



THE CENTER FOR
Election Science

AMERICA (MIS) REPRESENTED:

How Vote Splitting Distorts the Electoral Process

2022 PRIMARIES REPORT

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ABOUT THIS REPORT

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EXECUTIVE SUMMARY

The America (Mis)Represented: 2022 Election Report examines how vote splitting distorts the electoral process in the United States, specifically focusing on the 2022 election cycle.

Vote Splitting in Elections:

- Vote splitting occurs in plurality voting systems when votes are divided among multiple candidates, often resulting in a winner who does not receive a majority of the vote.
- This phenomenon is prevalent across various levels of government, leading to non-majority winners who may not best represent their constituencies.

Main Findings from the 2022 Election Cycle:

- Approximately 11.9% of the 5,662 national primary elections (state legislative, statewide office, and congressional races) involved vote splitting.
- Vote splitting affected elections in both Democratic, Republican, and swing states, with New Hampshire, Arizona, Nebraska, California, and Nevada showing significant instances.
- Notable cases include J.D. Vance in Ohio and Andrea Salinas in Oregon winning with less than 50% of the vote in their primaries.

Voter Sentiment:

- There is a growing dissatisfaction with the electoral process, with a notable decline in the public's satisfaction with democracy from 41% in 2021 to 31% by early 2024.
- Many voters feel that elected officials do not truly represent their preferences, leading to a decline in trust and increased perception of indifference from politicians.
- Over 70% of voters in Michigan and Maryland agree that there should be a better way to vote for elected officials.

Statistical Analysis:

- We employ logistic regression models to analyze the probability of vote splitting occurring based on factors such as election competitiveness and the presence of incumbents.
- Open seat elections are approximately 7.8 times more likely to experience vote splitting.
- Competitive district elections are approximately 8.9 times more likely to experience vote splitting.

Recommendations for Reform:

- Implementing alternative methods such as approval voting, would allow voters to select all candidates they approve of, as a way to mitigate vote splitting and ensure more representative electoral outcomes.

- Studies show that approval voting produces more representative results by reflecting wider voter support and reducing strategic voting.
- Using a CA senate survey, we show that the results of the Senate primary race in 2024 would have resulted in Katie Porter finishing in second place instead of Garvey, suggesting a more representative election.

Conclusion:

The report highlights the significant impact of vote splitting on the electoral process and the subsequent representation of voters. It calls for urgent reform to address these issues and enhance the legitimacy of election outcomes, advocating for alternative voting methods like approval voting to ensure fairer and more democratic elections.

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INTRODUCTION

RECENT ELECTION CYCLES have further exposed the shortcomings of our electoral system, prompting urgent and important discussions about the representativeness of the candidates elected to office and the fairness of our voting processes. For instance, in 2022, Republican candidate J.D. Vance ran in the anticipated Ohio open seat Senate primary, securing a victory with only 32.2% of the vote and subsequently winning the general election. Similarly, Democratic candidate Andrea Salinas competed in Oregon’s newly created sixth congressional district for the 2022 U.S. House primary, triumphing over eight other candidates with only 36.8% of the vote, and later winning the general election. These were not isolated instances where this outcome occurred in the 2022 election cycle. **Three out of every ten** congressional primary races in 2022 resulted in a candidate winning without receiving a majority vote, with at least one advancing to later win the general election.



In the 2022 elections, 3 out of 10 Congressional primary races had winners without a majority vote, and 1 in 3 of these winners went on to win the general election.

Data source: The Vote Split Elections Project (2022).

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Amidst this backdrop, the integrity of the electoral process faces increased scrutiny, with growing concerns about its effectiveness and legitimacy. American voters continue to experience a decline in satisfaction with the functioning of the country’s democracy. In 2021, satisfaction levels were reported at 41%, dropping by 10 percentage points to 31% by the start of 2024.¹ Elections, by nature, serve a foundational role in democracy. They are a mechanism for constituents to express their preferences and ensure that their voices are reflected in the final outcomes. This process is fundamental for holding

¹ E.g. [1] Gallup. 2024. "Mood Remains Glum as Few Are Satisfied with State of the Nation." July 11, 2024.; [2] Gallup. 2023. "Record Low in U.S. Are Satisfied with How Democracy Is Working." June 22, 2023; [3] Pew Research Center. 2024. "Satisfaction with Democracy Has Declined in Recent Years in High-Income Nations." June 18, 2024.

representatives and elected officials accountable. Fair and regularly held elections are essential to maintaining a representative democracy, where officials are answerable to the electorate.

However, the growing dissatisfaction with democracy in the country indicates a rising concern that electoral results no longer reflect the true will of the people, thereby undermining the principle of representativeness. This issue is evident in the fact that elected officials may not always have the broadest support from their constituencies. A truly representative electoral result should elect the candidate with the widest support across the constituency. Unfortunately, this ideal is frequently unmet, leading to a disconnect between elected officials and the populace.

In many ways, our current electoral system is the root cause of this wave of concern. Plurality systems, where voters must choose only one candidate, can limit their ability to express true preferences, leading to winners who may not best represent their constituencies. Recent studies have extensively covered the growing dissatisfaction and mistrust among Americans in the electoral process and democracy broadly.² Trends of decreasing voter engagement and a feeling of inefficacy in the power of their vote forebode an eroding democracy, where the interests of a powerful few are represented above those of the people.

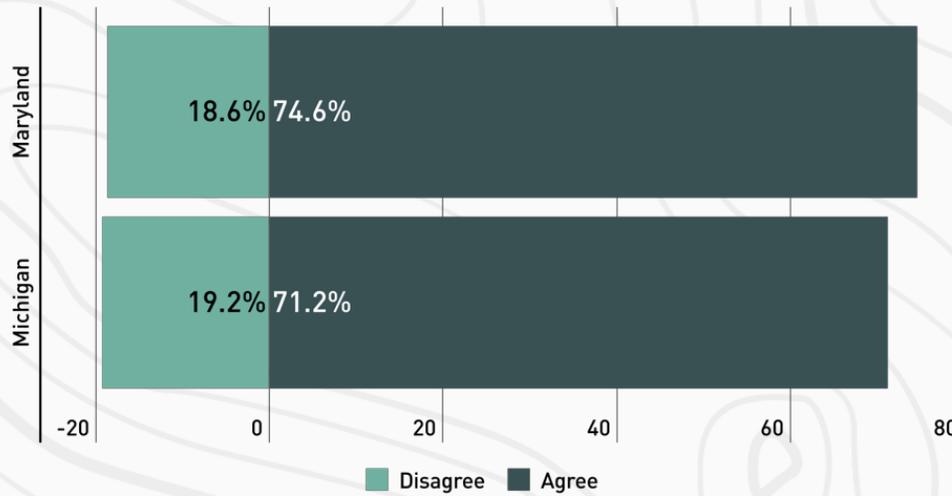
Studies conducted by The Center for Election Science (CES) in collaboration with SurveyUSA, involving voters in Michigan and Maryland, underscore this issue, with an overwhelming majority of respondents believing that American voters deserve a better way to elect their representatives.³ As illustrated in **Figure 1**, a significant portion of voters in both states share this sentiment. Specifically, 74.6% of Maryland voters and 71.2% of Michigan voters agree that the current electoral system needs improvement, with only 18.6% and 19.2%, respectively, disagreeing.

These findings, gathered from registered voters between March and April 2024, reflect a strong and consistent desire for electoral reform among the electorate in these states. The alignment in voter attitudes across Maryland and Michigan suggests a growing momentum for reformative actions at both state and federal levels.

² E.g [1] American Bar Association. 2024. "Increasing Trust in Our Elections." May 06, 2024.; [2] Axelrod, Tal. "Americans' Faith in Election Integrity Drops: POLL." *ABC News*, January 3, 2022.; [3] Yankelovich Center for Social Science Research. "After the 2022 Midterms: Do Americans Trust Elections?" University of California, San Diego, 2023.

³ The Maryland voter study was conducted from March 13, 2024, to March 17, 2024, and included 1,764 adults from the state of Maryland. The pool of adult survey respondents was weighted to US Census American Community Survey targets for gender, age, race, education, and home ownership. The full report and statement of methodology is publicly accessible [online here](#). The Michigan voter study was conducted from April 24, 2024, to April 29, 2024, and included 1,900 adults from the state of Michigan. The pool of adult survey respondents was weighted to US Census American Community Survey targets for gender, age, race, education, and home ownership. The full report and statement of methodology is publicly accessible [online here](#).

Figure 1. Voter Sentiment in Maryland and Michigan Towards the Electoral Process in the U.S.



Percent of Americans from Maryland and Michigan who say they agree or disagree that voters deserve a better way to elect their representatives

Note: The Maryland and Michigan voter attitudes and behavior studies were conducted with SurveyUSA in Maryland and Michigan from 03/13/24 to 03/17/24 and 04/24/24 – 04/29/24, respectively, amongst registered voters in each respective state. Null responses were excluded from the plot for clarity.

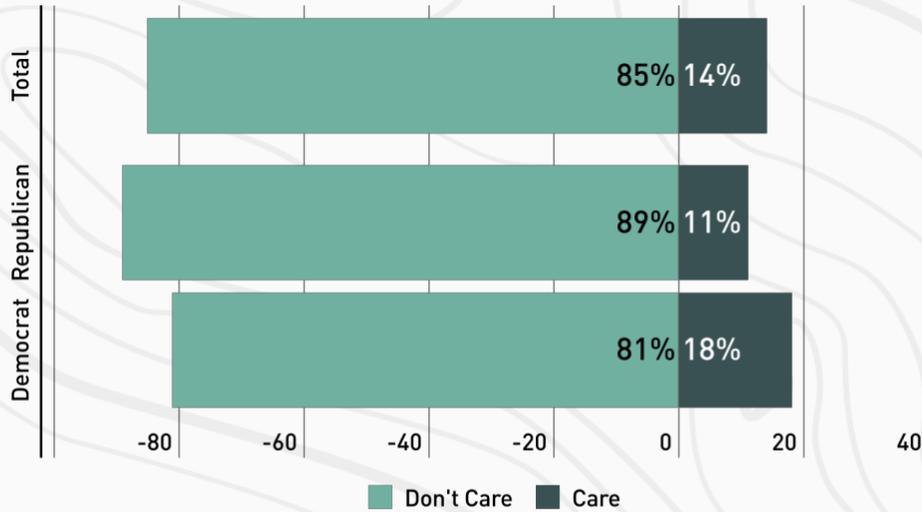
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Not only are voters becoming more dissatisfied with the current voting system, but they also feel increasingly disregarded by those elected to office. The perceived indifference from politicians towards constituents has risen since the 2000s, with 85% of Americans feeling that politicians do not care about them or what they think in 2023—a sentiment shared by both Democrats and Republicans.⁴

The stacked bar plot shown in Figure 2 illustrates the percentage of American voters who believe elected officials care (green) or do not care (gray) about their opinions, based on a recent survey. The data shows that 85% of respondents in the first category, 89% in the second, and 81% in the third feel that officials care about their views. Conversely, 14%, 11%, and 18% respectively believe officials do not care about their opinions.

⁴ Pew Research Center. 2024. "More Than 80% of Americans Believe Elected Officials Don't Care What People Like Them Think." April 30, 2024.

Figure 2. U.S. Public Perception of Elected Officials Indifference Towards What They Think.

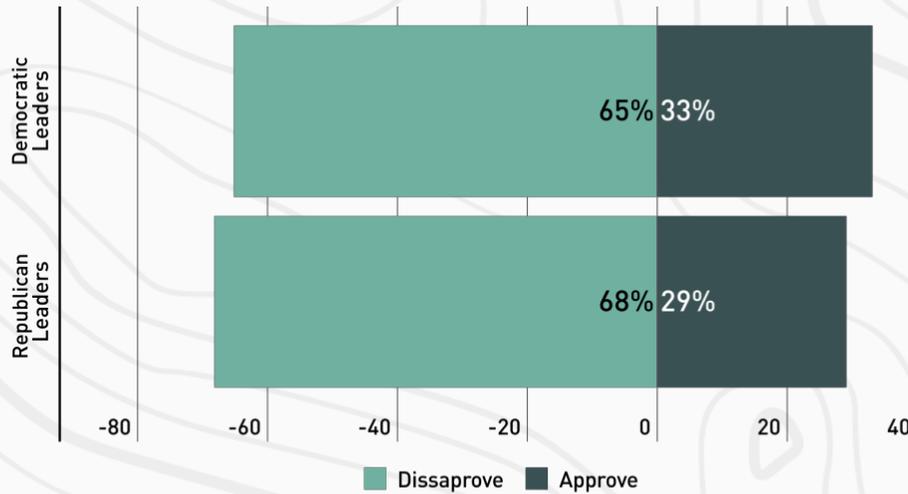


Percent of Americans who say elected officials care or don't care what they think

Data source: Pew Research Center (2023). Null responses excluded from plot.

Finally, this sense of being unrepresented by elected officials is reflected in how voters view the performance of political leaders in office. Americans have expressed highly negative views regarding congressional leadership's performance. As illustrated in **Figure 3**, survey data from 2023 shows that 65% of Americans disapprove of the job Democratic leaders are doing, with only 33% expressing approval. Similarly, 68% of respondents disapprove of Republican leaders' performance, with just 29% showing approval—suggesting that public trust in elected government and the electoral process is on the decline.

Figure 3. U.S. Public Approval/Disapproval of Congressional Leaders.



Percent of Americans who say they approve or disapprove of the job congressional leaders are doing

Data source: Pew Research Center (2023). Null responses excluded from plot.

Overall, the various issues of voter dissatisfaction, perceived indifference from elected officials, and declining trust in the electoral process center around the phenomenon where multiple candidates in a race with similar platforms or backgrounds draw votes from the same base—resulting in a non-consensus candidate winning with only a fraction of the total support.

This issue was visibly present with Senator Vance’s (R-OH) and Congresswoman Salinas’ (D-OR) outcomes in the 2022 elections and is becoming evident with the most recent primary elections, such as Congressman Schiff (D-CA) in California’s 2024 Senate primary race. These instances reiterate the importance of understanding this phenomenon to address the democratic challenges in our system. Consequently, this report aims to shed light on the understudied yet impactful phenomenon of what we define as **vote splitting**, and its role in distorting electoral outcomes.

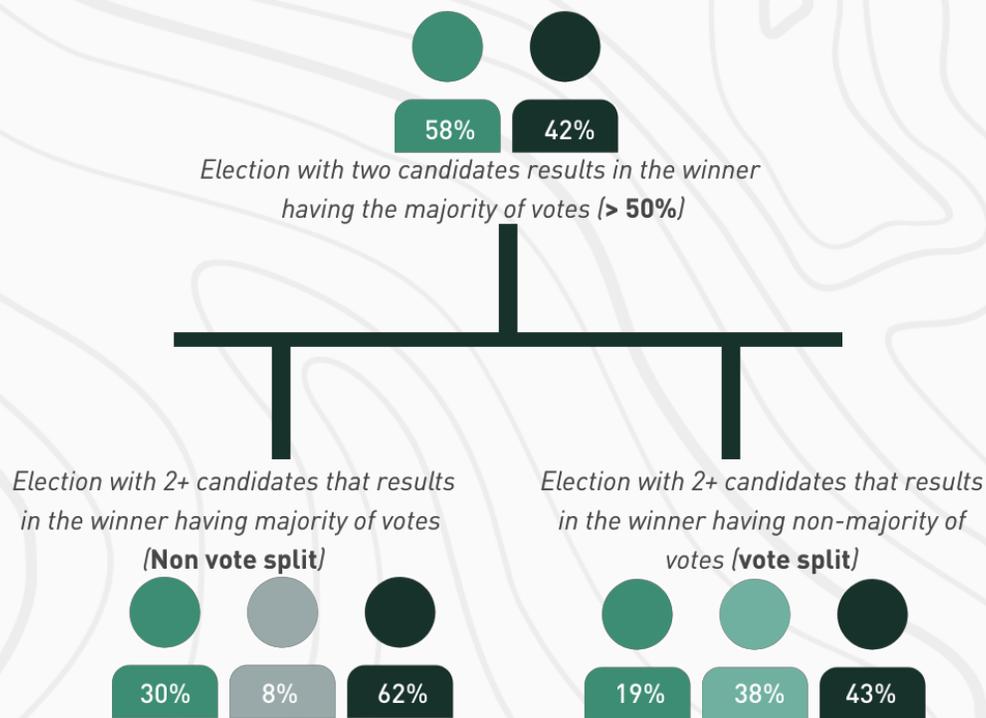
WHAT IS VOTE SPLITTING?

VOTE SPLITTING describes an electoral phenomenon found in plurality voting systems, often triggered by races with more than two candidates. It occurs when votes are divided among multiple candidates, preventing any one candidate from receiving a majority vote they might have garnered in a less crowded election. Given the United States’ plurality electoral process, or otherwise known as first-past-the-post (FPTP) system, the outcome of a **vote split election** is when the winning candidate receives less than half (i.e. less than 50 percent) of all votes casted. While the presence of additional candidates in a race can

lead to a spoiler effect, vote splitting is distinct in that it specifically refers to the division of votes between several candidates that if combined, the votes would represent a majority. Put simply, vote splitting may be considered the mechanism that leads to the spoiler effect.

As depicted in the flowchart from **Figure 4**, the presence of many candidates in an election may not always result in a vote split outcome, but it significantly increases the likelihood of votes being divided among candidates who share similar characteristics, whether ideological, demographic, or otherwise. In the example from the flowchart, the candidates that received 19% and 38% of the vote respectively share similar characteristics, which caused a vote split to occur between the two of them. This division implies that a candidate who differs more from the rest can likely win the election. Overall, vote split elections can be found at all levels of government.

Figure 4. Flowchart of How Vote Splitting Impacts Electoral Outcomes.



Data source: The Vote Split Elections Project (2022).

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THE LANDSCAPE OF BROKEN ELECTIONS IN 2022

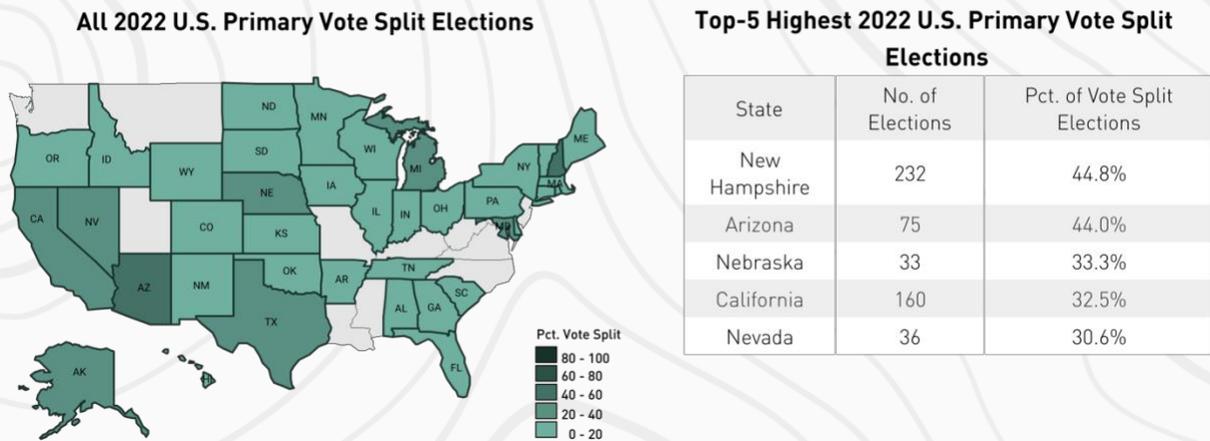
Vote splitting significantly distorts electoral outcomes and can disregard the majority's will, as winning candidates often secure far less than a majority of votes. The 2022 American elections highlighted

numerous instances of vote splitting across various levels of government. When reviewing all 5,662 national primary elections, including state legislative, statewide office, and congressional races, approximately 11.9% involved multiple candidates where the winner did not receive a majority vote. This means about one in ten national elections was a vote split scenario.

As illustrated in the map in **Figure 5**, primaries impacted by vote splitting are not confined to specific geographical areas; they are prevalent in Democratic, Republican, and Swing-vote states alike. States with multi-member districts that use choose-one voting, like Maryland and New Hampshire, experienced vote splitting. For instance, candidates in the New Hampshire State House advanced to the general election with as little as 8.8% of the primary vote because voters are selecting multiple candidates to fill district seats. Even in California, a top-two open primary state, there is a notable incidence of vote split elections. Many other states, particularly in the Midwest, also demonstrate occurrences of vote splitting, indicating that this phenomenon is widespread across the country.

However, as the table in **Figure 5** shows, some states saw a comparative elevation in vote splitting during the 2022 cycle. Out of all states with the three types of elections, New Hampshire emerges as the state with the highest incidence of vote split elections, with 44.8% of its elections experiencing vote splits. Arizona follows closely with 44.0% of its elections resulting in vote splits. Nebraska, California, and Nevada also exhibit significant instances of vote splitting, with percentages ranging from 30.6% to 33.3%. The following subsections break down the prevalence of vote split elections across congressional, statewide, and state legislative primaries.

Figure 5. % of Vote Split Elections in All 2022 Primaries (U.S. Congress, Statewide, State Leg.).



Note: Both the map and the table only include states that had all three types of elections during the 2022 cycle. Data source: The Vote Split Elections Project (2022).

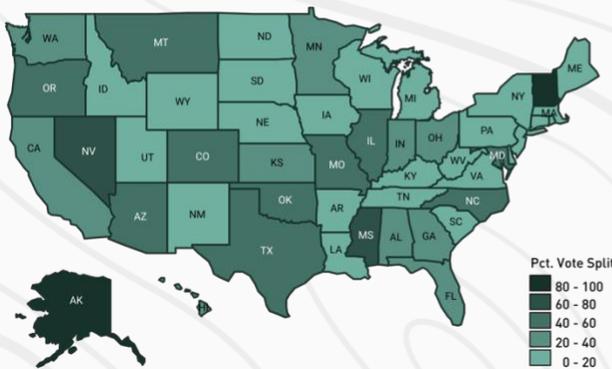
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CONGRESSIONAL PRIMARIES

In the realm of congressional primary elections, vote splitting has significantly distorted electoral outcomes. In the 2022 election cycle, out of 468 congressional primary elections, 28.4% were identified as vote split scenarios, where the winning candidate did not receive a majority of the vote. This means about three in ten congressional elections was a vote split scenario. As shown in **Figure 6**, Congressional primaries are not confined to specific geographical areas; they are prevalent in across every state in the country—with New Hampshire emerging as one of the states with the highest incidence of vote splitting at 100%.

Figure 6. % of Vote Split Elections in 2022 U.S. Congressional Primary Races.

All 2022 U.S. Congressional Primary Vote Split Elections



Top-5 Highest 2022 U.S. Congressional Primary Vote Split Elections

State	No. of Elections	Pct. of Vote Split Elections
New Hampshire	3	100.0%
Alaska	2	100.0%
Vermont	2	100.0%
Mississippi	4	75.0%
Nevada	5	60.0%

Data source: The Vote Split Elections Project (2022).

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The 2022 Republican U.S. Senate primary for New Hampshire was followed closely by political pundits and the media. Don Bolduc, a retired Brigadier General known for his support of Trump-like election conspiracy theories, won with only 36.9% of the vote in a field of 11 candidates.⁵ He narrowly defeated Chuck Morse, the then-New Hampshire Senate President, who garnered 35.7% of the vote and subsequently conceded to Bolduc.⁶ Although he lost at the general election, this primary race stands as an example of how vote split elections are not out of reach within the Senate. Alaska and Vermont also

5 New Hampshire Secretary of State. 2022. "State Primary - U.S. Senate Republican Results."

6 Ray, Siladitya. 2022. "Chuck Morse Concedes to Right-Wing Candidate Bolduc in Closely Fought Republican Senate Primary in New Hampshire." Forbes, September 14, 2022.

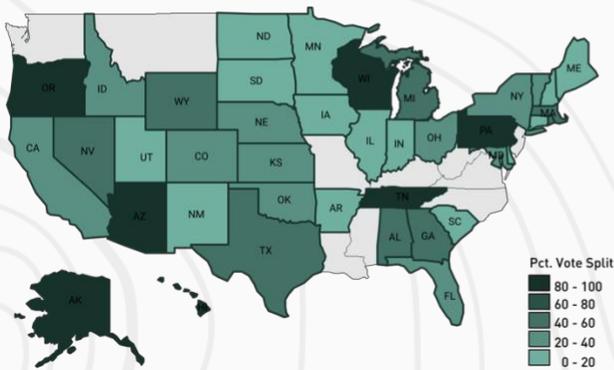
reported 100% incidence rates in their congressional primaries, while Mississippi and Nevada followed with 75% and 60%, respectively.

STATEWIDE PRIMARIES

Like with congressional primary elections, vote splitting has also significantly impacted statewide electoral outcomes. In the 2022 election cycle, out of 190 statewide primary elections, 30% were identified as vote split scenarios, where the winning candidate did not receive a majority of the vote. This means that, like with congressional primaries, three out of ten statewide elections had vote splitting. As both the percentage of vote split heat map and table in **Figure 7** denote, while statewide vote split primary elections are found across the country, there is a higher concentration of statewide races that experienced them in contrast to congressional races. Alaska emerging as a notable example, with 100% of its statewide primary elections experiencing vote splitting.

Figure 7. % of Vote Split Elections in 2022 Statewide Primary Races.

All 2022 U.S. Statewide Primary Vote Split Elections



Top-5 Highest 2022 U.S. Statewide Primary Vote Split Elections

State	No. of Elections	Pct. of Vote Split Elections
Alaska	1	100.0%
Hawaii	1	100.0%
Oregon	2	100.0%
Pennsylvania	2	100.0%
Tennessee	1	100.0%

Note: Both the map and the table only include states that had statewide primary elections during the 2022 cycle. Data source: The Vote Split Elections Project (2022).

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In the 2022 top-four primary for Governor of Alaska, incumbent Republican Governor Mike Dunleavy won with only 40.4% of the vote in a field of ten candidates. His closest competitors, Democrat Les Gara and Independent Bill Walker, garnered 23.1% and 22.8% of the vote, respectively, with the remaining votes split among other candidates. Dunleavy, known for his conservative policies and emphasis on resource

development, managed to secure his position despite the divided electorate.⁷ Les Gara, a former state representative, campaigned on progressive issues including education and social services, reflecting a stark contrast to Dunleavy's platform. Unlike with the Senate race example, Mike Dunleavy went on and won the general election for Governor, showing how a nonminority winners can end up representing a constituency that did not vote for them. Hawaii, Oregon, Pennsylvania, and Tennessee also reported 100% incidence rates in their statewide primaries.

STATE LEGISLATIVE PRIMARIES

As evident by the heat map in **Figure 8**, state legislative primary elections also experienced vote splitting during the 2022 elections cycle. In this election, out of 5,968 state legislative primary elections, 9.4% were identified as vote split scenarios, where the winning candidate did not receive a majority of the vote. This means that about one out of eleven state legislative elections experience a vote split outcome. Like with congressional primaries, New Hampshire stood out with 44.3% of its state legislative primary elections experiencing vote splitting [see: **Figure 8**].

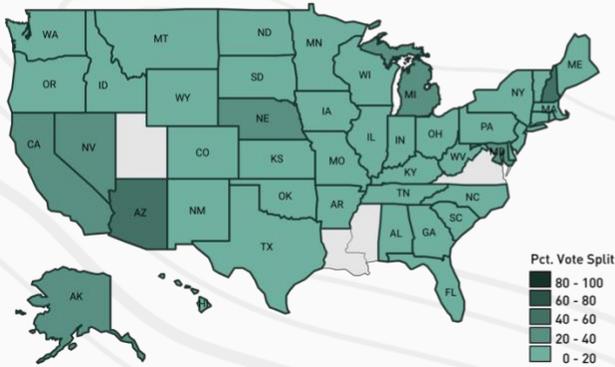
New Hampshire employs a multi-member district system for electing members to its House of Representatives. In this system, multiple representatives are elected from the same district, unlike single-member districts where only one representative is chosen per district. Voters in New Hampshire can vote for as many candidates as there are seats available in their district, and the candidates with the highest number of votes win the seats, even if they do not secure a majority of the total votes cast.⁸ This system often leads to crowded fields with many candidates competing for the available seats, significantly increasing the likelihood of vote splitting. Consequently, votes are frequently divided among many candidates, and the winners are those with the highest relative number of votes, rather than a clear majority.

⁷ [1] Alaska Public Media. 2022. "Early Results Show Dunleavy Leading in Alaska Governor's Race." November 9, 2022; [2] Ballotpedia. 2022. "Alaska Gubernatorial and Lieutenant Gubernatorial Election, 2022."

⁸ Ballotpedia. 2022. "New Hampshire House of Representatives."

Figure 8. % of Vote Split Elections in 2022 State Legislative Primary Races.

All 2022 U.S. State Legislative Primary Vote Split Elections



Top-5 Highest 2022 U.S. State Legislative Primary Vote Split Elections

State	No. of Elections	Pct. of Vote Split Elections
New Hampshire	228	44.3%
Arizona	60	40.0%
Nebraska	24	37.5%
California	100	35.0%
Maryland	188	25.5%

Note: Both the map and the table only include states that had state legislative primary elections during the 2022 cycle. Data source: The Vote Split Elections Project (2022).

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For instance, in New Hampshire’s Rockingham County (District 13) 2022 Republican primary, all top-10 winning candidates secured their primary victories with just 5.9% to 8.8% of the total votes due to a crowded field of 16 candidates—implying that multi-member district systems such as New Hampshire’s is a key contributor to the prevalence of vote splitting. Arizona, Nebraska, California, and Maryland also reported high incidence rates of vote splitting in their state legislative primaries, with percentages of 40.0%, 37.5%, 35.0%, and 25.5%, respectively.

THE VOTE SPLIT ELECTIONS PROJECT

To better understand how vote splitting impacts our electoral process, the CES research team led the collection and development of a novel, comprehensive dataset capturing vote splitting across all primary elections that took place during the 2022 election cycle. This project—**The Vote Split Elections Project**—encompasses elections at three separate levels of office: state legislative, state executive, and congressional contests across the country; totaling 6,626 primary election outcomes.⁹

⁹ As the primary source for the data collection of this project, we relied on reported election outcomes data publicly available on each observed state’s respective secretary of state website.

METHODOLOGY

Out of the total election outcomes we collected, we recorded and analyzed 1,221 individual primary races. These included 563 races at the state legislative level, 190 races at the statewide level, and 468 races at the congressional level.

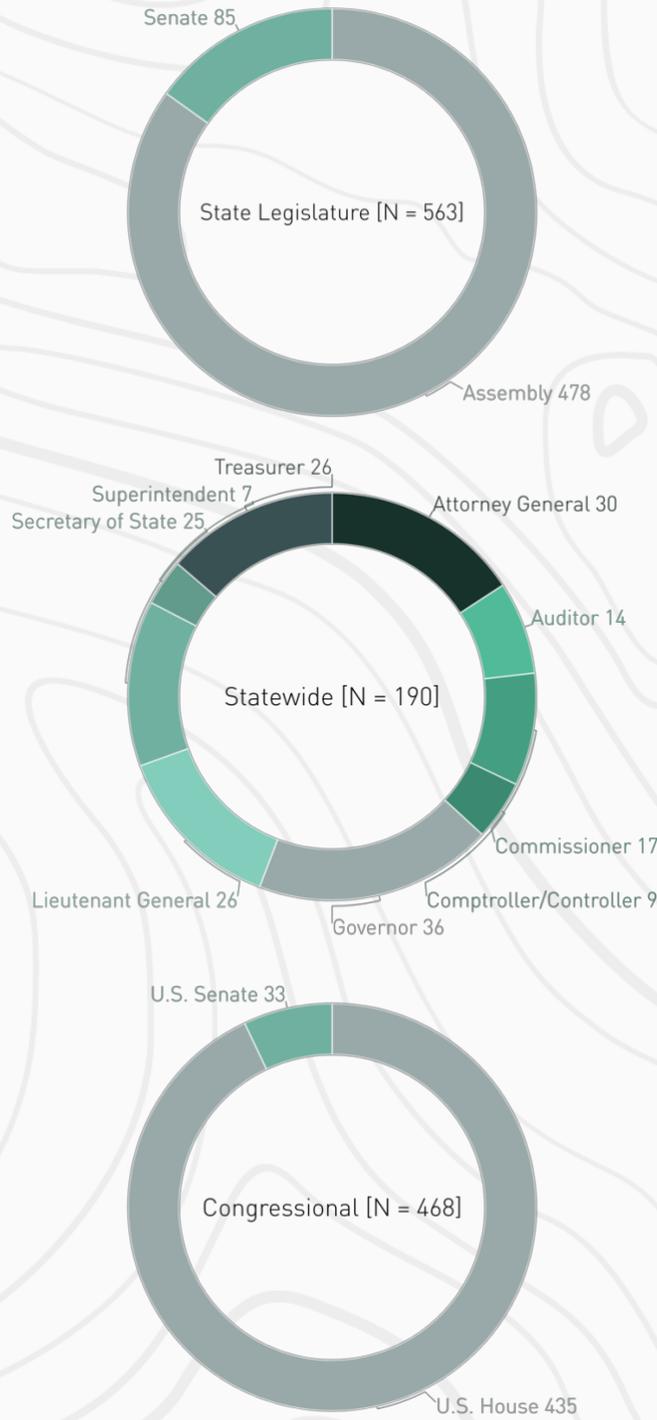
As depicted in **Figure 9**, for the 563 state legislative races, 478 were from state assemblies and 85 from state senates. The 190 statewide office races were broken down into various positions: 30 state attorney general races, 14 state auditor races, 17 state commissioner races, 9 state comptroller or controller races, 36 state governor races, 26 state lieutenant governor races, 25 state secretary of state races, 7 state superintendent of public instruction races, and 26 state treasurer races. Lastly, the 468 congressional races comprised 435 from the U.S. House and 33 from the U.S. Senate.

BEHIND THE NUMBERS

To conduct our analysis, we collected data for a robust set of indicators relevant to each primary race examined. For **state legislative** contests, we gathered data for the following variables: [1] jurisdictional context (state); [2] electoral details (chamber and district identifier); [3] partisan status (partisan or nonpartisan primary); [4] candidate pool size (number of candidates); and [5] outcome metrics (percentage votes for the top four finishers).

For **statewide office** and **U.S. congressional** primary elections, we collected data on: [1] jurisdictional context (state); [2] electoral details (chamber and district identifier); [3] date of primary; [4] incumbent party affiliation; [5] winning candidate's party in the general election; [6] general election competitiveness; [7] open seat status; [8] vote split occurrence (i.e. whether the primary resulted in a vote split); [9] number of candidates; and [10] the percentage votes for the top four finishers.

Figure 9. Data Overview of 2022 Vote Split Elections Project.



Note: N is the total number of elections collected and analyzed for every level of government.

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In addition to analyzing our main variables of interest—i.e. open seat status, general election competitiveness, and vote split occurrence—we also examine the relationship between primary winner party affiliation and subsequent general election outcomes. We determined specific criteria to operationalize these key concepts (i.e. open seat status, general election competitiveness, and vote split occurrence), developing the variables and coded values used in our analysis. Open seat status was defined as the absence of an incumbent candidate running for re-election. General election competitiveness was assessed by examining winning percentage margins; contests with less than a 10% difference between winners and losers were considered competitive. Lastly, vote split occurrence was determined through the analysis of primary vote shares, with races in which the winning candidate secured less than 50% of the total votes cast being coded as vote split elections.

To further investigate the dynamic range and influence of variables that are most correlated with vote splitting in elections, we conducted logistic regression models to statistically infer the relationship between multiple independent variables and the likelihood of a vote split occurring. This allows us to identify significant predictors and empirically evaluate their effects relative to one another.

MAIN FINDINGS

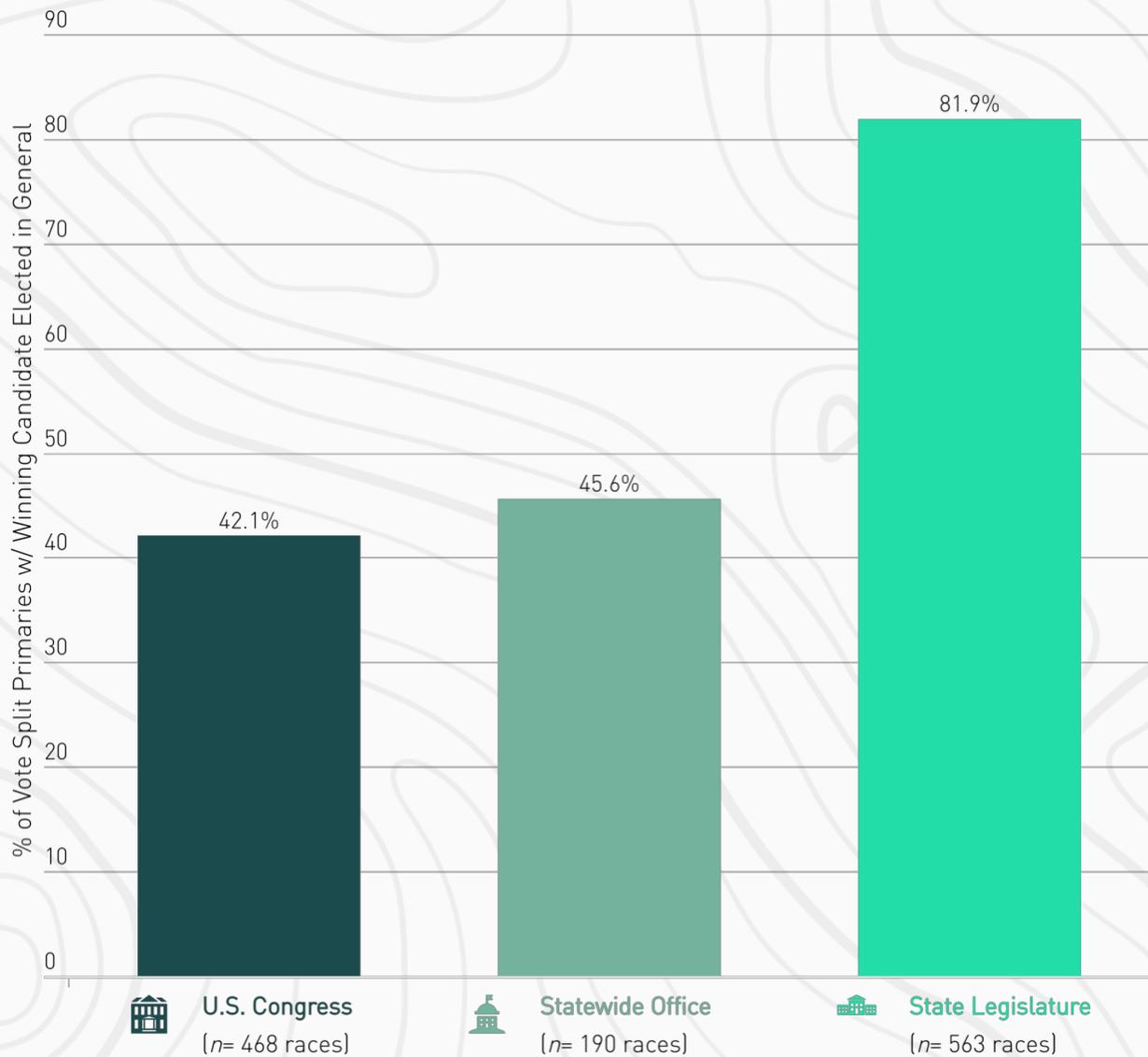
Vote split elections in primaries can impact the representativeness of general elections. In analyzing the 2022 primary elections, a notable trend emerged regarding the success of candidates in vote split races and their subsequent performance in the general elections.

MANY VOTERS ARE MISREPRESENTED: NON-MAJORITY WINNERS WIN ELECTIONS ALL THE TIME

Figure 10 illustrates the percentage of vote split primaries where the winning candidate later succeeded in the general election. As the plot shows, 42.1% of U.S. Congress races, 45.6% of statewide office races, and a notably higher 81.9% of state legislature races resulted in the primary winner securing victory in the general election.

At the state legislative level, we observed that 9.4% of the 563 analyzed races were vote split elections. Among these vote split races, approximately 8 out of 10 winners (81.9%) went on to secure victory in the general election. This high success rate indicates that, despite the fragmented primary vote, candidates who emerge victorious in such scenarios can still maintain strong competitiveness in the general elections. In addition, vote splitting allowed candidates to secure their general election prospects without needing majority support entirely.

Figure 10. % of Vote Split Primaries with the Winning Candidate Later Winning in General Election.



Data source: The Vote Split Elections Project (2022).

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For statewide office races, 30% of the 190 analyzed primaries were identified as vote split elections. Of these, nearly 1 out of every 2 winners (45.6%) succeeded in the general election. This lower success rate compared to state legislative races suggests that while vote split winners have a reasonable chance of prevailing in the general election, they face more substantial challenges in larger, more diverse electorates.

In congressional races, 28.4% of the 468 primaries involved vote splitting. Among these, roughly 4 out of 10 winners (42.1%) went on to win the general election. This success rate underscores the competitive nature of congressional races and highlights the resilience of vote split winners in maintaining their appeal to a broader electorate.

Overall, the data reveals that a considerable proportion of candidates who win vote split primaries can translate their fragmented primary support into general election victories. This phenomenon underscores the importance of understanding vote splitting's impact on electoral dynamics and the strategies candidates must employ to succeed in both primary and general election contexts. These findings highlight how factors such as gerrymandering and incumbency can exacerbate the phenomenon, as most congressional and legislative districts are drawn to maximize partisan advantage. In many districts, the primaries are the only contest that truly matters. As shown in a previous report on crowded U.S. House primaries, most Americans live in partisan-dominated districts where vote splitting often rewards the most partisan candidate. Due to the high reelection rate for incumbents, once a candidate is elected, they rarely lose their seat in a safe district. Unfortunately, the reality of gerrymandering necessitates divisive partisan politics that many Americans find deplorable.

DETERMINANTS OF VOTE SPLIT ELECTIONS

So far, our analysis of real electoral cases has uncovered the possibility that vote split elections are driven by election competitiveness and the presence of incumbents. To test these claims, we take our collected dataset of 1,221 individual primary race outcomes and perform maximum likelihood estimates of classification. Multivariate logistic regression models can be used to understand the relationship between vote split elections—which are coded as binary outcomes in our dataset—and one or many predictor variables—in this case, binary indicators of election competitiveness and incumbent presence found in our dataset. They can estimate the probability of our outcome occurring based on variables and can interpret the direction as well as strength of these relationships.¹⁰ The next two subsections describe the results of our logistic regressions and the impact that the presence of incumbents and electoral competition can have on vote split propensity.

OPEN SEATS

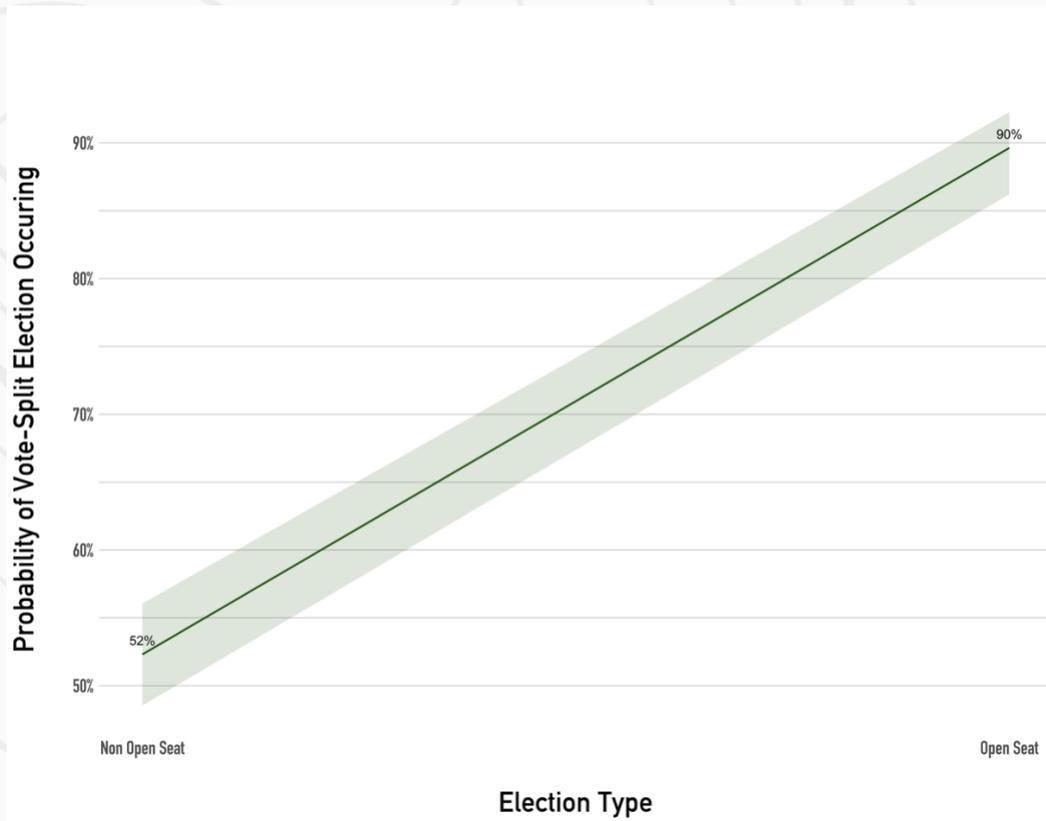
¹⁰ Hosmer, David W., Stanley Lemeshow, and Rodney X. Sturdivant. *Applied Logistic Regression*. 3rd ed. Hoboken, NJ: Wiley, 2013.

An incumbent candidate, or lack thereof, can influence the size of the candidate field on all sides. Incumbents are rarely challenged by more than one candidate from within their party, and the opposition party attracts multiple candidates less frequently when an incumbent is present. When it's an "open seat," meaning that no incumbent is running, or it's a new district, more candidates enter the fray on all sides. The greater the number of candidates, the more likely vote splitting can defy consensus. To test this expectation, we used a multivariate logistic regression across all election categories (i.e., state legislative, statewide office, and congressional elections) to determine the likelihood that an open primary election leads to a vote split.

Our analysis showed a significant increase in the probability of vote splitting in open-seat elections. Specifically, **Figure 11** demonstrates that the probability of a vote split election increases from an estimated 52% when an incumbent is running to 90% when there is no incumbent. This result indicates that open-seat elections are approximately 7.8 times more likely to experience vote splitting compared to elections with incumbents running.¹¹

¹¹ The logistic regression analysis revealed a statistically significant result, with a p-value of less than 0.01, indicating a strong association between having an open seat and having a vote split election. For more details, refer to the Methodology Note.

Figure 11. How Open Seats Increase the Likelihood of Vote Splitting



Note: Plot presented marginal effects in a probability scale to make interpretation less difficult. See the Methodological Note for results in log-odds scale along with its conventional indicators, such as standard errors and p-values. Data source: The Vote Split Elections Project (2022).

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Historically, incumbents rarely lose when they run for reelection. Data on U.S. House of Representatives reelection rates suggest that incumbents running for reelection are almost certain to win, with 94.5% of U.S. House incumbents and 100% of U.S. Senate incumbents winning their 2022 reelection bids. Open seats, on the other hand, change hands between the parties at more than double the rate, attracting a larger field of candidates.

COMPETITIVE ELECTIONS

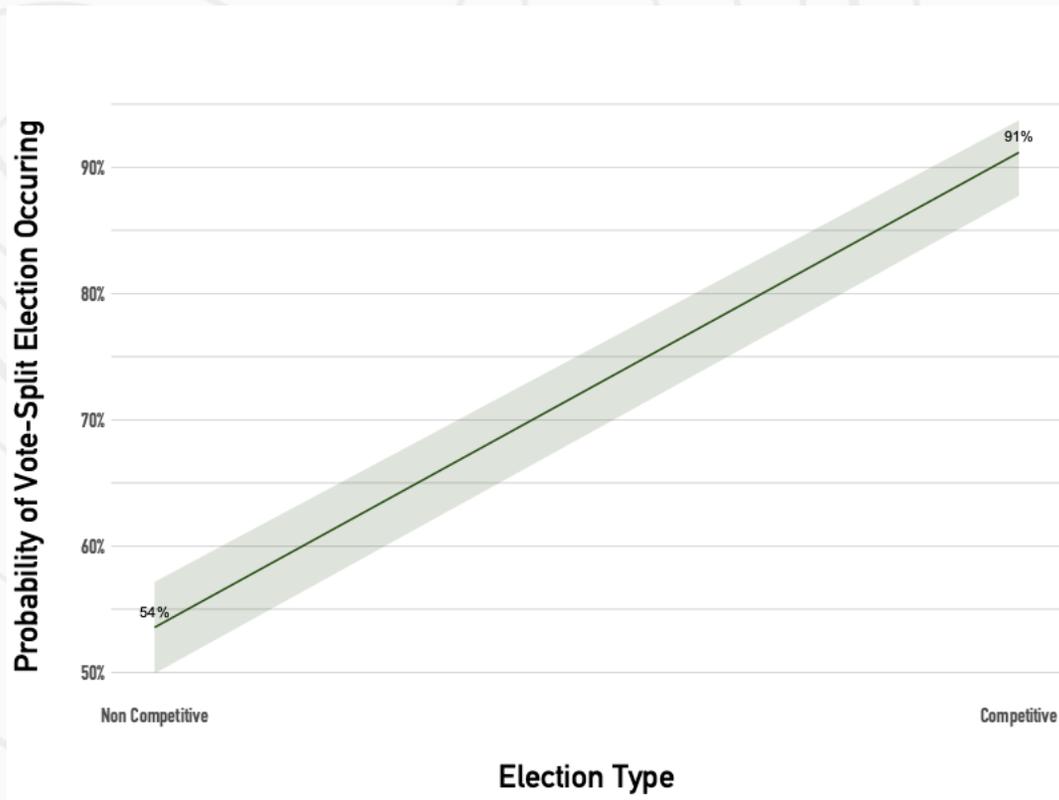
America’s main political parties have spent decades Gerrymandering districts at the congressional and legislative levels, leaving only a select number of competitive districts. The remaining competitive districts determine which party controls Congress and the various legislative chambers. With this report, we show that vote splitting often leaves voters in these few competitive districts to choose between candidates that few people like.

Like with open-seat elections, competitive district elections have higher turnover rates compared to safe districts, which are dominated by a particular partisan candidate. These competitive districts attract more candidates into the contest. Therefore, the combination of crowded and competitive primaries with a plurality voting system increases the frequency of vote split elections. To test this expectation, we used a multivariate logistic regression across all election categories (i.e., state legislative, statewide office, and congressional elections) to determine the likelihood that a competitive primary election leads to a vote split.¹²

Our analysis showed that competitive districts have a significantly higher probability of experiencing vote splitting. **Figure 12** illustrates that competitive districts are estimated to have around a 40% higher probability of a vote split election occurring, with the probability increasing from 54% in non-competitive districts to 91% in competitive ones. When considering the odds ratio, competitive district elections are approximately 8.9 times more likely to experience vote splitting compared to non-competitive districts. While not universal, non-majority winners often amplify extreme political positions that do not reflect the wishes of most voters.

¹² As mentioned in the methodology section, we operationalize a competitive primary in our dataset as a binary indicator of whether the general election for a given primary race has a less than 10% gap in percentage votes between the winner and second-place candidate.

Figure 12. How Competitive Elections Increase the Likelihood of Vote Splitting.



Note: Plot presented marginal effects in a probability scale to make interpretation less difficult. See the Methodology Note for results in log-odds scale along with its conventional indicators, such as standard errors and p-values. Data source: The Vote Split Elections Project (2022).

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The political consequences of these disrupted 2022 primaries were significant, especially for Republicans. Candidates who advanced to the general election ballot via a vote split in the primary performed poorly against their Democratic opponents. Specifically, 90% of Republican candidates who won a primary in a toss-up district via a vote split lost in the general election, as did 80% of Republican U.S. Senate candidates who won their primaries through a vote split. This evidence strongly suggests that vote splitting contributed to the underwhelming performance of Republicans, often referred to as the "fizzled red wave."

A PATH FORWARD: RECOMMENDATIONS FOR REFORM

Our findings highlight the urgent need to address the prevalence of vote splitting in our current elections. By implementing alternative voting methods that mitigate vote splitting, we can ensure that electoral outcomes more accurately reflect the will of the voters. Moreover, reforming our electoral process can

enhance the overall legitimacy of election results, ultimately leading to a more democratic and responsive political system. While many roadmaps exist to this outcome, CES stands behind the belief that data-driven research is essential to identifying the most effective and efficient alternative for voting reform.

Some alternative voting methods, such as ranked-choice voting (RCV), have gained popularity and adoption due to their potential to reduce vote splitting. However, the same increase in popularity has led to a rise in academic research—particularly in the last decade—that has tested its effectiveness as an alternative voting method. While RCV have been found to bring forth benefits that can alleviate several causes of broken elections—such as incentivizing more civil campaigns or increasing voter mobilization efforts¹³—they have also introduced higher costs, such as increasing the cognitive and time efforts of voters to the point of voter confusion or voters incorrectly filling out their ballots.¹⁴ Moreover, recent research has uncovered demographic disparities when using RCV,¹⁵ encapsulating the limitations of this method when it comes to mitigating vote splitting along with other phenomena, such as partisan polarization or spoiler effects.¹⁶

AN ELECTION REFORM THAT WORKS

¹³ See: [1] Bowler, Shaun, Todd Donovan, and David Brockington. *Electoral Reform and Minority Representation: Local Experiments with Alternative Elections*. Columbus, OH: Ohio State University Press, 2003; [2] Donovan, Todd, Caroline Tolbert, and Kellen Gracey. "Self-Reported Understanding of Ranked-Choice Voting." *Social Science Quarterly* 100, no. 5 (2019): 1768–1776; [3] Grofman, Bernard, and Scott L. Feld. "If You Like the Alternative Vote (aka the Instant Runoff), Then You Ought to Know About the Coombs Rule." *Electoral Studies* 23, no. 4 (2004): 641–659; [4] Horowitz, Donald L. *Ethnic Groups in Conflict*. Berkeley, CA: University of California Press, 2000.

¹⁴ See: [1] Atkeson, Lonna Rae, Emily McKown-Dawson, Jason Santucci, and Kimberly L. Saunders. "The Impact of Voter Confusion in Ranked Choice Voting." *Social Science Quarterly* 1, no. 1 (2024): 1–13; [2] Burnett, Craig M., and Vladimir Kogan. "Ballot (and Voter) 'Exhaustion' Under Instant Runoff Voting: An Examination of Four Ranked-Choice Elections." *Electoral Studies* 37 (2014): 41–49; [3] Cormack, Lindsey. "More Choices, More Problems? Ranked Choice Voting Errors in New York City." *American Politics Research* 52, no. 3 (2024): 306–319; [4] Neely, Francis, and Corey Cook. "Whose Votes Count? Undervotes, Overvotes, and Ranking in San Francisco's Instant-Runoff Elections." *American Politics Research* 36, no. 4 (2008): 530–554; [5] Pettigrew, Stephen, and David Radley. "Ballot Marking Errors in Ranked-Choice Voting." SSRN, 2023; [6] Sinclair, Darren, and R. Michael Alvarez. "Who Overvotes, Who Undervotes, Using Punchcards? Evidence from Los Angeles County." *Political Research Quarterly* 57, no. 1 (2004): 15–25.

¹⁵ E.g. [1] Coll, Joshua. "Demographic Disparities Using Ranked-Choice Voting? Ranking Difficulty, Under-Voting, and the 2020 Democratic Primary." *Politics and Governance* 9, no. 2 (2021): 293–305; [2] Donovan, Todd, Caroline Tolbert, and Kellen Gracey. "Self-reported understanding of ranked-choice voting." *Social Science Quarterly* 100, no. 5 (2019): 1768–1776.

¹⁶ See: [1] Atkinson, Nathan, Edward B. Foley, and Scott Ganz. "Beyond the Spoiler Effect: Can Ranked Choice Voting Solve the Problem of Political Polarization?" *University of Illinois Law Review*, forthcoming. Georgetown McDonough School of Business Research Paper No. 4411173, 2023; Taylor, Justin B., Karl Swint, and Samuel Reilly. "The Costs of Democracy: Election Administration Spending on Runoff Elections." APSA Preprints, 2023.

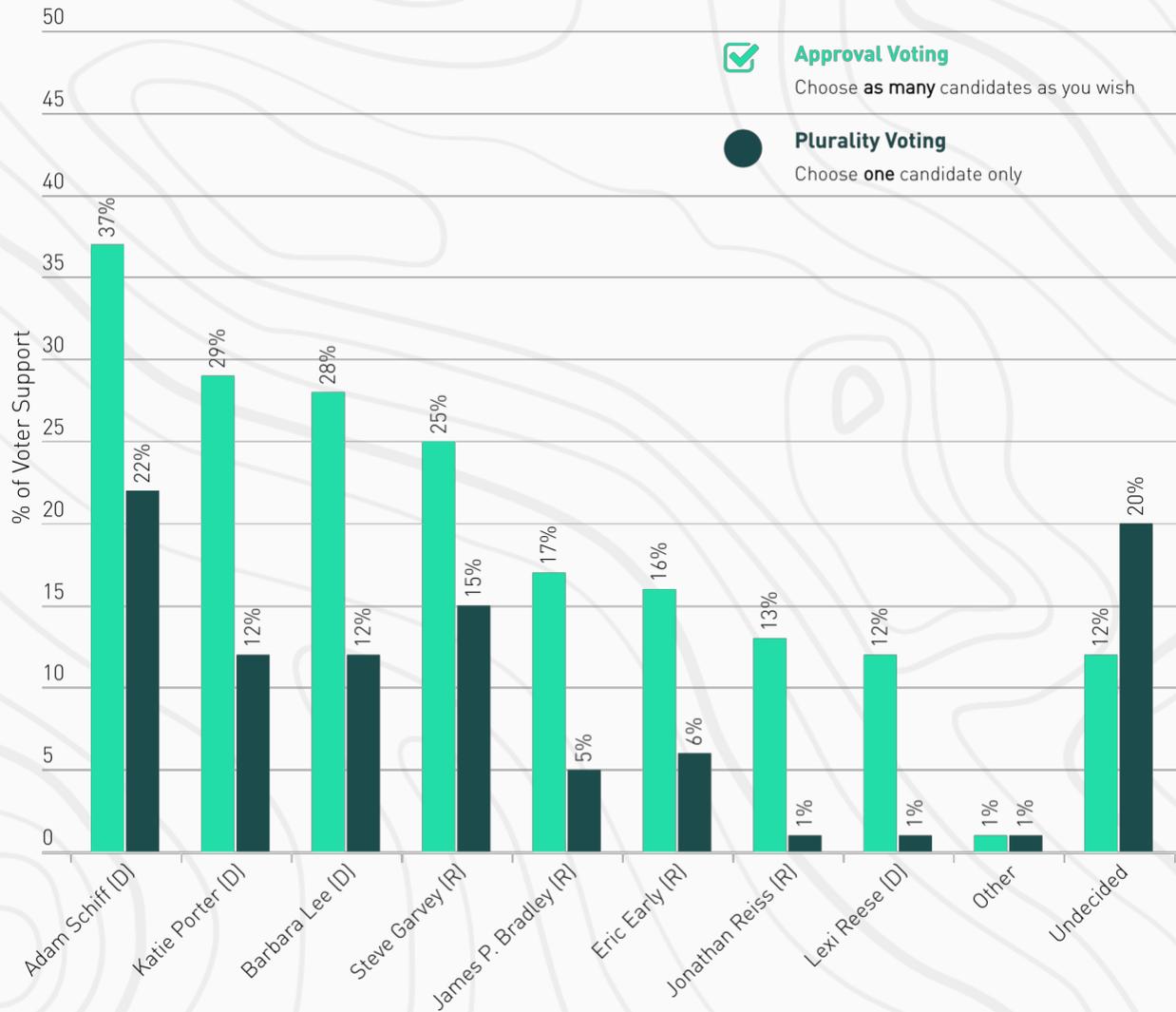
Surrounded by RCV and other alternative voting methods lies a particularly viable solution to the highlighted problems—that being approval voting. Approval voting is a single-winner election method that lets individuals select all candidates they approve of, rather than choosing just one. The candidate with the most votes wins. This method offers a more robust electoral system that addresses issues like the necessity of 'voting for the lesser of two evils.' By allowing voters to select all candidates they approve of, approval voting mitigates the problem of vote splitting, ensuring that the most broadly supported candidates are elected.

In a study conducted with SurveyUSA prior to California's 2024 U.S. Senate primary race (held March 5, 2024), The Center for Election Science surveyed a sample of registered voters in the state of California to assess voters' approval of each candidate running in California's high-profile 2024 U.S. Senate top-two, open seat primary election¹⁷. The results illustrated in the grouped bar chart (see: **Figure 13**) clearly underscore the limitations of plurality voting in accurately and fairly representing who California voters like and approve of most.

Figure 13 plots the weighted responses amongst a sample of Californian voters when asked to select who they would vote for if the primary election for California's U.S. Senate seat were today. Respondents were asked (in randomly assigned order) to 'vote' using both plurality (choose **one** candidate only) and approval (choose **as many** candidates as you wish) voting methods.

¹⁷ The study was conducted by SurveyUSA from 12/07/2023 to 12/10/2023 among a sample of 800 adults from the state of California. Sample is weighted to US Census-derived targets for gender, age, race, education, and home ownership. The full report and statement of methodology is publicly accessible [online here](#).

Figure 13. Grouped Bar Plot of % Candidate Support with Approval and Plurality Voting in CA 2024 U.S. Senate Primary Race.



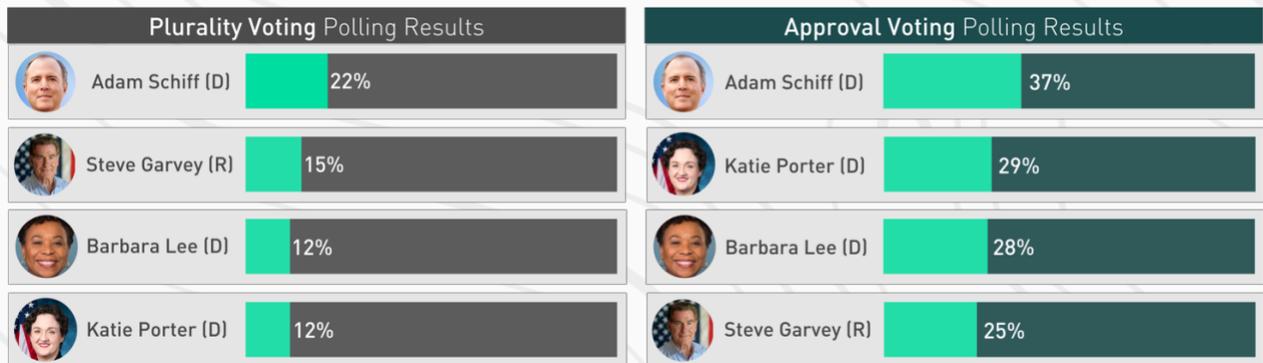
Data source: Study was conducted with SurveyUSA from 12/07/23 – 02/10/23.

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When respondents were permitted to choose all the candidates they approved of, the amount of support for each candidate is more clearly reflected in the results of using the approval voting method (**Figure 13**). In addition to providing a clearer picture of who Californian voters want to represent them, **Figure 13** also reveals how allowing voters to choose and support more than one candidate can generate a much more competitive race without the harmful impact that vote splitting has in the plurality system.

When comparing the percentage of voter support received for each candidate using plurality voting and approval voting, another significant distinction between the two methods emerges—that is, under California’s top-two primary system, the top two candidates advancing to the general election would not be the same. **Figure 14** more clearly highlights the differing electoral outcomes between the two methods, where plurality voting resulted in Democratic candidate Adam Schiff and Republican candidate Steve Garvey moving forward to the general election, while approval voting would result in Democratic candidate Katie Porter coming in second place.

Figure 14. Polling Outcomes of CA 2024 U.S. Senate Primary Plurality vs. Approval Voting.



Data source: Study was conducted with SurveyUSA from 12/07/23 – 02/10/23.

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The polling results shown in **Figure 14** convincingly demonstrate the shortcomings of plurality voting in failing to select winners that voters like and approve of most. The results also demonstrate the potential of approval voting as a viable and actionable solution to the harmful effects of vote splitting. With a better system of voting that not only allows voters to fully express their preferences but is also transparent and fair in accurately capturing voters’ preferences in the final vote tally, the electoral process can become more representative of the people our democracy is intended to serve.

The push for electoral reform has had a long history with plenty of proposed solutions examined in prior research. While relatively less attention has been allocated to voting method reform research, and even lesser so to approval voting systems, prior growing breadth of research has shown that candidates who win under approval voting systems tend to have wider voter support, accurately capturing the preferences of the electorate and maximizing vote satisfaction.¹⁸ Capable of successfully electing the Condorcet winner of an election, approval voting has also been shown to perform better than plurality voting and

¹⁸ Brams, Steven J., and Peter C. Fishburn. 2007. *Approval Voting*. 2nd ed. New York: Springer; Quinn, Kevin M. 2021. "The Impact of Electoral Systems on Political Polarization." *Journal of Political Science*, 45 (2): 123-145.

instant runoff voting systems.¹⁹ In other words, approval voting is shown to facilitate more competitive elections given its ability to accurately reflect and document voters' full support for all candidates in the final reported vote tally—not just the plurality winner.

This suggests that an approval voting method provides an electoral process that better aligns with voters' true preferences, eliminating the strategic necessity to vote for a less-preferred candidate to prevent an undesirable outcome. By taking action to change the way we vote, we can enhance the representativeness of our electoral outcomes, ensuring that elected officials genuinely reflect the will of the people.

CONCLUSION

KEY TAKEAWAYS

The core takeaway from our analysis is straightforward: As long as our elections continue to rely on plurality voting, candidates will continue to secure nominations without broad support, exacerbating our partisan-dominated politics and decreasing overall election representativeness. As our data has shown, there were plenty of instances where candidates won primaries with small shares of the vote across the country at every level. These electoral outcomes can distort voter intent and leave voters to choose between candidates that lack broad appeal in the general election. Moreover, this reality contributes to voters feeling unheard and powerless. Vote splitting defies consensus, dividing like-minded voters along artificial political lines and rewarding partisanship. Ultimately, it contributes to broader dissatisfaction with our politics.

Beyond the individual voter, vote splitting plays a significant role in determining the electoral outcome of the general election and shaping the prevailing political narrative in its aftermath. In 2022, vote splitting occurred disproportionately within the small subset of political contests that comprised the limited battleground between the parties. The results of these primaries, which placed unpopular candidates on the general election ballot, were particularly damaging to Republicans and influenced which party controlled legislative chambers and key seats across the country. The anticipated "red wave" failed to meet expectations in part due to vote splitting.

¹⁹ See: [1] Alós-Ferrer, Carlos, and Đura-Georg Granić. "Two Field Experiments on Approval Voting in Germany." *Social Choice and Welfare* 39 (2012): 171–205; [2] Igersheim, Herrade, Frédéric Durand, Alan Hamlin, and Jean-François Laslier. "Comparing Voting Methods: 2016 US Presidential Election." *European Journal of Political Economy*, 2021; [3] Laslier, Jean-François, and Karine Van der Straeten. "An Experiment of Voting by Assent During the French Presidential Election of 2002." *Revue Française de Science Politique* 54, no. 1 (2004): 99–130.

We continue to explore the impact of vote splitting on elections during the 2024 election cycle. Our experiments in California, Maryland, and Ohio have demonstrated that with a more expressive ballot, such as approval voting, election outcomes would be different, strengthening the case for reform.

Overall, we cataloged more than 1,000 elections impacted by vote splitting in the 2022 cycle, not including county and municipal elections where it also occurs frequently. This is a little-known factor with significant consequences on who represents us. CES is committed to conducting data-driven research that is transparent and accurately reflects the summary of our findings.

SIGNIFICANCE OF PROJECT

Political analysts dissect the factors driving electoral results after every election cycle. Primary elections are often seen as an influential factor, sometimes revealing intra-party ideological divides, as evidenced by the Democrats during parts of the 2016 and 2018 cycles, and Republicans in the Trump era.²⁰ Primary election results, particularly when vote splitting occurs, can indicate disharmony within a political party, with implications for general election prospects. By recording instances of vote splitting across multiple levels of government during a national election, our project has provided a granular level of detail.

This report, along with others planned, will continue to unveil the significant implications that vote splitting has on our politics—strengthening the case for election reform. Thanks to this project, we can depict how vote splitting played a significant role in the outcome of the 2022 midterm elections. Our report and accompanying data set allows reformers to highlight specific examples of primary elections that may have failed to capture a representative assessment of the electorate. Beyond anecdotal examples, we provide a comprehensive account to expose the commonality of vote splitting across state legislative, statewide, and congressional levels of office.

In recent years, many political analysts have observed and discussed the impact of vote splitting in electoral outcomes—particularly in crowded candidate fields. A poignant example was the packed 2016 Republican presidential primary, where Donald Trump emerged victorious despite a record number of votes cast for other candidates.²¹ Despite these mentions, few analysts have devoted significant time to examining the factors driving vote splitting. Our report zeroes in on two critical factors—lack of incumbents and electoral competitiveness—providing the most in-depth analysis of this common feature in American primaries.

By focusing on contests impacted by vote splitting, we present a compelling case that it played a key role in the story of the 2022 election. Our analysis offers an additional explanation for the failure of the

²⁰ Thompson, Alex. "Why Can't the DCCC and the Resistance Get Along?" *Politico Magazine*, March 7, 2018.

²¹ Sullivan, Sean. "Donald Trump Got the Most Votes in GOP Primary History. A Historic Number of People Voted Against Him Too." *The Washington Post*, June 8, 2016.

anticipated Republican "red wave," a surprising and influential outcome. We also lay the groundwork for continued study of vote splitting in future election cycles. For example, what actions, if any, did state parties or federal party committees take to mitigate the potential political impact of vote splitting? Were additional measures taken to limit candidate fields in competitive districts, and were these measures successful?

Voters are unhappy with the quality of their candidate choices.²² While vote splitting cannot be attributed as the sole reason for voter dissatisfaction, we can demonstrate that voters are often forced to choose between candidates in the general election who received only a small mandate from primary voters. This lack of mandate is particularly evident when considering the low overall turnout in primary elections and the prevalence of closed primaries.

Would voting method reform or other systemic reforms to primaries increase voter participation or satisfaction with their eventual choices? Our polls suggest the answer is yes, including over 70% of Maryland and Michigan voters who agreed that voters deserve a better way to choose candidates in the primary²³. However, a full assessment of this factor will be addressed in a future study. The America (Mis)Represented report is a groundbreaking endeavor, examining a common yet overlooked factor in our elections, opening new doors for further study, and providing new evidence in support of reform.

²² Pew Research Center. 2024. "More Than 80% of Americans Believe Elected Officials Don't Care What People Like Them Think." April 30, 2024.

²³ The Center for Election Science (2024).

ABOUT CES

Founded in 2011, **THE CENTER FOR ELECTION SCIENCE (CES)** is a national nonpartisan nonprofit focused on election analysis and voting reform advocacy. CES is committed to translating knowledge and research findings into tangible, real-world changes by empowering the public with accurate, accessible data and analysis about voting systems.

CES studies elections, how people vote in them, and the obstacles—new and old, seen and unseen—that make voters feel disconnected from democracy. While the study of voting often gets overly academic or purely political, CES strives to remain firmly grounded in the practical implications of our research.

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METHODOLOGY NOTE

Table 1: Logistic Regression Results

<i>Dependent variable:</i>	
Vote Split	
Competitive	2.193*** (0.198)
Open Seat	2.064*** (0.177)
Constant	-0.461*** (0.080)
Observations	1,221
Log Likelihood	-653.704
Akaike Inf. Crit.	1,313.408

Note: *p<0.1; **p<0.05; ***p<0.01

Table 1 presents the results of our logistic regression model aimed at understanding the factors influencing the propensity of a vote split election occurring. The analysis includes two binary predictor variables—*Competitive* and *Open Seat*—and a binary outcome variable, *Vote Split*. Our competitive variable was coded as 1 if the general election for a given primary race resulted in a less than 10% gap of percentage votes between the winner and second-place candidate or 0 otherwise. For our open seat variable, it was coded as 1 if there was not an incumbent running in a primary election. The results were estimated using the following model:

$$\log \left(\frac{P(\text{Vote Split} = 1)}{1 - P(\text{Vote Split} = 1)} \right) = \beta_0 + \beta_1 \cdot \text{Competitive} + \beta_2 \cdot \text{Open Seat}$$

Overall, our results suggest that when a primary election is competitive, holding all else constant, the log-odds of a vote split occurring increase by 2.193. Similarly, when a primary election has an open seat, holding all else constant, the log-odds of a vote split occurring increase by 2.064. Our coefficient results indicate that both competitive elections and open seats significantly increase the likelihood of a vote split. The high level of statistical significance for both predictors underscore the robustness of these findings.