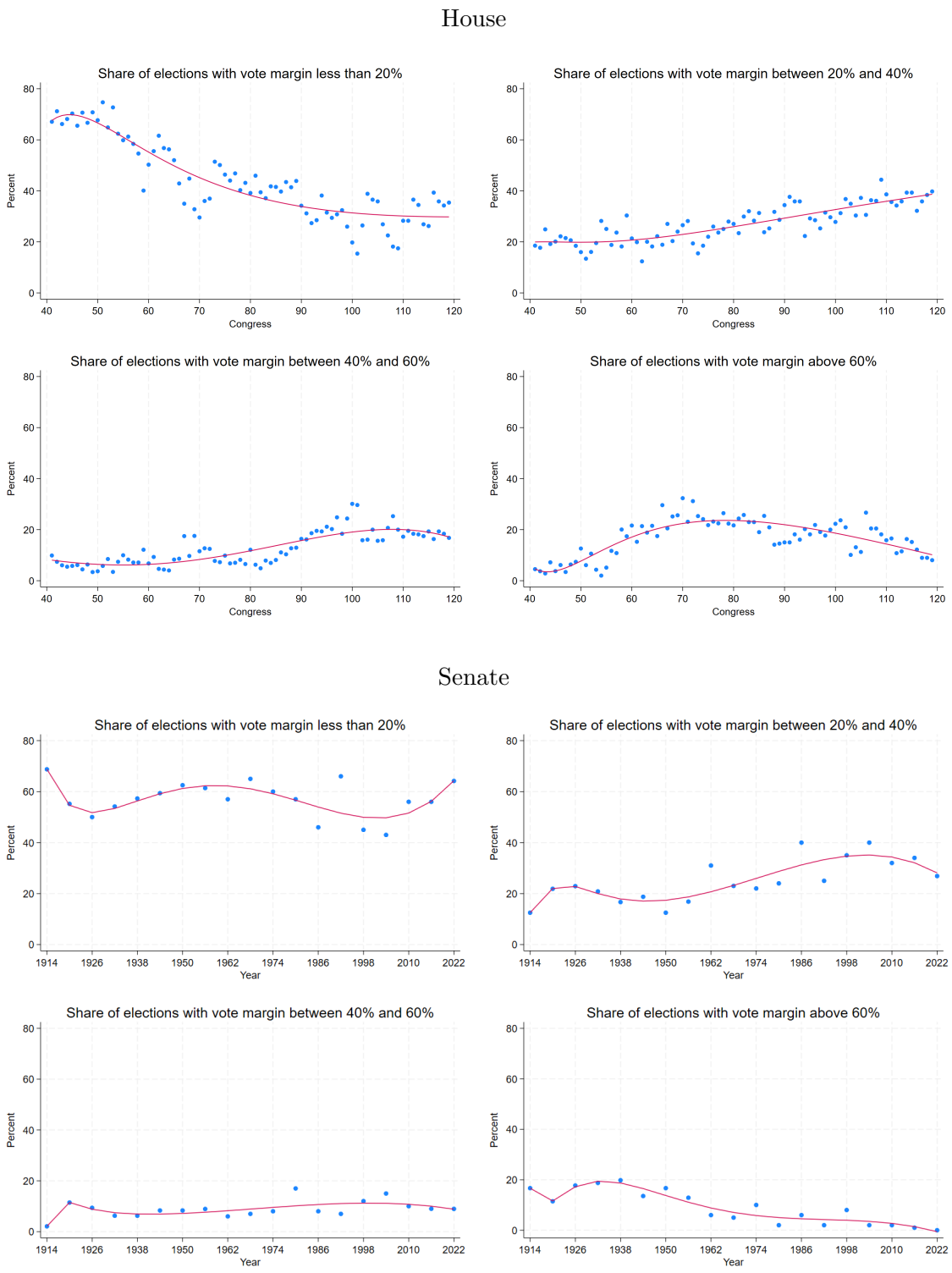


Notes: On the top left-hand side graph (House elections), each dot considers the average of the congressional districts' vote margins for a given general election, starting with the elections for the 41st Congress. On the top right-hand side graph (Senate elections), each dot considers the average of the states' vote margins over periods of six years, starting with the period 1914-1920. We exclude special elections and multi-member districts. When an election is decided in multiple rounds, we consider the vote margin in the ultimate round. On the bottom graph (presidential elections), each dot considers the average of the states' vote margins in terms of popular vote, from the 1880 to the 2024 presidential election.

One might be concerned that stable vote margins mask an increase in the share of close elections compensated by a similar increase in blowout elections. Instead, if anything, we see the opposite. As shown in Figure 3, the share of elections with a vote margin between 20 and 40 percent increased for all three types of elections. Instead, the share of close elections with a vote margin below 20 percent, and the share of blowout elections with a vote margin higher than 60 percent decreased over time, a trend that is particularly salient for House elections.[9]

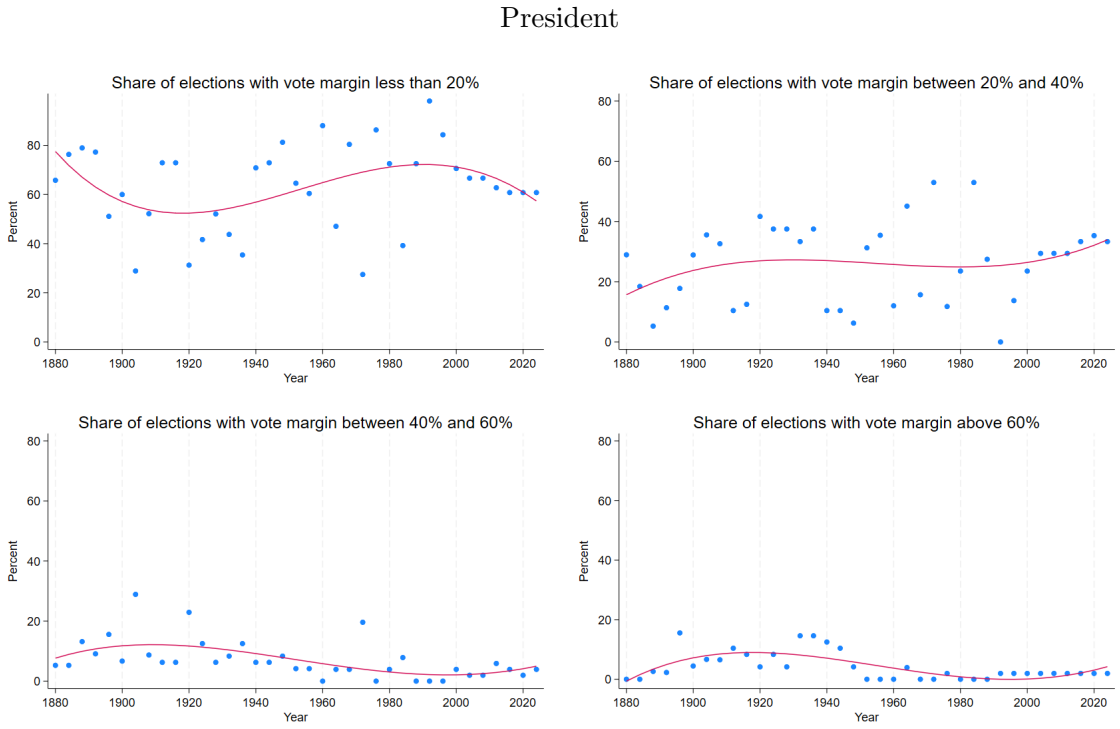
[9]The trend in the share of close election is less clear for the Senate in Figure 3. When decomposing it further, Appendix Figure A5 shows that the share of very close elections with a vote margin below 10 percent is decreasing, compensated by an increase in the share of elections with a vote margin between 10 and 20 percent. The share of elections with a vote margin below 10 percent is also decreasing for House and presidential elections, driving the decrease in the share of elections with a vote margin below 20 percent.

Figure 3: Share of elections falling within a given vote margin range



Notes: For the House, each dot considers the share of congressional districts where the vote margin falls in a given range, starting with elections for the 41st Congress. For the Senate, each dot considers the share of states where the vote margin falls in a given range, using elections taking place in a 6-year window, starting with the period 1914-1920. We exclude special elections and multi-member districts. When an election is decided in multiple rounds, we consider the vote margin in the ultimate round.

Figure 3: Share of elections falling within a given vote margin range - continued



Notes: For presidential elections, each dot considers the share of states where the popular vote margin falls in a given range, from the 1880 to the 2024 presidential election.

4 The Model

4.1 Objectives

We propose a model that can deliver predictions on the magnitude of both vote margins and seat margins and accounts for the trends observed in the data. The model can replicate these trends as a function of two major changes in the nature of political competition: the greater availability of information about voter preferences and the nationalization of politics.

We start from the simplest model delivering non-zero vote margins, namely the Wittman model (Wittman, 1973, 1977). In the Wittman model, vote margins are not zero because there is uncertainty on the position of the median voter, and candidates must choose platforms before the position of the median voter is revealed. We generalize this model by allowing for multiple districts, local and national shocks to voter preferences, and platforms that are tailored (or not) to local voter preferences. This allows us to characterize electoral outcomes at the district level as well as the composition of the chamber. The model maps directly to House and Senate elections, where a different candidate runs in each district (congressional district or state). For presidential elections, we take the states as districts, and the Electoral College as the chamber. While the same candidate

runs in all districts, local tailoring in this case takes the form of the candidate campaigning on a different platform in different locations.

We derive vote margins and seat margins in four configurations, depending on the existence or not of uncertainty over the position of the median voter, and depending on whether candidate platforms are tailored to local political conditions, as opposed to being bound to a national platform. The four configurations that we study are depicted in Table 2. We focus below on cases 1 and 3, because they are the ones pertinent to match the empirical trends. We discuss all four cases in Section 4.5 and relegate the full analysis of case 2 to Appendix C2. Case 4 is the simple Downsian case, with full convergence to the median voter at the local level.

Table 2: Four Configurations

	Local Tailoring	National Platforms
Uncertainty over district median voter	Case 1: Section 4.3	Case 2: Appendix C2
No uncertainty over district median voter	Case 4: District-level Downsian case	Case 3: Section 4.4

4.2 Setting and timing

There are n districts of equal size. At time t, each district i has a political orientation μ_i drawn from a uniform distribution over $[0;1]$, a left to right scale.[10] Once drawn, μ_i becomes common knowledge.

At time $t+1$, in each district, two candidates $P \in \{D;R\}$ choose platform x_i^p. The preferences of local candidates are as follows: If policy x_i^p is implemented, D receives a payoff of $-|x_i^p - \mu_i + \frac{1}{2}|$ and R receives a payoff of $-|x_i^p - \mu_i - \frac{1}{2}|$. Candidates in each district would like to adopt policies at their ideal points (they are policy-seeking) - i.e. $\mu_i - \frac{1}{2}$ (for D) and $\mu_i + \frac{1}{2}$ (for R). However, they have incentives to deviate from their ideal points to increase their probability of winning (see Gehlbach, 2013). In other words, in each district, candidate D solves:

$$\max_{x_i^D} p(x_i^D, x_i^R) \cdot (-|x_i^D - \mu_i + \frac{1}{2}|) + [1 - p(x_i^D, x_i^R)] \cdot (-|x_i^R - \mu_i + \frac{1}{2}|) \tag{1}$$

where $p(x_i^D, x_i^R)$ is the probability that D wins. Similarly, candidate R solves:

$$\max_{x_i^R} p(x_i^D, x_i^R) \cdot (-|x_i^D - \mu_i - \frac{1}{2}|) + [1 - p(x_i^D, x_i^R)] \cdot (-|x_i^R - \mu_i - \frac{1}{2}|) \tag{2}$$

[10] We do not need to assume any specific distribution for μ_i, but assuming a simple uniform distribution aids when turning to simulations and when illustrating the model graphically.

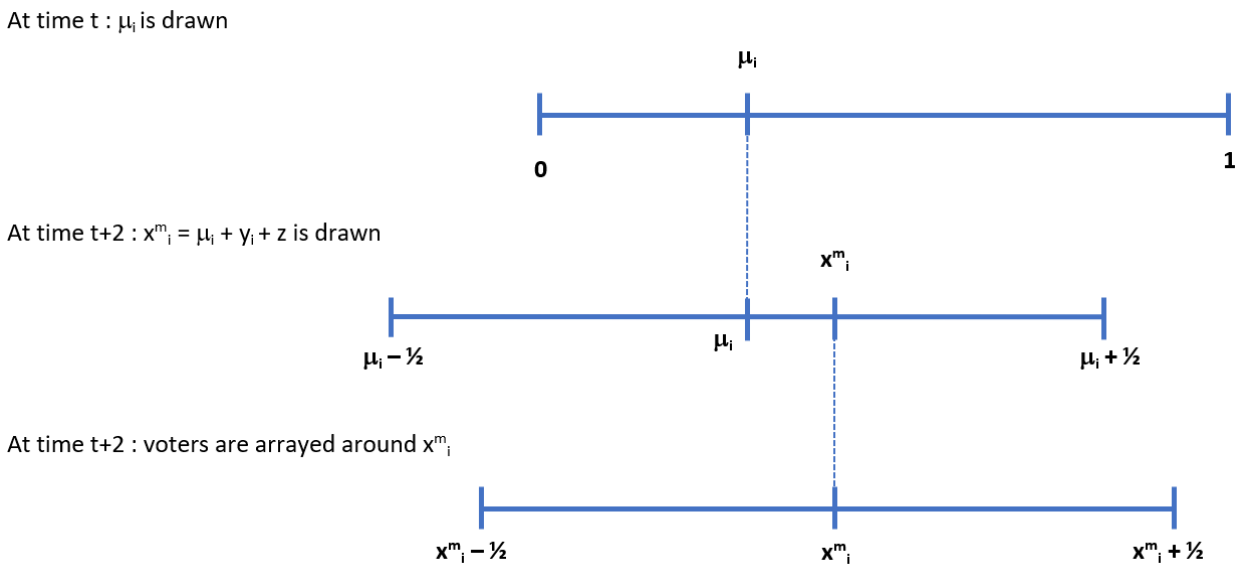
At time $t+2$, the position of each district i's median voter, x_i^m, is drawn and the election takes place. We assume that a continuum of voters is arrayed uniformly over the interval $[x_i^m - \frac{1}{2}; x_i^m + \frac{1}{2}]$.[11] The candidates do not know x_i^m with certainty when choosing platforms.[12] However, they know that:

$$x_i^m = \mu_i + y_i + z \tag{3}$$

In equation (3), y_i represents a "local shock", that is i.i.d across districts. It is distributed uniformly over the interval $[-a; a]$ with $a \geq 0$. z represents a "national shock" and is distributed on the interval $[-b; b]$ with $b \geq 0$. In contrast to the local shock, the national shock affects the position of all voters in all districts equally. Thus, the sum of the two shocks can be interpreted as a single shock to voter preferences that is correlated across districts. Both y_i and z (and therefore x_i^m) are drawn after the parties set their platforms. Finally, we assume that $a + b \leq 1/2$, and we define $c \equiv max(a, b)$.[13]

The setting and timing are illustrated in Figure 4, where we display, respectively, the support of μ_i at time t, the support of x_i^m and the support of voter positions at time $t+2$, and how the distributions of these variables relate to each other.

Figure 4: Setting and Timing of the Model



[11] We do not need to assume a uniform distribution of voters around the district median, only a symmetric distribution. However, the uniform distribution gives us a nice closed form solution for vote margins, and aids in illustrating the model graphically.

[12] As described in the textbook by Gehlbach (2013), one way to motivate this assumption is that "we might expect uncertainty about x_m to be greater at times or in places with relatively poor polling technology."

[13] The assumption that $a + b \leq 1/2$ is a technical assumption that ensures that platforms cannot be too extreme relative to the position of the electorate, and also ensures that vote shares are not degenerate. The reason for this assumption becomes clear when we solve for the equilibrium in Section 4.3.

After the election takes place, vote margins at the district level and seat margins at the chamber level are realized. We are interested in characterizing vote margins for each district, and their distribution across districts, as well as seat margins for each election cycle.

4.3 Local Tailoring of Platforms, and Uncertainty on the Median Voter

We first consider the case where there is uncertainty concerning the position of district median voters ($c > 0$) and candidates can perfectly tailor their platforms to district political preferences (platforms depend on μ_i), the case that corresponds to the upper left quadrant (Case 1) of Table 2. This corresponds to the Wittman model (Wittman, 1973, 1977), as presented in Gehlbach (2013), with some important modifications. In Gehlbach (2013), there is a single district and a single shock to the district median voter. Here, we have multiple districts, and there is both a district-specific shock y_i and a national shock z. Considering a national shock allows us to capture shifts in preferences that are correlated across all districts, such as the national shift toward Democrats in the 1930s or toward Republicans in the 1980s.

With these assumptions, the overall shock is no longer distributed uniformly. Instead, it has a tent-shaped distribution, with support $[-a-b; a+b]$, the sum of two uniform distributions with identical means but different supports. Characterizing the optimal platforms of the parties, x_i^D and x_i^R, requires considering several cases, depending on the values of a and b. In Appendix C1, we show that the solution to this problem boils down to:

$$\begin{cases} x_i^D = \mu_i - c \\ x_i^R = \mu_i + c \end{cases}$$

Interestingly, this solution looks similar to that of the Wittman model, where the platform of candidate D is to the left of the median voter by an amount equal to the extent of the uncertainty on the median voter's position, and symmetrically for candidate R. However, the solution arises from a different distribution of the position of the district median voter, due to the presence of both local and national uncertainty. The distance between the platforms and the median voter in each district is equal to c, the maximum of the local or national level of uncertainty. We are now fully equipped to calculate vote shares, vote margins and seat margins.

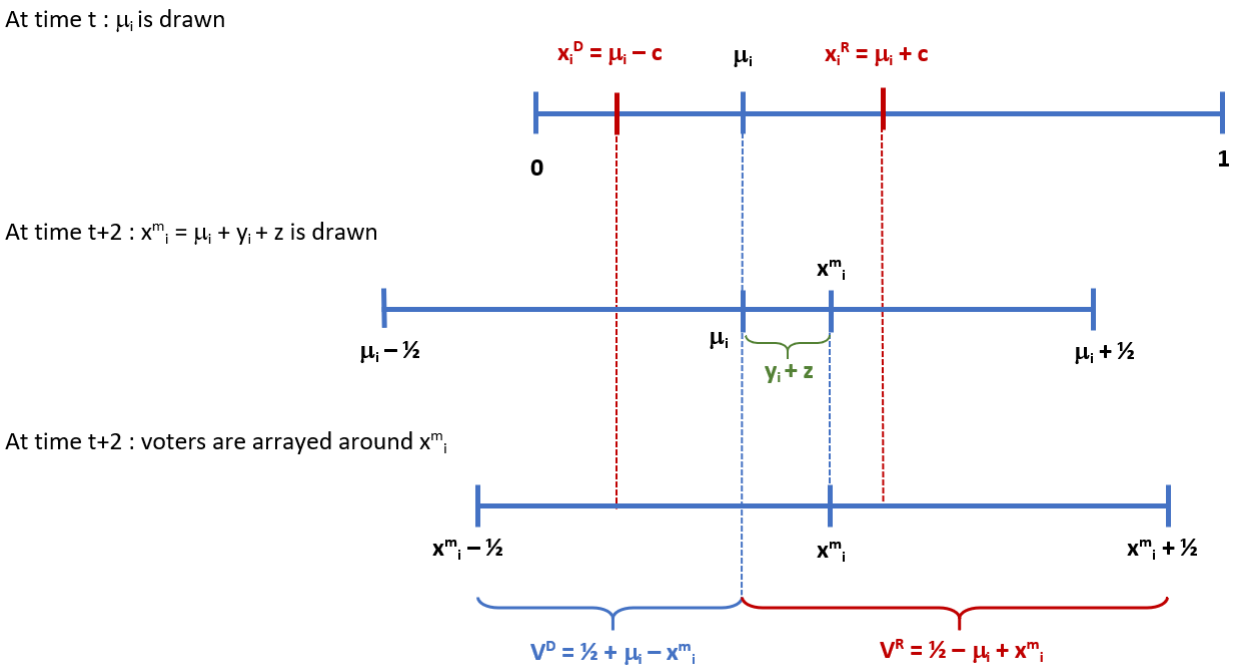
Vote Margins. The calculation of vote margins is illustrated graphically in Figure 5. The vote share obtained by candidate D in district i is : $V_i^D = \frac{1}{2} + \mu_i - x_i^m$ and the vote share obtained by candidate R in district i is : $V_i^R = \frac{1}{2} - \mu_i + x_i^m$. It is straightforward to see that R will win whenever $x_i^m > \mu_i$. This happens when the district median voter is drawn to the right of μ_i, i.e. when $y_i + z > 0$. The vote margin in district i is simply:

$$V_i^R - V_i^D = 2(x_i^m - \mu_i) = 2(y_i + z) \tag{4}$$

The mean of vote margins across districts converges to $2z$, as the party for which the national shock is favorable wins in a majority of districts. Moreover the *variance* of the distribution of vote

margins across districts, in a given election with a single draw of z, is equal to $4a^2/3$. Sensibly, it is increasing in a, the extent of local shocks.[14]

Figure 5: Platform Choice and Vote Shares



Seat Margins. We now turn to a characterization of seat margins. The party that happens to receive a favorable draw of z (i.e. a negative draw favors D while a positive draw favors R) will tend to win more districts. Across multiple election cycles, a higher value of b is therefore associated with larger absolute seat margins.[15]

We can characterize seat margins analytically. Recall first that R wins the election whenever $x_i^m > \mu_i$, i.e. whenever $y_i + z > 0$. Intuitively, when the national shock z is, say, negative (favoring D), in order for the R candidate to win, the local shock y_i has to be sufficiently positive. Using the fact that y_i is distributed uniformly over the interval $[-a; a]$ and fixing a value of z, the probability that $y_i + z > 0$ is:

$$\Pr(y_i + z > 0) = \Pr(y_i > -z) = 1 - F(-z) = \frac{1}{2} + \frac{z}{2a} \tag{5}$$

By the law of large numbers (LLN), the share of elections s^R where R wins converges to $\Pr(y_i + z > 0)$ as $n \to \infty$. Trivially, the share of elections where D wins is $s^D = 1 - s^R$. Therefore, the seat

[14] While vote shares (and therefore vote margins) do not depend on a and b, the extent of uncertainty on the position of the median voter affects the draws of y_i and z and therefore the *distribution* of vote margin across districts. For instance, if $a = b = 0$ then vote margins are all zero. In Appendix C1.2, we show that, when $b = 0$, i.e. there is no national shock, the *mean* of vote margins approaches zero when $n \to \infty$.

[15] When $b = 0$, the seat margin is asymptotically zero as the mean of vote margins is zero.

margin is asymptotically:

$$s^R - s^D = \frac{z}{a} \tag{6}$$

Equation (6) is a very intuitive result. If the national shock z takes on a value of zero, the seat margin is zero, as no party enjoys a national advantage. If the draw of z is equal to a, there can be no possible draw of y_i that compensates for the vast national advantage enjoyed by R candidates, and R's share of the seats is 100%.[16] Finally, in the case where $a = 0$, the problem becomes deterministic: since all districts share the same z, if $z > 0$, R wins in all districts and the seat margin is 100%.

Discussion. The simple model presented above, with uncertainty on the position of district median voters that comes from both local and national shocks, and with the ability of candidates from each party R and D to tailor their platforms to the local political orientation, delivers interesting results on vote and seat margins. First, exactly as in Wittman, vote margins are not zero whenever there is some source of uncertainty on the position of district median voters. Second, to obtain both nonzero vote margins and nonzero seat margins, one needs both a local and a national shocks to voter preferences that are unobserved by politicians prior to the election: the local shock delivers non-zero vote margins, and the national shock delivers non-zero seat margins. We argue that such a situation captures the early period of our empirical analysis, when politicians had less information on voter preferences (creating local and national uncertainty on the position of the median voter) and when politicians could more easily tailor their platforms to local voter preferences.

4.4 National Platforms with No Uncertainty

In this subsection, we consider the case where there is no uncertainty on the position of local median voters, so that $x_i^m = \mu_i$. We also assume that local candidates run on the platform P^D and P^R set by national parties. As we discuss in Section 6.2, this reflects the nationalization of electoral competition. As voters place greater weight on national versus local issues, local candidates are perceived as simple reflections of their party's national platforms. This case corresponds to the lower right quadrant (Case 3) of Table 2.

How do national parties set their platforms? This is not very consequential for our results. Parties can be polarized, or choose the position of the national median voter. We will consider the generic case where platforms are symmetric, so that $P^D + P^R = 1$, with nation-level Downsian convergence ($P^D = P^R$) a special case.[17] It is natural to think of national party platforms as

[16] It is possible for z to be drawn such that it is greater than a, a possibility that arises when $b > a$. In this case, it is trivial to show that the seat margin is also 1. Similarly if $z \leq -a$, the seat margin is -1 as D candidates win all the seats.

[17] The model is easily extended to the case of asymmetric platforms. This would introduce an additional determinant of vote and seat margins, namely the degree of platform asymmetry: the candidate with the platform farthest away from the median voter would be at a disadvantage. We abstract from this possibility because it does not seem plausible that one national party would accept such a disadvantage without changing its platform.

resulting from some form of aggregation of their respective voters, as would be the case if it were chosen through a primary system where only co-partisans can participate. Alternatively, we might think of party platforms as resulting from the preferences of their elected representatives. In either case, party platforms would deviate from the policy preferences of the national median voter, with L choosing a platform to the left of the median, and R to the right.[18] Calculating vote margins and seat margins is straightforward in this case.

Vote Margins. Vote margins are depicted in Figure 6. Given the positions of the national platforms, D will win any district where $\mu_i < 1/2$ (the situation depicted in Figure 6). The vote margin will be simply:

$$V_i^R - V_i^D = 2\mu_i - 1 \tag{7}$$

If $\mu_i = 0$, D wins with 100% of the vote, while if $\mu_i = 1$, R wins with 100% of the vote. There is a tie, with a zero vote margin, when $\mu_i = 1/2$. The mean of vote margins across districts is 0 and the variance is 1/3. The mean of vote margins is zero because R and D are mirror images of each other in terms of electoral results. However, there are positive vote margins at the district level, so the mean of the *absolute* value of vote margins is not zero.

Seat Margins. The probability that R wins in a given district i is simply:

$$\Pr(\mu_i > 1/2) = 1 - \Pr(\mu_i < 1/2) = 1/2 \tag{8}$$

Then, the seat margin is:

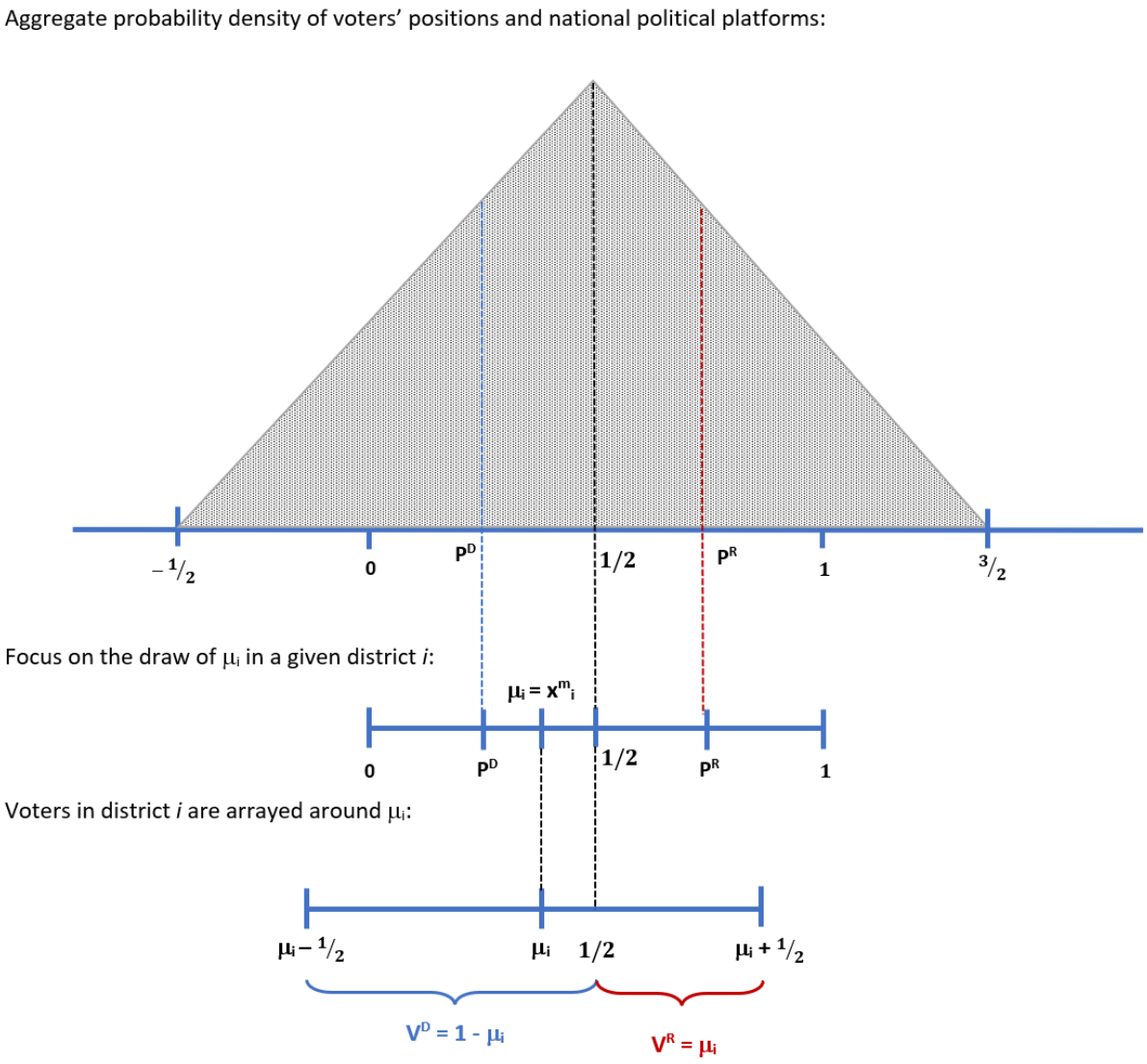
$$s^R - s^D = 0 \tag{9}$$

Given that the full distribution of μ_i is known by the parties, the seat margin is zero.

Discussion. This is the polar opposite case to the one in Section 4.3, that is, candidates face no uncertainty on the position of local median voters, but local candidates are bound to the parties' national platforms. In this case, we still have non-zero vote margins, but for very different reasons than in Section 4.3. Vote margins stem from the inability of local candidates to tailor their platforms to local voter preferences. So D candidates in R-leaning districts are "stuck" with platforms that are too far left given their electorate's preferences, and lose. However, at the national level, lopsided losses and wins, when $n \to \infty$, occur with the same frequency for L candidates and R candidates. Thus, seat margins are asymptotically zero. This case is a good reflection of the recent political environment, marked by the nationalization of politics and the greater availability of information on voter preferences.

[18] As an example, suppose that national parties set platforms P^D and P^R to track the median voter of the districts such that $\mu_i > 1/2$ and $\mu_i < 1/2$, respectively. It is straightforward to show that, under this assumption, $P^D = 1/4$ and $P^R = 3/4$. This requires separately summing the distributions of all of the voters across all districts such that $\mu_i \leq 1/2$ and $\mu_i \geq 1/2$.

Figure 6: Vote Shares with National Platforms and with No Uncertainty



4.5 Summary

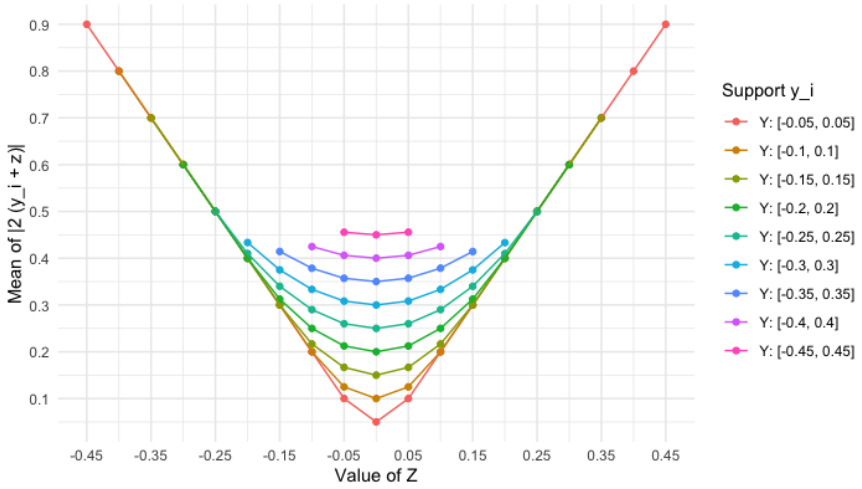
We are now equipped to interpret the empirical patterns highlighted in Section 3, as moving from Case 1 to Case 3 replicates the main stylized facts we identified on seat and vote margins. Since the latter are in terms of mean *absolute* vote margins over districts, and of *absolute* seat margins, we have to calculate the corresponding quantities from the theoretical predictions. The results are summarized in Table 3 and Figure 7.

Table 3: Summary of Absolute Margins

Settings		Values	Means over Districts
Margins	Configurations		
Vote Margins	Uncertainty & Local	$2\lvert y_i + z\rvert$	$\begin{cases} 2z & \text{if } z \geq a \\ z^2/a + a & \text{if } -a < z < a \\ -2z & \text{if } z \leq -a \end{cases}$
	Certainty & National	$\lvert 2\mu_i - 1\rvert$	$1/2$
Seat Margins	Uncertainty & Local	$\lvert z\rvert/a$	-
	Certainty & National	0	-

Note: The derivations of absolute vote margins in this table appear in Appendices C1.3 and C3.1.

Figure 7: Mean Absolute Vote Margins in the Case of Uncertainty and Local Tailoring



Several lessons emerge. Focus first on vote margins. In Case 3 (Certainty & National), average vote margins are equal to 0.5. Figure 7 displays vote margins in Case 1 (Uncertainty & Local), as a function of the realization of z, for y_i drawn using various levels of a.[19] We see that vote margins are smaller than 0.5 whenever $|z| < 0.25$. When the national shock takes on a large realized value (in absolute value), vote margins can be greater than 0.5. However, whenever a is not zero, the probability of drawing a value of $|z|$ in excess of 0.25 is smaller than the probability of drawing a $|z|$ smaller than 0.25 - in that case vote margins are on average greater under Case 3 than under Case 1. The difference in average vote margins between Case 1 and Case 3 is therefore ambiguous.

In contrast, seat margins are unambiguously larger in Case 1 than in Case 3: seat margins are

[19] Since $a + b \leq 1/2$, a large realization of z must imply a small level of a.

equal to $|z|/a$ in Case 1, and fall to zero in Case 3.

The closeness of elections at the chamber level (low seat margins) is therefore *not* a reflection of closer district-by-district elections, as would be the case in the Downsian case. Indeed, in Case 4 with no uncertainty and local tailoring (lower left quadrant of Table 2), vote margins are zero in all districts, winners are determined by a coin toss, and seat margins are also zero.

Finally, Case 2 is not helpful either to explain the stylized facts of Section 3. If all that happens is a nationalization of candidate platforms, without a reduction in local and national uncertainty, absolute seat margins remain the same as under Case 1 (they are equal to $|z|/a$), as shown in Appendix C2. Moreover, vote margins become much larger than in either Case 3 or Case 1: irrespective of the draw of z and of the support of y_i, vote margins at the district level are always greater than 0.5 (see Appendix Figure C2). With local candidates bound by national platforms, they tend to be located far from local median voters; and with uncertainty on the position of local median voters, there is an additional reason for high vote margins.

Broadly, the idea that candidate information on voter preferences has improved (a reduction in a and b), *and* that it has become more difficult for local candidates to deviate from the platform of national parties can rationalize the trends presented in Section 3. Indeed, when moving from Case 1 to Case 3, seat margins become much tighter, while this is not the case for vote margins.

5 Implications for Political Competition

An implication of our model is that campaign resources should become increasingly targeted to a dwindling subset of swing districts as one moves from Case 1 to Case 3. Indeed, in Case 1, with uncertainty and local tailoring, the *ex ante* vote margin in all district is zero (*ex ante* here means before the position of the median voter is revealed, i.e. in period $t+1$, as outlined in Section 4.2). In other words, at the time of setting platforms and campaigning, candidates from each party in all districts believe that victory is within their grasp. Instead, in Case 3, with no uncertainty and national platforms, the *ex ante* probability of winning for a D candidate in an R district is zero, and conversely the R candidate is certain to win. The only districts that are worth spending campaign resources in are the ones that are neither too left- or right-leaning. Thanks to information on the location of voters in political space, political actors can identify and target those swing districts.

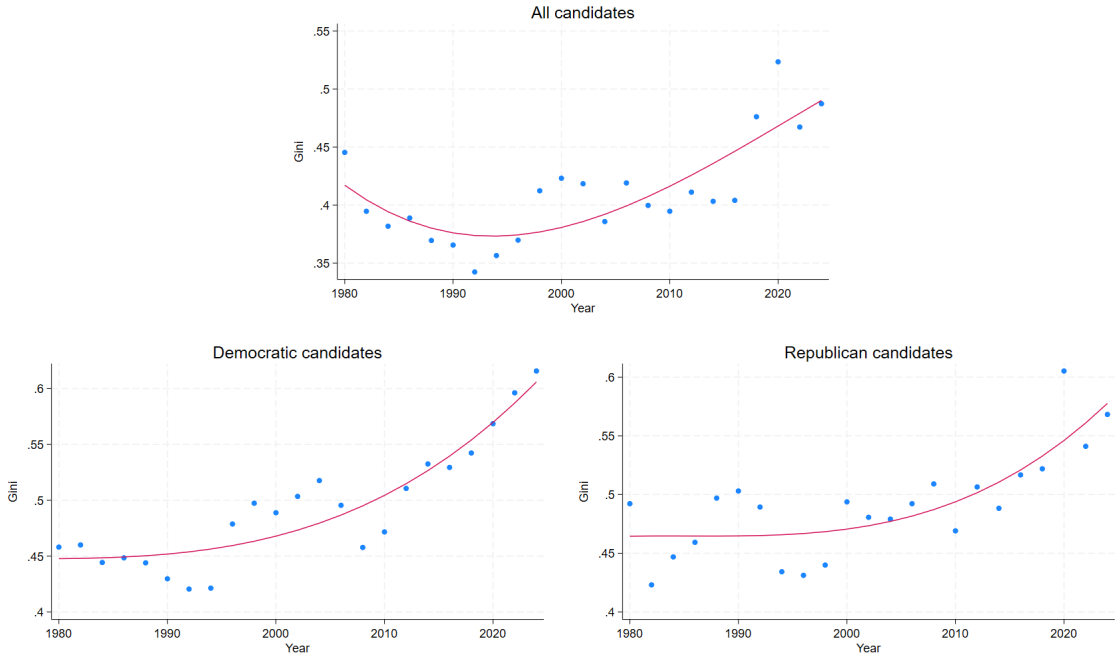
To test this implication, we rely on Federal Electoral Commission (2025) data that report campaign contributions received by each candidate in House elections, with information on the district in which they ran, from 1980 to 2024. To match the model, we only retain candidates affiliated with the two main parties. We are able to retrieve the contributions received by 94% of Republican and Democratic candidates in our dataset of electoral results.[20]

[20]We obtain very similar results if we consider spending by candidates instead of contributions received (Appendix Figure A6), and if we consider only districts in which there are no missing values (Appendix Figure A7).

We compute measures of campaign contribution concentration across congressional districts in each general election over the period of interest. For each district, we compute the total amount of money received by both candidates, as well as separately by the Democratic and the Republican candidate. We then compute the Gini index for the three measures across districts and plot the associated values over time in Figure 8.[21] The lower the value of the Gini, the more evenly spread are campaign contributions received by candidates across districts. Figure 8 shows a pronounced upward trend in the degree of concentration of total campaign contributions across congressional districts, whether considering money received by all candidates, or separately by Democratic and Republic candidates.

Also consistent with the mechanism of our model, the districts in which campaign contributions are concentrated tend to be the most competitive: as shown in Table 4, there is a large and significant positive correlation between the district's share of total contributions and the electoral vote margin in the corresponding election. In particular, when moving from the first quartile (closest elections) to the second quartile, the share the district represents in total contributions decreases by almost 100%.

Figure 8: Contributions to House candidates: Gini index across districts



Notes: Each dot corresponds to a House general election and shows the Gini index of the total amount of money received by candidates across congressional districts. In the top graph, we consider the sum of contributions received by both candidates. In the bottom left (resp. right) graph, we only consider the contributions received by Democratic (resp. Republican) candidates. Contribution data are missing for 6 percent of the candidates. Appendix Figure A7 shows the same graphs excluding districts where at least one candidate has missing contribution data.

[21] Appendix Figure A8 shows robustness to using the Herfindahl index instead of the Gini index.

Table 4: Correlation between contributions to candidates and vote margin

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome	District's share of total contributions received by candidates					
	Vote margin - continuous			Vote margin - quartiles		
	All	Democrat	Republican	All	Democrat	Republican
Vote Margin	-0.0036***	-0.0032***	-0.0040***			
	(0.0001)	(0.0001)	(0.0001)			
Quartile 2				-0.194***	-0.214***	-0.176***
				(0.006)	(0.008)	(0.008)
Quartile 3				-0.249***	-0.272***	-0.229***
				(0.006)	(0.007)	(0.008)
Quartile 4				-0.276***	-0.255***	-0.301***
				(0.006)	(0.008)	(0.008)
Observations	9,962	9,962	9,962	9,962	9,962	9,962
Mean DepVar	0.231	0.231	0.231	0.231	0.231	0.231
Sd DepVar	0.212	0.264	0.296	0.212	0.264	0.296

Notes: This table reports the correlation between the share that the district represents in the total contributions and the vote margin in the corresponding general election. We include year fixed effects. In columns 1 and 2 we consider the total contributions received by both candidates, whereas in columns 2 and 5 (resp. 3 and 6), we consider only the contributions received by Democratic (resp. Republican) candidates. In columns 1 to 3, the independent variable is the continuous vote margin. In columns 4 to 6, the independent variables are dummies for vote margin quartiles, and the coefficients are expressed relative to the first quartile (closest elections).

6 Discussion and Interpretation

In this section, we interpret the empirical facts that we documented through the lens of the model. In our model, two forces can jointly explain the evolution of seat margins and vote margins over time. The first force is the ability of politicians to better identify the positions of the median voter at the district level and at the national level. This represents information flows from voters to candidates and parties. Better information on the location of the median voter allows parties to adjust their platforms in ways that lead to closer seat margins.

However, this is not enough to explain our facts. If the only thing that happened was a decline in uncertainty, district-by-district vote margins would also decline. In the data, we see stable vote margins, on average, across districts over time. The second force that can explain the latter fact is the nationalization of politics, stemming from voters relying increasingly on national media sources. This leads to a decrease in the salience of local issues relative to national issues, as reflected by the lower incidence of split-ticket voting across local and national elections, and the greater congruence of local and national platforms. This implies large vote margins in locations where voter preferences are far from the national median.

In what follows, we survey the existing body of knowledge that lends credence to these two

forces being present in the US context. The first force is the subject of a now vast literature on polling, focus groups, and social media - means by which politicians are better able today than in the past to learn about voter preferences. The second force is the subject of a growing literature on the nationalization of politics in the US.

6.1 Declining Uncertainty over Voter Preferences

The number and methodology of polls. The first poll to be conducted in a US election occurred in 1936 (Hillygus, 2011), although unscientific polls, or trial heat tallies, were carried out as early as 1824 in taverns, militia offices and public meetings (Smith, 1990). John F. Kennedy's 1960 presidential campaign was the first to use political polling as a planning tool. Traugott (2014) write: "By the 1970s, the networks and major metropolitan dailies combined forces and resources to establish their own polling operations [...]. Further technological innovation allowed them to do quick reaction polls to campaign events [...]" (p. 342). Jacobs and Burns (2004) studied the use of presidential polling during the Presidencies of Kennedy, Johnson, Nixon, and Reagan. From the first to the last, the number of private polling reports went from 15 to 204, and the number of questions asked in such polls went from 674 to 8,836 questions. After this period, the number of polls continued to expand very rapidly: Traugott (2005) reports a 900% increase in trial heat polls between 1984 and 2000, mostly attributable to an increase in daily tracking polls. The rapid expansion of polling continued unabated in the last quarter century. The number of active pollsters more than doubled between 2000 and 2022, from 29 to 69 (Kennedy et al., 2023).

Changes in methodology. The intensity of polling increased at the same time as the methodology of polling evolved and improved. At first, polls were administered mainly in person or by telephone using live interviewers. Later, pollsters relied more on Internet surveys and interactive voice-response (IVR) polls (Hillygus, 2011; Kennedy et al., 2023). Jacobs and Shapiro (2005) identify the 2004 election as a turning point. Sampling methods also evolved. Probability-based panels (i.e. national survey panels recruited using random sampling from a database that includes most people in the population) became more frequently used (Kennedy et al., 2023), and weighing techniques became more sophisticated. Finally, there has been increased use of polling aggregation: aggregators combine state-level and national-level data, as well as data from different polling firms, leading to greater precision, and lower variance and bias (Traugott, 2014; Westwood et al., 2020). Overall, the increase in the number of polls and the growing sophistication of polling have resulted in greater accuracy, as discussed by the Pew Research Center (August 2024).

The rise of state-level polling. While national polling was coming of age, there was a relative dearth of more local polling (Hillygus, 2011; Traugott, 2014). Limited data availability meant that occasional state-level election forecasts had noisy estimates (Holbrook and DeSart, 1999). However, with changes in polling technology and costs, greater access to the Internet, and improvements in statistical and computing power, state-level forecasts have become routine. The use of technologies like IVR methods reduced the cost of polling and helped produce more frequent measures of

candidate standing at both the state and national levels (Hillygus, 2011). For example, according to an analysis by the National Council on Public Polls,"there were 743 state level polls in the last two weeks of the 2008 election, compared to 254 during the same time span in 2004 (the first year they evaluated the accuracy of state level polls)" (p. 970) (Hillygus, 2011). The information on voter preferences became more precise, at the both the local and national levels.

Beyond polls. While polls represent an important and potentially accurate way to assess voter preferences, they are by no means the only tool that politicians have to gather information. Beyond polls, candidates and parties make use of databases containing information about every registered voter in the US, including their partisan registration, location, etc. (Hillygus, 2011). Politicians can also rely on survey data about the preferences of voters on specific issues, on focus groups organized by parties, candidates or media outlets, on feedback received through social media, and through direct contact with voters. Additionally, prediction markets can serve to aggregate a large quantity of information into simple summary statistics (Wolfers and Zitzewitz, 2004). In a wide-ranging analysis of the sources of information on which politicians rely, Walgrave and Soontjens (2023) stress the importance of these alternative sources of information for politicians. While not all of them have undergone the type of expansion that is observed for polling, social media has vastly expanded the set of voters who can provide information to politicians, compared to direct in-person contact. Whether through polls or other sources, then, the modern politician has access to much more granular and precise information on voter preferences than her historical predecessor.

The impact on political campaigns. These various improvements in the informational environment help parties learn about shocks to preferences. For instance, parties can adjust their political campaigns to shifts in the size or political leanings of certain demographic groups. This helps explain why forecasts based on demographic trends are unable to predict recent electoral results (Calvo et al., 2024).

Improved information also allow campaigns and candidates to adopt more targeted and precise electoral strategies. For instance, Hillygus (2011) writes: "By the 1960s, public opinion polls were central to campaign strategy, used to determine which issues to emphasize, to test messages, and to identify persuadable voters." (p. 976). She adds that "candidates are able to more efficiently target their resources to particular subsets of the electorate." (p. 977). Jacobs and Shapiro (2005) discusses specific examples of targeting strategies based on polls, for instance the use of the "Voter Vault" database by the GOP in the 2004 presidential election in Ohio, which was used to "deluge individual voters" (p. 639). They add that "polls and other sources of information are being used to selectively mobilize support from targeted subgroups of voters. Polls are being used to narrow rather than widen the appeal of candidates." (p. 639). In tandem with national polling, the rise of more locally targeted polls contributed to a reduction in electoral uncertainty, and allowed for a more precise targeting of swing states and districts.

6.2 The Nationalization of US Politics

Indicators of nationalization. Nationalization can be defined as the growing importance of national issues compared to local issues in voter choices: voters base their voting decisions to a greater extent on national platforms, leading to a higher congruence of voting behavior between constituency-wide and nation-wide ballots (Sievert and McKee, 2019; Carson et al., 2020). Split-ticket voting has thus been used as a key indicator of nationalization. For instance, Moskowitz (2021) and Fiorina (2017) use surveys of voters over time and look at the share of respondents who voted for candidates of the same party in elections for the presidency on the one hand, and the Senate, House or governor on the other hand. A wide range of related measures also try to capture the degree of congruence in voter choice between nation-wide ballots (the presidency) and more local ones (Angelucci et al., 2024; Jacobson, 2015; Hopkins, 2018).[22]

Trends in nationalization. Many of these measures indicate that nationalization followed a U-shaped pattern since the 1950s. In particular, Hopkins (2018) argues that the degree of nationalization of US politics decreased in the 1960s and 1970s, and has steadily increased since at least the 1980s. He cites a wide range of papers and books, such as Stokes (1967) and Bartels (1998), to further support this claim. Jacobson (2015) uses ANES data from 1950-2014 and documents a U-shaped evolution of party loyalty and of voter making congruent party choices across House and presidential elections, consistent with Hopkins (2018). Fiorina (2017) further shows that split voting peaked in 1984 and has become less frequent since then. These findings indicate that indeed, in recent decades (since the 1980s); the degree of nationalization of US politics has risen, and is still increasing to record highs.[23]

Causes of nationalization. Many contributions attribute the recent rise in nationalization since the 1980s to the evolution of media markets. There is robust evidence showing that the advent of new media such as mobile internet (Dagorret and Guo, 2024; Bessone et al., 2022), television (Gentzkow, 2005; Angelucci et al., 2024) and the decline of local news (Moskowitz, 2021) have decreased the salience of local issues and raised the salience of national issues in politics. For instance, Gentzkow (2005) finds that the staggered introduction of television in the United States led to substitution away from media sources with more local coverage. Relatedly, Angelucci et al. (2024) finds that the arrival of TV not only reduced newspapers circulation and prices, but also reduced the number of local stories in newspapers. They also find that locations "that were exposed earlier to television exhibit greater party vote share congruence" (p. 64) between House and presidential elections. Hopkins (2018) also devotes a whole chapter arguing that the fall of local newspapers and the advent of TV/Internet has increased nationalization. Finally, Martin and

[22] For instance, Hopkins (2018) uses a battery of indicators, including the aggregate correlation of voting between presidential and midterm gubernatorial elections, the turnout ratio between gubernatorial and presidential elections, and a measure of the President's home-state advantage.

[23] Kuriwaki (2025) shows that split-ticket voting has decreased to negligible amounts for congressional elections, but that it remains relatively more frequent in state and local elections.

McCrain (2019) argue that the shift to greater news coverage of national politics is at least in part attributable to supply-side factors, by analyzing the acquisition of local television stations by the Sinclair Broadcast Group, and showing that it led to an "increase in the share of programming devoted to coverage of national politics" (p. 373).

Additional forces likely played a role, beyond the changes in media markets. Hopkins (2018) also emphasizes the nationalization of party brands, that he ties to a switch from patronage-based to ideological-based activism and to the centralization and professionalization of campaign funding. Similarly, according to Fiorina (2017), in "the political science community there is general agreement that party sorting, which has produced more internally homogeneous parties, underlies the nationalization movement." (p. 10) Voters would perhaps split votes if they found conservative Democrats or liberal Republicans, but these are a dwindling breed, as moderate candidates are less and less likely to run for office (Thomsen, 2014, 2017). Fiorina (2017) claims that changes in the funding structure fueled this trend: "Individual contributions increasingly come from ideologically committed donors who hail from specific geographic areas—Texas for Republicans, Manhattan and Hollywood for Democrats [...] No matter what state or district you come from, if you need contributions from Texas oil interests or Hollywood liberals, you are going to lean in their direction." (p. 11) Similarly, despite arguing that 3G internet is a root cause of nationalization, Dagorret and Guo (2024) also state that the need to attract out of state donors is a key mechanism. They show that political posts on Facebook about national topics attracted more donations.

The impact on political platforms. As voters attribute more weight to national issues, local candidates are increasingly perceived as reflections of their party's national platforms. Together with the need to attract donations at the national level, this leads candidates to run on national platforms. This is reflected by the homogenization of party platforms across states, as emphasized by Hopkins (2018). Beyond electoral campaigns, nationalization also manifests itself at the post-electoral stage with changes in legislator behavior. For example, Dagorret and Guo (2024) write that 3G internet caused US representatives to introduce "8.5% more high-profile bills that attract widespread media attention and have a nationwide impact [...] Conversely, they have decreased their participation in constituency-oriented committees by 20.5%" (p. 3-4). Relatedly, using data from Senate and House floor speeches, Noble (2024) finds that "legislators reference the president [...] increasingly so as a district's media environment becomes more nationalized." In sum, candidates and elected officials, as a result of the nationalization of politics, increasingly stress national issues to the detriment of local issues.

6.3 Additional Explanations

We now turn to other possible explanations for the stylized facts presented in Section 3. In particular, we discuss how gerrymandering and spatial sorting could relate to the evolution of vote margins and seat margins.

6.3.1 Gerrymandering

Gerrymandering has no scope for explaining the evolutions that are seen in the Senate and the presidential Electoral College, since these rely on states as constituencies, and are therefore not subject to a gerrymander.

However, the growing sophistication of partisan gerrymandering - itself stemming from the better ability to identify the location and political preferences of voters (i.e. better information) could in principle account for some of the dynamics of vote margins observed in the House. Many often think of partisan district redrawing as creating safe seats, and therefore conclude that it could contribute to persistently elevated vote margins for House elections. However, the now-vast literature on gerrymandering offers a cautionary tale.[24] Indeed, when carrying out district redrawing, partisans often pursue a "crack and pack" approach - trying to pack their opponents into as few districts as possible while trying to create a large number of districts where their party can command a majority (although the wisdom of such an approach has recently been debated - see Friedman and Holden (2008)). This has ambiguous effects on vote margins: packed districts tend to have high vote margins, but cracked districts could have smaller ones, since the goal of cracking is to win with small margins in a broad set of districts.

Since gerrymandering would have an ambiguous effect on vote margins in the House, and since it cannot account for the patterns observed in the Senate and Electoral College, we conclude that gerrymandering is unlikely to offer a resolution for the empirical puzzle documented in this paper.

6.3.2 Spatial Sorting

Spatial sorting could also have effects on vote margins, if the supporters of different parties increasingly cluster together geographically. A recent literature has documented such a process, and sought to explain its causes. For instance, Bishop and Cushing (2009) argued that Americans are increasingly choosing to live in like-minded neighborhoods, leading to an increase in geographic political polarization. The idea of a "big sort" was criticized and even referred to as a myth (e.g., Glaeser and Ward (2006) and Abrams and Fiorina (2012)). However, more recent papers find evidence of increasing partisan clustering (Brown et al., 2025; Kaplan et al., 2022). Brown et al. (2025) also explore the determinants of partisan clustering, highlighting that residential sorting, the main factor studied so far in the literature, plays a small role. Instead, partisan clustering is mainly driven by generational changes and changes in partisanship.

The evidence on partisan spatial clustering focuses on measuring sorting within states, by considering census tracts, counties or congressional districts. Kaplan et al. (2022) rely on a new variance-based index of heterogeneity in partisanship and ideology, which allows for a decomposition

[24]The literature on partisan gerrymandering is indeed vast. Among the salient contributions, see Owen and Grofman (1988), Gelman and King (1994), Shotts (2002), McCarty et al. (2009), Gul and Pesendorfer (2010), and more recently Sabouni and Shelton (2022), Jeong and Shenoy (2024) and Bouton et al. (2024). For a review, see Kolotilin and Wolitzky (2024).

into differences within and between regional clusters, and for a comparison of the degree of sorting at different levels of geographic disaggregation (states, counties and precincts). Crucially, contrary to the level of segregation within states, the across-state partisan segregation is not historically high. In particular, while partisan clustering within states is at a historical high, the current red/blue state divide is lower than it was from the mid-1890s to the mid-1920s.

Hence, while spatial sorting could potentially account for the decline in the share of very close elections at the House district level, it is less likely to account for trends in vote margins for Senate and presidential elections, where states are the relevant districts. Moreover, it is unclear how sorting could account for closer seat margins.

7 Conclusion

In this paper, we document new stylized facts about the evolution of seat margins and vote margins for House, Senate and presidential elections in the United States since the 19th century. We show that, in the last sixty years, seat margins at the chamber level have declined, to the point that recent election outcomes have been unusually close by historical standards. However, this evolution has not been accompanied by a corresponding decline in vote margins at the constituency level. In other words, seat margins have not fallen because elections have become closer at the constituency level.

We argue that these trends result from two changes in the nature of political competition. The growing availability of information on voter preferences enables the two parties to identify and target the national median voter, resulting in closer seat margins. Concurrently, the growing nationalization of politics explains the persistent vote margins at the constituency level. As voters put more weight on national issues, candidates are perceived as mere reflection of their national parties, preventing convergence to the local median. Finally, we document that, as a result of this new political landscape, campaign resources have become increasingly concentrated in a smaller number of swing districts.

Both the increase in information about voter preferences and the nationalization of politics are fueled by changes in the informational landscape, in particular the multiplication of information sources and the growing coverage of national issues. These changes are of a technological nature and are therefore likely to prove durable. So are the political consequences we highlight in this paper: closer seat margins, persistent vote margins, and the growing attention paid by politicians to swing districts. In turn, these developments are likely to affect voter attitudes and behavior. The disconnect between large vote margins at the constituency level and tight seat margins at the national level can make voters question the legitimacy of elected officials and heighten their perceptions of polarization.[25] Moreover, resources and policies are increasingly targeted toward a smaller subset of districts, with potential implications for spatial inequalities and voter alienation.

[25]Polarization increases when two parties have a more balanced number of seats, candidates have more congruent platforms within parties and more different ones across parties. This is precisely what happens when we go from Case 1 to Case 3 in our theoretical framework.

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Appendix

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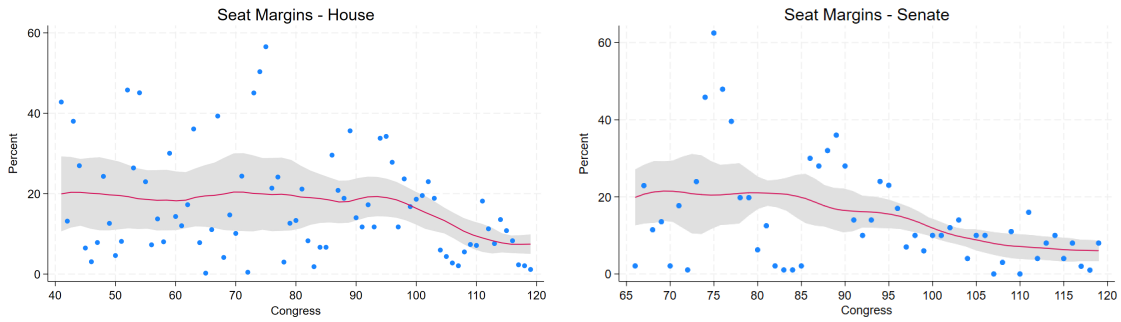
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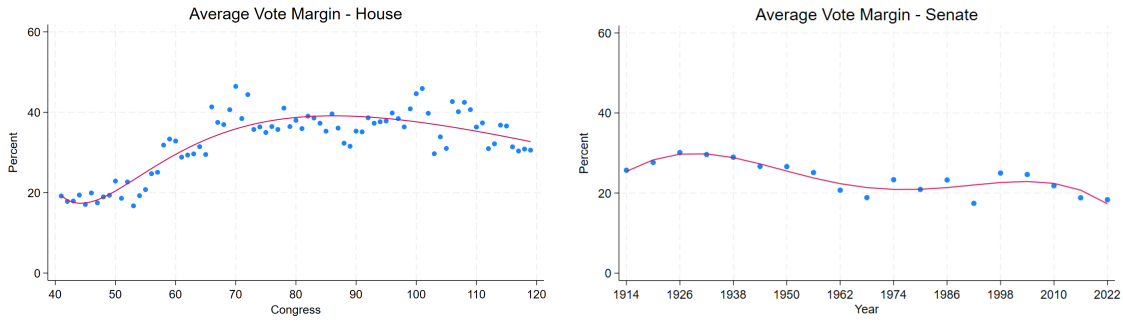
A Additional Figures

Figure A1: Evolution of Seat Margins - Alternative Data Sources



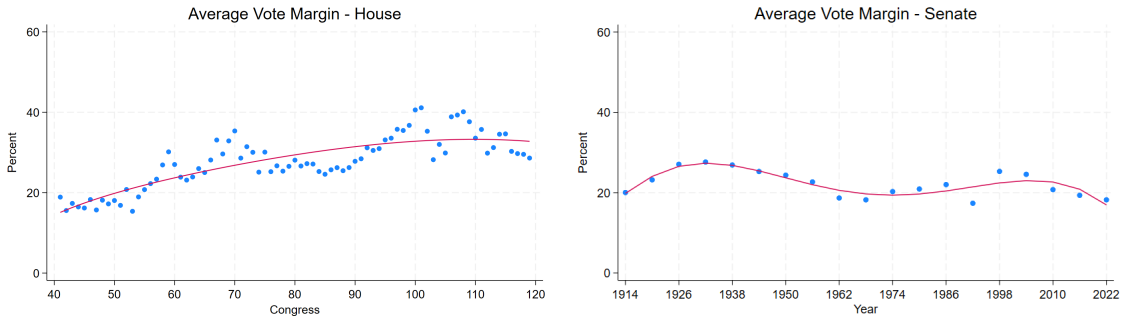
Notes: Each dot corresponds to the seat margin of a given Congress. The left-hand side graph considers the composition of the House from the 41st Congress (1869-1871) to the 119th Congress (2025-2027), and the data come from https://history.house.gov/Institution/Party-Divisions/Party-Divisions/. The right-hand side graph considers the composition of the Senate from the 65th Congress (1917-1919) to the 119th Congress (2025-2027), and the data come from https://www.senate.gov/history/partydiv.htm.

Figure A2: Evolution of Vote Margins - Including special elections



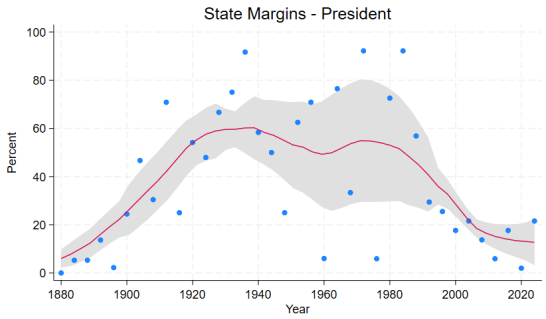
Notes: On the left-hand side graph (House elections) each dot considers the average of the congressional districts' vote margins for a given general election, starting with the elections for the 41st Congress. On the right-hand side graph (Senate elections) each dot considers the average states' vote margins over periods of six years, starting with the period 1914-1920. We exclude multi-member districts. When an election is decided in multiple rounds, we consider the vote margin in the ultimate round.

Figure A3: Evolution of Vote Margins - Excluding uncontested elections



Notes: On the left-hand side graph (House elections) each dot considers the average of the congressional districts' vote margins for a given general election, starting with the elections for the 41st Congress. On the right-hand side graph (Senate elections) each dot considers the average states' vote margins over periods of six years, starting with the period 1914-1920. We exclude special elections and multi-member districts, and we further exclude uncontested elections where one candidate received all the votes. When an election is decided in multiple rounds, we consider the vote margin in the ultimate round.

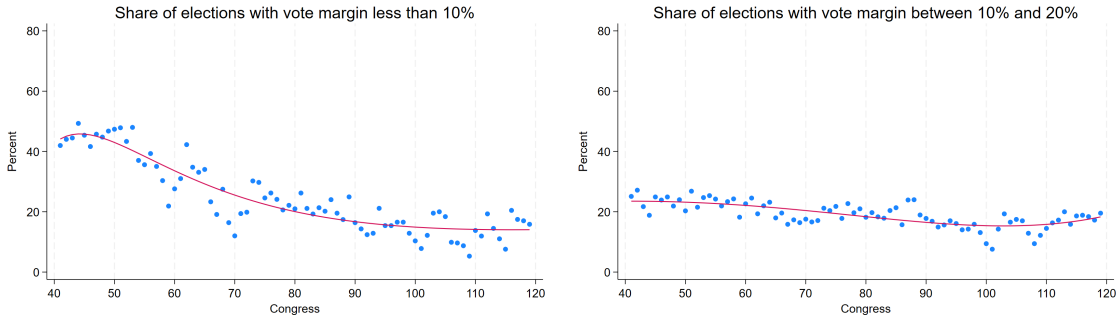
Figure A4: Evolution of Margins in terms of number of states won



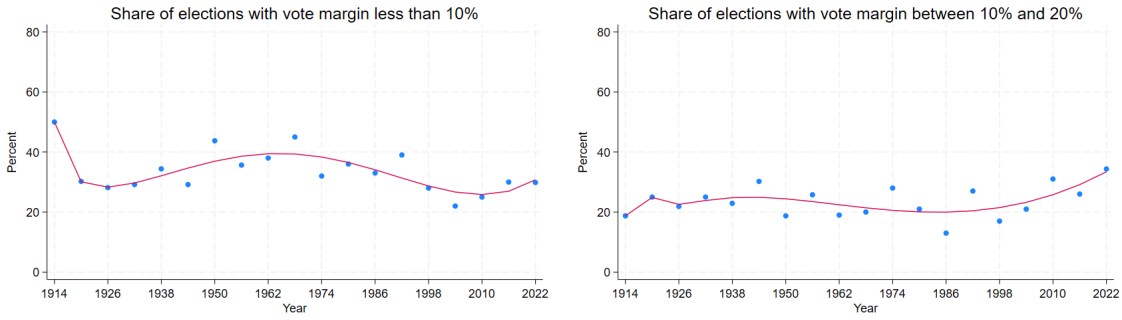
Notes: Each dot corresponds to the margin of victory in terms of number of states won, from the 1880 to the 2024 presidential elections..

Figure A5: Share of close elections

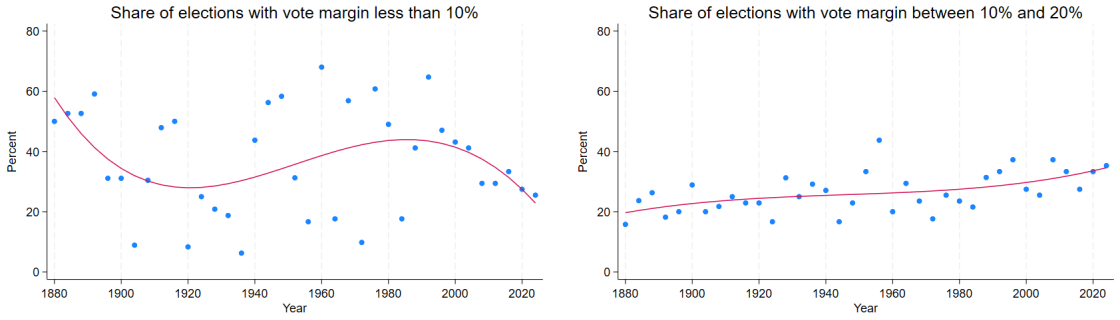
House



Senate

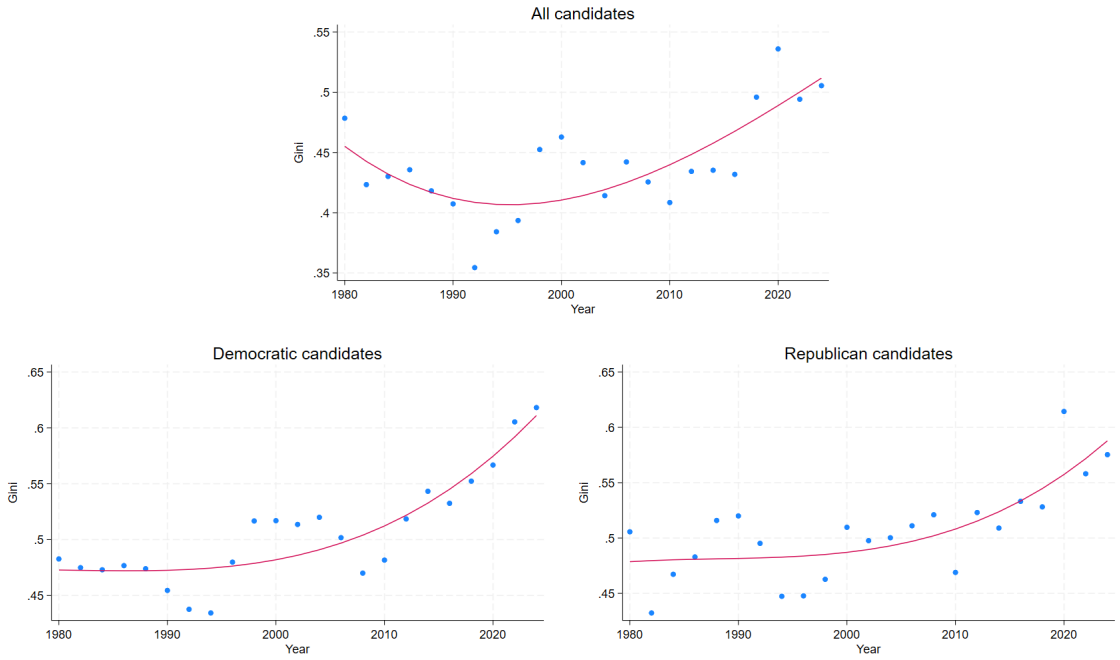


President



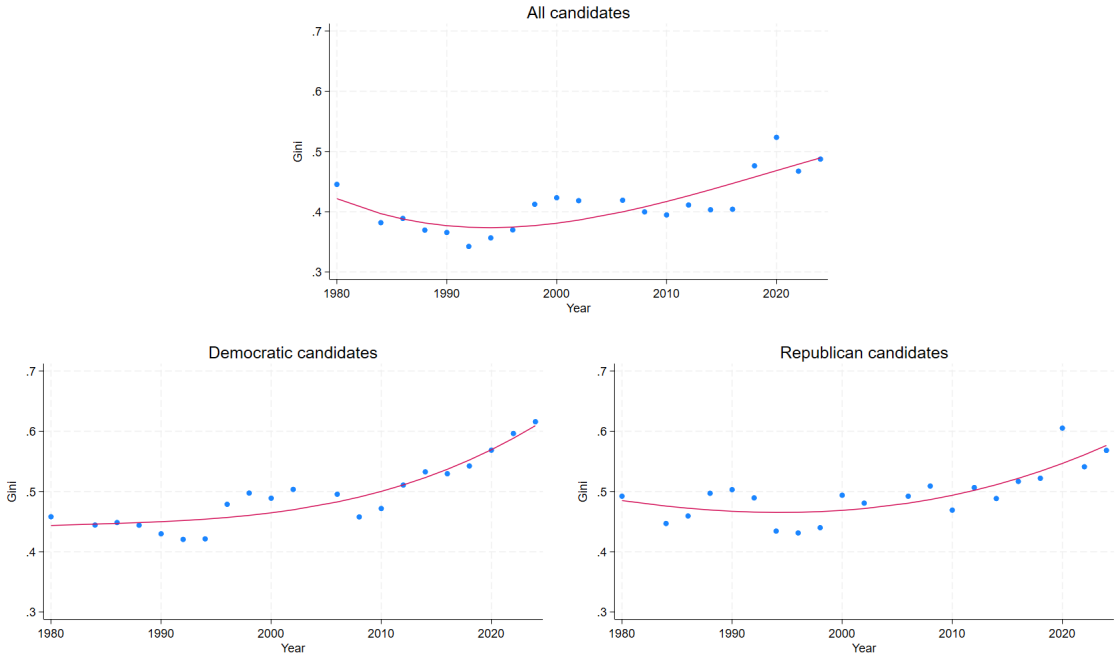
Notes: We compute the share of elections in which the vote margin was less than 10 percent or between 10 and 20 percent. For the House (top panel), each dot considers the elections for a given Congress across congressional districts, starting with the elections for the 41st Congress. For the Senate (middle panel), each dot considers the elections taking place in a 6-year period across states, starting with the period 1914-1920. We exclude special elections and multi-member districts. When an election is decided in multiple rounds, we consider the vote margin in the ultimate round. For the presidential elections (bottom panel), each dot considers the share of states where the popular vote margin falls below 10 percent or between 10 and 20 percent, from the 1880 to the 2024 presidential election.

Figure A6: Spending by House candidates: Gini index across districts



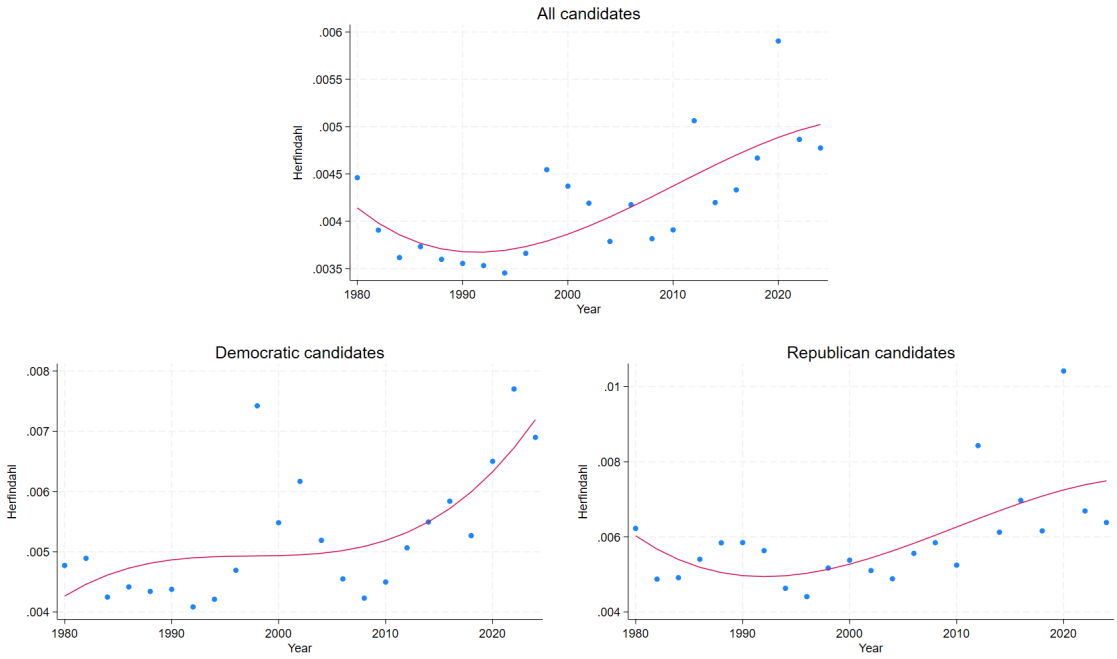
Notes: Each dot corresponds to a House general election and shows the Gini index of the total amount spent by candidates across congressional districts. In the top graph, we consider the sum of money spent by the Democratic and Republican candidates. In the bottom left (resp. right) graph, we only consider the money spent by Democratic (resp. Republican) candidates.

Figure A7: Contributions to House candidates: Gini index across districts - Excluding missing values



Notes: Each dot corresponds to a House general election and shows the Gini index of the total amount of money received by candidates across congressional districts. In the top graph, we consider the sum of contributions received by the Democratic and Republican candidates. In the bottom left (resp. right) graph, we only consider the contributions received by Democratic (resp. Republican) candidates. We exclude districts where at least one candidate has missing contribution data.

Figure A8: Contributions to House candidates: Herfindahl index across districts



Notes: Each dot corresponds to a House general election and shows the Herfindahl index of the total amount of money received by candidates across congressional districts. In the top graph, we consider the sum of contributions received by the Democratic and Republican candidates. In the bottom left (resp. right) graph, we only consider the contributions received by Democratic (resp. Republican) candidates. Contribution data are missing for 6 percent of the candidates.

B Data Appendix

We collected data on all US House elections taking place from 1868 to 2024, all US Senate elections taking place from 1901 to 2024, and all presidential elections taking place between 1880 and 2024. Our data come from Dave Leip for the recent period and from the ICPSR for elections held on, or before 1990.[26]

This section describes how we cleaned these datasets, the set of consistency checks we performed, and the correction we made to the original data. We used two main data sources to cross-check our data, correct some election results, and add missing elections: OurCampaign and Wikipedia.[27] We performed the data cleaning separately for each election type, but we followed the same steps.

B1 ICPSR dataset

We used the candidate file that contains the votes received by each candidate along with their name and party, at the congressional district level for House elections and at the state level for Senate and presidential elections. The dataset contains both general and special elections. We followed the instructions provided by ICPSR in the Codebook text file to perform the cleaning of the raw data.[28]

We then filled in some missing information. We identified elections without any votes recorded, elections in which the vote count was missing for some candidates, and elections in which the name and party of some candidates were missing. Using our alternative online sources, we manually added the results of 512 House elections, and corrected the vote count or candidate information of at least one candidate in 244 House elections, 4 Senate elections, and 9 presidential elections.[29]

B2 Dave Leip dataset

We used two files: the "result" file providing the number of votes received by each party in a given election, and the "candidate" file providing the list of all candidates running in the election, along with their party. We merged them based on the party codes to obtain the votes going to each candidate.[30] During the merge process, we identified inconsistencies in the list of political

[26] Dave Leip data start in 1990 for Senate elections and in 1992 for House elections.

[27] We also used Ballotpedia to verify some information on candidates' party affiliation.

[28] In some elections, the same candidate had several entries with different party names. In this case, we aggregated the votes at the candidate level, considered the party associated with the highest number of votes as the main party, and recorded the other parties as additional parties. This happens for about 2 percent of the House and Senate elections.

[29] For instance, we corrected the 1942 US House election in the 6th district of Maryland using Wikipedia: https://en.wikipedia.org/wiki/1942_United_States_House_of_Representatives_elections#Maryland, the 1916 US House election in the 10th district of California using OurCampaign: https://www.ourcampaigns.com/RaceDetail.html?RaceID=114906.

[30] Special elections are included at the bottom of the result file. We included them in the database and added an indicator variable to identify them.

parties across the two files (e.g., the result file reported non-zero vote for the Democratic party but no candidate was assigned this party in the candidate file). We corrected the party codes when inconsistencies were found to ensure a perfect match.

Next, we filled in some missing information. We identified candidates listed in the candidate file but whose parties were not assigned any votes in the result file, as well as election results for which no candidate was listed in the candidate file. Using our alternative sources, we corrected the election results of 3 House elections and 12 Senate elections.

B3 Additional corrections on the consolidated database

After appending the two datasets (Dave Leip and ICPSR), we first investigated elections held under specific rules. For the House, we manually identified multi-member districts, which represent 0.4 percent of the elections over our period of analysis.[31] For the Senate, we manually identified elections held under several rounds (runoff elections or elections held under rank-choice voting).[32]

Second, for the House and Senate, we aggregated our election results at the Congress level and compared our data to online sources providing the chambers' composition over time. We used data from history.house.gov for the House (https://history.house.gov/Institution/Party-Divisions/Party-Divisions/), and data from senate.gov for the Senate (https://www.senate.gov/history/partydiv.htm).

The mismatches between the total number of seats reported in these sources and the ones obtained using our data enabled us to identify missing election results. We manually added the results of 122 House elections and 13 Senate elections using OurCampaign.[33]

For presidential elections, we only added the state-level results for D.C. for five elections for which it was missing.

Finally, we manually cross-checked the party name of all top two candidates who did not belong to one of the two main parties, corresponding to 4,261 candidates for the House (3.2 percent of all winners, and 11.2 percent of second placed) and 457 candidates for the Senate (2.3 percent of all winners, and 6.5 of second placed). For each of them, we looked for their party affiliation using

[31] We used the following Wikipedia page to identify states with at-large elections electing several members at once: https://en.wikipedia.org/wiki/List_of_United_States_congressional_districts, as well as state-specific Wikipedia pages, such as this one for Alabama: https://en.wikipedia.org/wiki/Alabama%27s_at-large_congressional_district. Plural districts also elect several members at once, but they are only present in the very first Congresses, and are thus not part of our sample.

[32] Using this Wikipedia page in particular: https://en.wikipedia.org/wiki/United_States_Senate. Only 7 elections ended up having more than one round during our period of analysis.

[33] This test also led us to correct the election results of 3 additional House elections, to remove 4 House elections for which the winner was not seated or not voting, to remove 2 House elections that elected a member for the end of the term only, and to correct the election type of 3 House and 10 Senate elections (general elections incorrectly tagged as special, or conversely).

Wikipedia (when available) and OurCampaign. This led us to re-classify 1,779 candidates as part of the Democratic or Republican party for the House, and 174 for the Senate.

C Model Appendix

C1 Mathematical Derivations for Case 1

Case 1 corresponds to local tailoring of platforms, with uncertainty on the positions of district median voters. This case is discussed extensively in the text, so this appendix confines attention to mathematical derivations.

C1.1 Equilibrium Derivations

At the district level, μ_i is given. To streamline the proof, let us denote the deviations from median voter μ_i by $\hat{x}_i^D$ and $\hat{x}_i^R$: $\hat{x}_i^D = x_i^D - \mu_i$ and $\hat{x}_i^R = x_i^R - \mu_i$. We have that $(\hat{x}_i^D + \hat{x}_i^R)/2 \in [-a-b; a+b]$. All voters j with an ideal point $x_{i,j} < \frac{\hat{x}_i^D + \hat{x}_i^R}{2}$ prefer D to R. These voters are a majority when $x_i^m < \frac{\hat{x}_i^D + \hat{x}_i^R}{2}$. The probability that D wins is thus : $Pr(x_i^m < t)$, with $t = \frac{\hat{x}_i^D + \hat{x}_i^R}{2}$.

- For $a < b$, the CDF of the random variable x_i^m:

$$F(t) = \begin{cases} 0 & \text{if } t < -a-b \\ \frac{(a+b+t)^2}{8ab} & \text{if } -a-b \leq t < a-b \\ \frac{t+b}{2b} & \text{if } a-b \leq t < b-a \\ 1 - \frac{(a+b-t)^2}{8ab} & \text{if } b-a \leq t < a+b \\ 1 & \text{if } a+b \leq t \end{cases}$$

- For $a > b$, the CDF of the random variable x_i^m:

$$F(t) = \begin{cases} 0 & \text{if } t < -a-b \\ \frac{(a+b+t)^2}{8ab} & \text{if } -a-b \leq t < b-a \\ \frac{t+a}{2a} & \text{if } b-a \leq t < a-b \\ 1 - \frac{(a+b-t)^2}{8ab} & \text{if } a-b \leq t < a+b \\ 1 & \text{if } a+b \leq t \end{cases}$$

We now turn to characterizing the equilibrium. By symmetry, we can consider only the case of $a < b$ and $a \geq b$ follows by switching notation.

For D:

$$\max_{\hat{x}_i^D} F\left(\frac{\hat{x}_i^D + \hat{x}_i^R}{2}\right)\left(-\hat{x}_i^D - \frac{1}{2}\right) + \left(1 - F\left(\frac{\hat{x}_i^D + \hat{x}_i^R}{2}\right)\right)\left(-\hat{x}_i^R - \frac{1}{2}\right) = \tag{10}$$

$$F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\left(\hat{x}_i^R-\hat{x}_i^D\right)-\hat{x}_i^R-\frac{1}{2} \tag{11}$$

For R:

$$\max_{\hat{x}_i^D} F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\left(\hat{x}_i^D-\frac{1}{2}\right)+\left(1-F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\right)\left(\hat{x}_i^R-\frac{1}{2}\right)= \tag{12}$$

$$F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\left(\hat{x}_i^D-\hat{x}_i^R\right)+\hat{x}_i^R-\frac{1}{2} \tag{13}$$

FOC for D:

$$\frac{1}{2}f\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\left(\hat{x}_i^R-\hat{x}_i^D\right)-F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)=0$$

FOC for R:

$$\frac{1}{2}f\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)\left(\hat{x}_i^D-\hat{x}_i^R\right)-F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)+1=0$$

Adding up the FOCs:

$$-2F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)+1=0\Rightarrow F\left(\frac{\hat{x}_i^D+\hat{x}_i^R}{2}\right)=\frac{1}{2}\Rightarrow\frac{\hat{x}_i^D+\hat{x}_i^R}{2}=0$$

Plugging in to the FOC for D:

$$\frac{1}{2}f\left(0\right)\left(\hat{x}_i^R-\hat{x}_i^D\right)-F(0)=0\Rightarrow\frac{1}{4b}\left(\hat{x}_i^R-\hat{x}_i^D\right)-\frac{1}{2}=0\Rightarrow\hat{x}_i^R-\hat{x}_i^D=2b\Rightarrow$$

$$\hat{x}_i^R=b,\hat{x}_i^D=-b$$

As we noted, by switching notation if $a\geq b$, $\hat{x}_i^R=a,\hat{x}_i^D=-a$, hence the solution is $\hat{x}_i^D=-c$ $\hat{x}_i^R=c$, as we claimed in the proposition.

Finally, we should rule out cases when $-\frac{1}{2}\leq\hat{x}_i^D\leq\hat{x}_i^R\leq\frac{1}{2}$ does not hold. First, suppose that $\hat{x}_i^R<\hat{x}_i^D$. At least for one of the politicians, probability of winning is not zero. This politician will strictly benefit from moving toward their ideal point, hence it is not an equilibrium. Now suppose that $\hat{x}_i^D<-\frac{1}{2}$. If D wins with positive probability, they want to deviate to the right, closer to their ideal point. If they don't win with positive probability then the opponent has to be at $\frac{1}{2}$. If the opponent is at $\frac{1}{2}$, then moving to $-\frac{1}{2}$ is a profitable deviation for D, which is a contradiction. Similar argument rules out $\hat{x}_i^D>\frac{1}{2}$. Hence, we ruled out all the cases.

C1.2 Asymptotics of Vote Margins

We begin with the vote margin formula without absolute values:

$$V_i^R-V_i^D=2(y_i+z)$$

The mean over n districts i:

$$\frac{1}{n}\sum_{i=1}^{n}(V_i^R - V_i^D) = \frac{1}{n}\sum_{i=1}^{n}(2y_i + 2z) = \frac{2}{n}\sum_{i=1}^{n} y_i + \frac{2}{n}\sum_{i=1}^{n} z$$

Recall that y_i is distributed uniformly over $[-a; a]$. As $n \to \infty$, the first term above converges to 0. The second term converges to $2z$. So the asymptotic mean of the vote margin across districts is $2z$. If one further considers the mean of the vote margin over m elections, when $m \to \infty$, it is zero, because z is distributed with mean zero.

The variance of vote margins across n districts, noting that y_i is i.i.d across districts and all shocks are independent from each other, is:

$$var(V_i^R - V_i^D) = 4var(y_i + z)$$

Since y_i is distributed uniformly over $[-a; a]$ and z is fixed across districts:

$$var(V_i^R - V_i^D) = \frac{4a^2}{3}$$

So the variance of vote margins is increasing in a. The variance of vote margins is zero when there is no idiosyncratic uncertainty over district median voters ($a = 0$).

C1.3 Mean of Absolute Vote Margins Over Districts

Let y_i be a uniform random variable defined on $[-a, a]$ and z be a constant such that $z \in [-b, b]$ with $a > 0$ and $b > 0$. We seek the expected value of $2|y_i + z|$, denoted $\mathbb{E}[2|y_i + z|]$.

To solve for this expectation, we need to consider three cases based on the position of z.

Case 1: $z \geq a$

In this case, $y_i + z$ is always positive for all $y_i \in [-a, a]$, so $|y_i + z| = y_i + z$.

$$\begin{aligned}\mathbb{E}[|y_i + z|] &= \int_{-a}^{a}(y + z)\frac{1}{2a}\,dy \\ &= \frac{1}{2a}\left[\frac{y^2}{2} + zy\right]_{-a}^{a} = z\end{aligned}$$

Therefore,

$$\mathbb{E}[2|y_i + z|] = 2z$$

Case 2: $-a < z < a$

In this case, $y_i + z$ can be positive or negative depending on the value of Y. We thus need to split the integral into two parts:

$$\mathbb{E}[|y_i + z|] = \int_{-a}^{-z} -(y + z)\frac{1}{2a}\,dy + \int_{-z}^{a}(y + z)\frac{1}{2a}\,dy$$

$$= \frac{1}{2a}\left(\frac{z^2}{2} + \frac{a^2}{2} - za\right) + \frac{1}{2a}\left(\frac{a^2}{2} + za + \frac{z^2}{2}\right) = \frac{z^2 + a^2}{2a}$$

Therefore,

$$\mathbb{E}[2|y_i + z|] = \frac{z^2}{a} + a$$

Case 3: $z \leq -a$

In this case, $y_i + z$ is always negative for all $y_i \in [-a, a]$, so $|y_i + z| = -(y_i + z)$.

$$\mathbb{E}[|y_i + z|] = -\int_{-a}^{a} (y + z)\frac{1}{2a}\, dy$$

$$= -\frac{1}{2a}\left[\frac{y^2}{2} + zy\right]_{-a}^{a} = -z$$

Note that in this case z is negative! Therefore,

$$\mathbb{E}[2|y_i + z|] = -2z$$

As a result, we have:

$$\mathbb{E}[2|y_i + z|] = \begin{cases} 2z & \text{if } z \geq a \\ \frac{z^2+a^2}{a} & \text{if } -a < z < a \\ -2z & \text{if } z \leq -a \end{cases}$$

C2 Mathematical Derivations for Case 2

In this appendix, we consider the case where local platforms are set uniformly by national parties. That is, local candidates must choose the platform set by national parties. Platforms are set in the same way as described in Section 4.4. However, contrary to Case 3, we continue to assume that the positions of local median voters are uncertain, so that $x_i^m = \mu_i + y_i + z$. This corresponds to the upper right quadrant (Case 2) of Table 2.

This case features both nonzero vote margins and nonzero seat margins. Seat margins are a function of the inherent advantage enjoyed by either one of the parties, as a result of national uncertainty on the electorate's preferences captured by b. Vote margins are a function of the extent of uncertainty on the preferences of the electorate, captured by a and b.

C2.1 Vote Margins

Vote margins are depicted in Figure C1. As for Case 3 (Section 4.4), we focus on the case where platforms are symmetric, so that $P^D + P^R = 1$ and the average party platform is equal to 1/2. Given the positions of the platforms, R will win any district where $x_i^m > 1/2$ (the situation depicted in Figure C1). The vote margin will be simply:

$$V_i^R - V_i^D = x_i^m - (1 - x_i^m) = 2(x_i^m - 1/2) = 2(\mu_i + y_i + z - 1/2) \tag{14}$$

Equation (14) makes it clear that three forces determine local vote margins in the case of national platforms: the district *ex ante* political orientation μ_i, the local shock y_i, and the national shock z. When $n \to \infty$, the mean of vote margins converges to $2z$. The mean of vote margins is $2z$ as in Case 1 (Section 4.3). Interestingly, the variance of vote margins is now asymptotically equal to $(4a^2 + 1)/3$, which is higher by $1/3$ compared to the case with local tailoring. This is sensible, since candidates in every district are now obligated to run on their party's national platform: a left-winged candidate in a right-winged district is going to lose by a bigger margin compared to the case where she could tailor her platform to local preference. The mean of vote margins, $2z$, is unchanged compared to the case of local tailoring, because of model symmetry. However, the absolute value of vote margin is higher than in Case 1 because the effects of nationalization and uncertainty compound each other, as shown by comparing Figure 7 (Case 1) and Figure C2 (Case 2).

Figure C1: Vote Shares with National Platforms and with Uncertainty

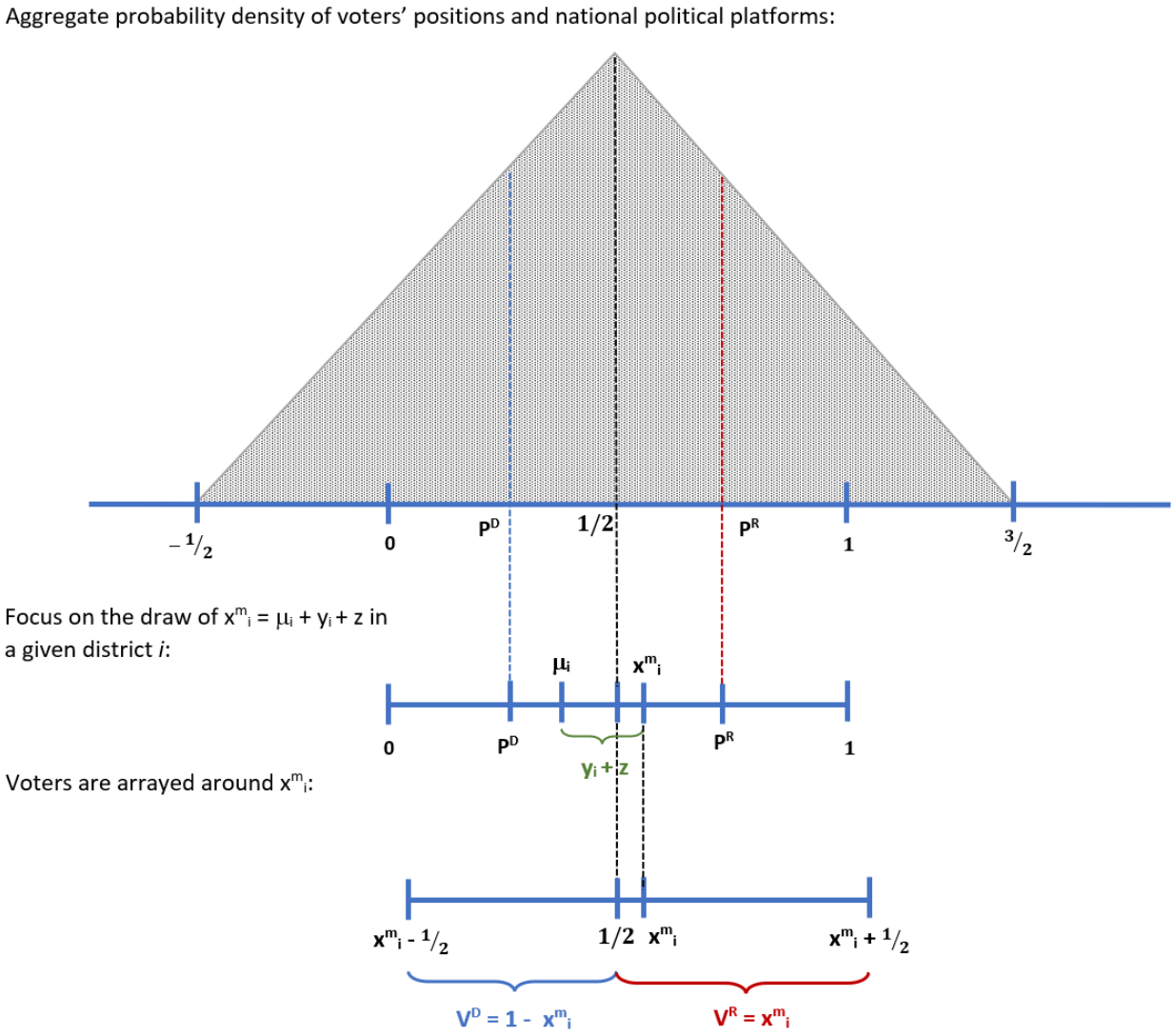
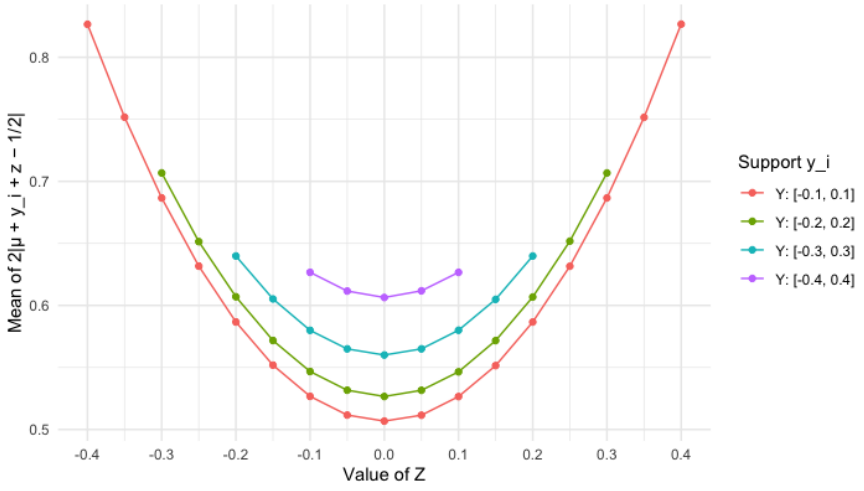


Figure C2: Mean Absolute Vote Margins in the Case of National Platforms and Uncertainty



C2.2 Seat Margins

We can again characterize seat margins analytically. Recall first that R wins the election in district i whenever $\mu_i + y_i + z - 1/2 > 0$. By the LLN, the share of elections where R wins, across all districts, converges to $\Pr(\mu_i + y_i + z - 1/2 > 0)$ as $n \to \infty$. Since we assume that platforms are decided after μ_i is drawn, we condition on draws of μ_i. Moreover, we assume that the number of districts n is large, so that national platforms are not influenced by specific draws of μ_i. Finally, recall that y_i and z are drawn after platforms are set but before the election takes place. We begin by calculating seat margins by integrating over y_i and then integrate over μ_i to find a formula for the seat margin as a function of z. Using the fact that y_i is distributed uniformly over the interval $[-a; a]$:

$$\Pr(y_i > 1/2 - \mu_i - z|\mu_i) = 1 - F(1/2 - \mu_i - z|\mu_i) = \frac{1}{2} + \frac{\mu_i + z - 1/2}{2a} \tag{15}$$

We integrate the probability of an R win over districts over μ_i:

$$\Pr(y_i > 1/2 - \mu_i - z) = \int_0^1 \left(\frac{1}{2} + \frac{\mu_i + z - 1/2}{2a}\right) d\mu_i = \frac{1}{2} + \frac{z}{2a} \tag{16}$$

The share of elections s^R where R wins converges to $\Pr(y_i > 1/2 - \mu_i - z)$ as $n \to \infty$. The seat margin is asymptotically:

$$s^R - s^D = \frac{z}{a} \tag{17}$$

Equation (17) is quite intuitive. Suppose first that $z = 0$. Under these circumstances, there is no inherent national advantage to either party, so the seat margin is zero. Suppose now that R has a national advantage ($z > 0$). Then the seat margin is positive and increasing in z. Finally, if the national shock is $z < 0$, then there is again a positive seat margin.

C3 Mathematical Derivations for Case 3

C3.1 Mean of Absolute Vote Margins Over Districts

Given that μ_i follows a uniform law on the interval [0;1] and that

$$|2\mu_i - 1| = \begin{cases} 2\mu_i - 1 & \text{if } \mu_i > 0.5 \\ -2\mu_i + 1 & \text{if } \mu_i < 0.5 \end{cases}$$

Then, by using the probability integral transform, we can compute the expectation of $|2\mu_i - 1|$ as :

$$\mathbb{E}[|2\mu_i - 1|] = \int_0^{\frac{1}{2}} (-2x + 1)\, dx + \int_{\frac{1}{2}}^1 (2x - 1)\, dx = 1/2$$