Partisan Dynamics in Presidential Primaries and Campaign Divisiveness

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Abstract

Observers have noted that the Republican and Democratic primaries differ substantially, with Republicans typically having an easier time selecting their nominee. Previous research has suggested that this may be attributable to Republican Party homogeneity and delegate allocation rules which winnow candidates faster, but there is little empirical evidence on how these factors influence the primary process. Rather than predicting overall vote share or the nominee, I examine the temporal dynamics of each party's primary campaigns. I show that Republican candidates are over-rewarded for winning elections, while Democrats are rewarded for performing well overall. The result is that Republicans are much more likely to exit the campaign later in the process, as compared to Democrats, and there is little evidence that these dynamics have changed over time. I conclude that the Republican Party produces systematically shorter and less divisive primaries as a result of its faster and more efficient winnowing process.

Keywords: Presidential primaries; divisive primaries; delegate allocation rules; 2016 presidential primary election

The modern presidential primary system which emerged in the 1970s is designed to emphasize voter choice rather than the back-room deals and political compromise that were the hallmarks of the convention system (Kellett & Mott., 1977; Shaffer, 1988). Divisions within the Democratic Party and a series of weak nominees in the late 1960s and 1970s encouraged a number of reforms to the process—most of which were proposed by the McGovern-Fraser commission (Polsby, 1983)—that sought to account for the interests of party elites, while also making the process more populist in nature. Ultimately, the reforms were designed to favor candidates more representative of the Democratic Party, and more electable in the general election (Busch, 2008; Epstein, 1986; Price, 1984; Ranney, 1974).[1] The Republican Party followed suit and today most delegates in both parties are awarded on the basis of vote share in primaries and caucuses.

Though the Republican and Democratic parties now both rely largely on voters to choose their nominee, the Democratic primary is generally seen as far more divisive, while Republicans are viewed as coalescing around their candidate much sooner (though 2016 may be an exception) (Berggren, 2007; Mayer, 1996).[2] Yet, despite the perception of a divided Democratic Party and a cohesive Republican party, there is surprisingly little empirical evidence that the temporal dynamics for each party systematically differ. Further, support for the the two explanations generally offered, that Republicans have greater intraparty agreement, and their delegate rules produce a faster "winnowing" process, is surprisingly weak (Steger, Hickman, & Yohn, 2002). Nearly all research on the nomination process has sought to identify each of these effects by looking at early performance in a few states, or by predicting overall vote share or which candidate wins the nomination. These measures of eventual candidate success however, do not explain the level of primary divisiveness, or why some primaries end quickly, while others drag on.

With data on competitive races from 1980 through 2016, I use a variety of empirical models which explicitly account, in different ways, for the temporal processes in both parties to identify how Republican and Democratic races systematically differ. Republican winners consolidate their vote share, increasing it over time, and their campaigns can be identified as random-walks with upward drift. Democratic winners, on the other hand, frequently exhibit no upward drift in their vote share and frequently must suffer through a "grind-it-out" campaign. I also demonstrate that Republicans are over-rewarded for winning a state, while Democrats receive electoral credit for performing well, while winning itself has no independent effect on future primary vote share. Because of these differences, Republican candidates are far more likely

1

to drop out of the race later in the campaign. Democrats, if they can survive the first half of the primary season, are much more likely to remain in the race long-term. These results provide evidence for the claim that the delegate allocation rules and intraparty differences have important effects on the dynamics of the primary. Conversely, there is little evidence that Republicans treat front-runners differently than Democrats by unifying behind them faster, even though the party often has a clear favorite early in the campaign.

This research illuminates many of the questions surrounding the causes of primary divisiveness in presidential elections. Importantly, the level of conflict within a party's primary has been shown to hurt the winning candidate in both presidential contests (Buell, 1986; Kenney & Rice, 1987; Makse & Sokhey, 2010; Piereson & Smith, 1975) and in other contexts (Bernstein, 1977; Jewitt & Treul, 2014). The 2016 Democratic race lasted much longer and became more divisive than many expected given Clinton's clear front-runner status at the start of the campaign. The results here suggest that the Republican system produces a systematically faster process for choosing its nominee, which would seem to reduce divisiveness and give their candidate an advantage in the general election. In an extremely close election like 2016 when even the smallest factors seemed to matter, these differences could prove decisive.

Explaining Candidate Success in Presidential Primaries

The extant literature on presidential primaries largely focuses on the causes of candidate success. These elections differ from most others in the United States in a number of important ways. First, unlike most campaigns, the typical cues voters use to make decisions, party identification and ideology, are relatively unimportant given the shared partisanship and similar beliefs of the candidates (Popkin, 1994).[3] Second, running simultaneously in many states requires both money and assistance from party elites, and as a result, previous research shows a strong relationship between resources and eventual success.

The typical approach is to use pre-campaign measures to predict overall vote share or the winning candidate (Mayer, 1996, 2003; Steger, 2007, 2008). A.T. Hadley (1976) identified the "invisible primary" as the most important stage of the primary game, when candidates seek backing and financial resources from party leaders. There is robust empirical verification of the claim that support from the party establishment predicts overall nomination success (Cohen, Karol, Noel, & Zaller, 2008; Karol, Noel, Zaller, & Cohen, 2003; Steger, 2000). The importance of money and endorsements is increasingly important in an era of primary front-loading,

as the attention received by early states has encouraged other states to move their primaries up (Adkins & Dowdle, 2002; Ridout & Rottinghaus, 2008). Money and endorsements produce electoral success which generates additional media attention, especially early in the campaign season (Bartels, 1988; McGowen & Palazzolo, 2014), as well as more campaign donations (Christenson & Smidt, 2011), begetting additional success. "Winning" the invisible primary allows candidates access to voters, and serves as a signal of general election viability and shared preferences (A. J. Dowdle, Adkins, & Steger, 2009). Despite the predictive power of the invisible primary, under-dog candidates can mount a successful challenge, perhaps especially so in recent years. Clinton clearly won the invisible primary in 2008 and lost the nomination (Cohen et al., 2008), while Trump did not win the invisible primary in 2016, though no other candidate was able to coordinate enough support to be the clear-cut party favorite.[4]

Relatedly, electoral support in early states, especially Iowa and New Hampshire, which have traditionally held the first caucus and primary, is important for candidates' future support (Hull, 2008; Traugott & Wlezien, 2009; Winebrenner, 1998). New Hampshire's role is magnified because it generates significant exposure for candidates due to its proximity to major media markets (Adams, 1987). Adkins and Dowdle (2000, 2001) forecast overall primary share and find New Hampshire success is an important factor, though Iowa success is not, while Norrander (2006) suggests that both Iowa and New Hampshire results influence the decision to leave the race. Obama's 2008 Iowa victory is commonly cited as producing momentum which eventually culminated in his nomination (Tolbert & Squire, 2009).

Party Differences in Candidate Success

Since 1980, many have observed that Republicans typically win their nomination sooner, or are less likely to have drawn-out, divisive primaries. Again, the standard empirical approach is to determine whether party identification mitigates the relationships between invisible primary success or early election success on overall primary vote share or the likelihood of winning the nomination. Steger et. al. (2007) examines overall primary vote share disaggregated by party and finds that only Democratic candidates benefit from previous success, especially in New Hampshire (Steger, Dowdle, & Adkins, 2004). Likewise, Democrats benefit from money on hand while Republicans benefit from pre-election public support (Steger, 2000; Steger et al., 2004; Steger, 2008).

Given broad agreement on the most important factors of primary success, why are there such dramatic differences between Republicans and Democrats in securing the nomination?

The Republican Party has long been seen as having better control over its primary process for two reasons: the party is more ideologically unified and its delegate allocation rules favor winners of state elections (Mayer, 1996, 1997). There is also some evidence that Republican voters have relatively stable preferences prior to the campaign, whereas Democratic voters are more likely to change candidate preference over time (Mayer, 1996; Newport, 1999). As Adkins (2005) note, there is a "tendency of the Republican primary electorate to rally early behind frontrunners..." making Democratic campaigns less predictive and more chaotic. This may produce primaries that are both contested and divisive, defined by Dowdle, Limbocker, Yang, Sebold, & Stewart (2013) as those in which many candidates run, *and* the party has a difficult time coordinating behind a single candidate (as appeared to be the case for Republicans in 2016). Conversely, analysis of donor networks suggest that Democratic elites exhibit greater unity in their donation patterns than Republicans, especially recently (Yang, Limbocker, Dowdle, Stewart, & Sebold, 2015).

As these competing and conflicting claims demonstrate, it is not well understood how partisan differences manifest themselves within the primary campaign and how internal party homogeneity or delegate allocation rules lengthen or shorten the campaigns of winning candidates, though there is some evidence from in-depth case studies of individual races (Berggren, 2007; Norrander, 1993). Taking a different approach, Mayer (1996) infers how different delegate allocation rules would have affected the candidates throughout the campaign. Here, I detail the theoretical mechanisms that result in more divisive Democratic primaries, and demonstrate these mechanisms employing time-series modeling on all competitive elections from 1980-2016 for both parties. This approach differs from previous research in that it examines the dynamics *within* the campaigns rather than seeking to predict who wins or loses, producing needed evidence for claims of the divisive Democratic and unified Republican primaries.

Theoretical Expectations of Party Dynamics in Presidential Primaries

Candidate success in presidential primaries are a function of money, endorsements, policy positions, or any other factor which affects how much electoral support a candidate receives. The repeated nature of the campaign allow voters to update their beliefs about the candidates and their popular support (Abramowitz, 1989; Kellett & Mott., 1977; Knight & Schiff,

2010; Mutz, 1997). As candidate success increases, voter perception of viability changes (Collingwood, Barreto, & Donovan, 2012), which in turn increases campaign donations (Christenson & Smidt, 2011) and produces contagion or band-wagon effects (Bartels, 1988).

Therefore, the basic theoretical claim about candidate support over sequential elections is that a win or strong showing by a candidate on a given election day affects the vote share of the candidate in a subsequent election. This implies an independent effect of candidate performance at time $t-1$ on performance at time t for candidates in both parties. Voters want to choose the candidate that is most viable and able to win the general election, and doing well in one state is a strong indicator that the candidate can do well in future elections. In short, the results of past primaries send cues to those voting in both present and future primaries about the viability of the candidate (Bartels, 1985).

The nature of the relationship between a candidate's future performance and their past performance depends on their party, however. Specifically, greater agreement within the Republican Party and different delegate allocation rules are expected to create differences in how past success determines future success across the parties. If Republican voters are more similar in their policy preferences (Mayer, 1996), then the information value of Republican voters to future voters is much stronger than it is among Democrats. With respect to delegate allocation rules, the translation of votes into delegates occurs through four different systems: proportional representation, winner-take-more, winner-take-all, and loophole, with proportional allocation rules being the system which most clearly reflects a candidate's popularity among the electorate (Geer, 1986).[5] Republican primary campaigns generally use a winner-take-more system, which over-rewards their candidates for winning, while Democrats award delegates almost exactly in proportion to their vote share (David & Ceaser, 1980; Steger et al., 2002).[6] This has the effect of establishing clear Republican winners and increasing the clarity of the signal sent by previous results, while the relative position of Democratic candidates is more ambiguous to future voters. Thus, Democrats are expected to receive electoral rewards for performing well across many states, while Republican candidates will reap disproportionate rewards by voters for winning a state, in addition to seeing their overall support increase. Finally, if the Republican delegate allocation system provides an additional electoral "bump" for Republicans, I expect this effect to be most clear when a Republican candidate wins a winner-take-all state. This hypothesis tests one possible mechanism for the over-rewarding of Republican candidates.

Electoral Success Hypothesis: For candidates of both parties, as electoral performance on

an election day increases, electoral performance on the subsequent election day will increase.

Republican Win-Bonus Hypothesis: For Republicans only, winning a state on an election day will produce an additional electoral bonus on the subsequent election day.

Winner-Take-All Hypothesis: Winning all pledged delegates in a state will produce an additional electoral bonus on the subsequent election day.

The *Electoral Success* hypothesis is consistent with previous work and establishes only a baseline expectation that candidate vote share on a primary election day has an independent and positive effect on future vote share on the subsequent election day. Indeed, this relationship only suggests that candidate support at time *t* is at least partially attributable to candidate success at time t-1. The *Republican Win-Bonus* hypothesis claims that Republicans candidates will receive increased electoral support not just for performing well overall, but also for winning a state(s) because the delegate allocation rules ensure that Republican candidates can be clearly identified as winners and losers to voters in future contests, and because of greater intraparty agreement, winning sends a stronger signal to future voters. The *Winner-Take-All* hypothesis explores one way in which the delegate allocation rules for the Republican party matter; if a Republican candidate wins all state delegates, the signal will be especially clear to future voters. Importantly, the theory predicts that though Democrats receive additional voter support in subsequent elections for receiving higher vote shares, winning an election should produce no additional electoral benefits.

Explaining Candidate Exit

Given the expectation that Republican candidate are disproportionately rewarded for winning a state by voters in subsequent elections, there should be an observable effect on candidate exit from the race. Because of the feedback dynamics produced within a primary campaign, candidates who perform poorly are expected to exit the race sooner, especially if future elections are also perceived to be difficult (Strumpf, 2002). As the literature discussed above notes, poor performances make it more difficult to raise money, result in less media coverage, and decrease perceptions of viability. Just as success begets future success, failure begets failure until a candidate is forced to leave the race.

The theory developed here claims this dynamic will differ across the parties. If Democratic

candidates are rewarded by voters simply for performing well across many states and receiving a proportional share of the available delegates, then Democratic candidates are more likely to continue receiving the resources and support needed to stay in the race. Conversely, because the Republican primary generates clear winners and losers, Republicans are more likely to exit the race due to declining resources and support. The *Republican Exit* hypothesis claims that Republicans will be more likely to exit the race than Democrats, all else equal.

Republican Exit Hypothesis: Republican candidates are more likely to exit the primary race as compared to Democrats.

To summarize, the theory predicts that Republicans receive additional future support for winning a state, while Democrats receive support only for performing well. Because Republican Party rules over-reward candidates who win their races, elite and popular support is able to draw a clearer distinction between successful and non-successful candidates. As a result, Republican candidates should consolidate support and resources more quickly, which in turn produces a quicker exit for competing candidates. Democratic candidates will have a more difficult time consolidating support, allowing challengers to remain in the race.

The Effects of Front-Runner Status by Party

The observable implications drawn from the theory focus on delegate allocation rules resulting in greater Republican support and faster candidate exit. The literature also suggests that Republicans view front-runners differently, and are more likely to coalesce behind them early in the campaign. As noted, Democratic voter preferences may be more variable while an early win by a leading candidate in the Republican Party produces a larger vote bonus. To test such dynamics, I also investigate the effect of front-runner status, as measured by money raised prior to the start of the campaign, on voters support, conditional on party. If front-runner status produces greater electoral support for Republicans, then there should be a stronger relationship between candidate status (i.e., favorite or under-dog) and future success among Republicans as compared to Democrats.

There are claims that the homogeneity of the Republican Party began breaking down at the end of the Bush administration with the rise of the Tea Party and internal divisions between business-oriented elites and lower-income white collar workers that helped elect Donald Trump over the objections of party leaders (Gervais & Morris, 2012; Hood, Kidd, & Morris,

2015; Steger, 2007, 2015). Therefore, I also test whether Republican voters have become less supportive of the front-runner in recent elections, and whether changes in the relationship between party and voter support has changed over time. Effects in either case would indicate whether Republican unity prior to the 2008 campaign was a significant driver of low levels of divisiveness, and whether greater Republican ideological heterogeneity is making its primary increasingly divisive.

Sample Selection and Data Structure

The data are taken from publicly available sources on presidential primary results in *competitive* elections from 1980 through 2016. Non-serious or non-credible candidates, defined as those receiving less than at least 1% of the popular vote on any election day across all states are excluded. Races not deemed competitive all had an incumbent president or vice-president running, with two exceptions. Both the 1980 Carter-Kennedy race and the 1988 campaign between Bush, Dole, Kemp, and Robertson are included as both incumbents faced credible and long-lasting challengers.[7] The analysis is primarily interested in examining how Republican and Democratic races evolve over time, where multiple candidates in each party have a non-trivial chance of winning the election, and significant uncertainty exists as to the winning candidate. Table 1 shows the primary election year, party and candidates included in the dataset.

Table 1 here

The unit of analysis is candidate-election date within each primary-year such that the measure of electoral outcomes is the average vote percentage received by candidate i (or number of states won by a candidate i in some models), on date t, during election year j. The key measure of candidate success is lagged average percent of the popular vote or lagged states won rather than delegates awarded to a candidate. First, these measures are much simpler and more directly capture candidate support than delegate count, which is subject to complicated and differing rules across states, and changes with each election season. In many cases, it is difficult to figure out exactly how many delegates a candidate won (or even how many delegates were at-stake in the state) given the vagaries of rules governing pledged and unpledged delegates and binding and non-binding elections. The theory of over-rewarding Republicans for wins depends on campaign narratives constructed around winners and losers, which are frequently developed from delegate counts, but these track very closely with vote percentages.

Using voting percentages or wins rather than delegate totals is also consistent with previous research (Mayer, 2003; McGowen & Palazzolo, 2014; Steger, 2007, 2008). One variable is included in some models which captures whether a candidate won a winner-take-all (delegates) state in the 2008, 2012, or 2016 campaigns.

The theoretical question examined is whether there is a relationship between past results and current results, and how partisan differences condition that relationship. Thus, the dependent variable is average popular vote share or states won at time t across all state elections held on that date, while the key independent variable is average popular vote share or states won at time $t-1$. Because of the occurrence of multiple state primary elections on the same date, popular vote percentages are averaged across states to capture a candidate's overall election-day support, rather than their performance in a specific state. Candidates can do well in one state but poorly in another on the same day, thus multiple elections on the same day are treated as simultaneously occurring events, with the results averaged together.

Other Factors Affecting Candidate Performance

The empirical models include additional variables intended to capture other possible causal factors. First and most importantly, there is a well documented effect of elite support on candidate success. Here, I use a common measure of elite support, the amount of money raised by the candidate in the invisible primary *prior* to the first primary election, as this is strongly correlated with primary success and perceptions of candidate strength by party elites and donors. This data was gathered through publicly available FEC reports filed by the candidate at the start of the primary season, in January of the election year. To scale money raised by year, I take each candidate's percentage share of money out of all money raised in the party for that year. For example, if Candidate A raised $1 million and all party candidates combined raised $10 million that year, then Candidate A receives a value of 10%.

Iowa and New Hampshire have been shown to have important effects on the dynamics of the race (Adams, 1987; Hull, 2008; Norrander, 2006; Traugott & Wlezien, 2009; Tolbert & Squire, 2009; Winebrenner, 1998). Steger (2013) finds that using data from the Iowa and New Hampshire results can substantially improve forecasting models of ultimate success, suggesting that these states produce outsized benefits to candidates because of their first-in-the-nation role. Included in the models is a dummy variable for primary days with these states, and for the Super Tuesday election date, as that has also traditionally served as a winnowing election. A variable is also included for election type. In recent years, some types of candidates have

performed better in one type of election. Though there is virtually no literature on this question, it seems that more ideologically extreme candidates perform better in caucus states, as those tend to be smaller, less diverse electorates.[8] A variable is included which measures the ratio of primary elections to caucus elections on an election day. The variable controls for whether certain candidates receive a disproportionate share of their support from one type of election. Multiple elections are held on the same day, and the models capture the number of caucuses and primaries on a given day with a count variable equal to the total number of states holding an election on a given day. The last control variable measures the number of candidates running in the state, to capture the progression of the winnowing process. This variable generates a "naive" expectation of candidate success based on the number of competitors within a state; the more candidates running within the state, the lower the size of the expected vote for candidate i.

As noted, the time-series models include a lagged dependent variable, average candidate success on the previous election date. Angrist and Pischke (2009), among others, recommend not including random or fixed effects for models with a lagged dependent variable because including both requires conditional independence for both time-variant and invariant variables, and if that assumption is not met, the model will produce biased estimates. One option is to model outcomes using each separately and approximate bounded estimates. Here, I use only a lagged dependent variable to measure the key causal concept, but the results do not substantively change when fixed effects for year and random effects for candidate are included. I also cluster the standard errors by candidate to deal with correlated errors by candidate. All models were also run with robust standard errors, and the clustered standard errors produce more conservative, that is, larger p-values.

Evidence for Partisan Dynamics in Primary Campaigns

I begin the empirical analysis by examining trends in vote share for Republicans and Democrats separately. This descriptive data looks for evidence that each party's primary campaign evolves differently over time. Figure 1 plots the average vote share (per election day) only for those candidates who eventually became the nominee. These plots test whether the average vote share of nominees exhibits characteristics of a random-walk with upward drift, indicating that winning candidates receive a larger vote share, on average, as the primary race plays out. Random walks with drift have a unit-root as indicated by an augmented Dicky-Fuller test, meaning the time-series is non-stationary over time. Evidence of non-stationarity suggests that candidates

received a greater level of support, on average, as the primary season continued.

Figure 1 offers support for the claim that Republican primary campaigns are substantively different than Democratic campaigns. The figure shows that there are two types of primary campaigns. Those in the top panel are "grind-it-out" campaigns, where the winner maintained a relatively consistent vote share across the primary calendar, with no evidence that they consolidated their party's vote over time. These campaigns are formally defined as a stationary time-series in which there is no unit root. The campaigns in the bottom panel are "distancing" campaigns where the winner gathered a larger average vote share across time, out-pacing their nearest rival as the campaign season continued. Formally, these campaigns are defined as a random walk with upward drift, where the time-series contains a unit root.

Figure 1 here

The winners for each are shown in the caption, and notably all but one of the "grind-it-out" competitive campaigns are Democrats, with Reagan's 1980 nomination the only exception. The "distancing" campaigns are all Republicans except for Clinton's 1992 run. This lends some support to the notion that Republicans unify earlier and choose their candidate sooner, with winners gaining greater support over time. For the "grind-it-out" campaigns, the candidate's vote share does not increase in a systematic way over time. That is, while Republicans frequently have contested campaigns, defined as multiple candidates running, they are usually not divisive in that they split the support of the party elite and the voters (Dowdle et. al., 2013).

It is instructive to examine Trump's 2016 campaign, highlighted by the dashed line in the bottom panel, and Clinton's 2016 campaign highlighted by the dashed line in the top panel. Trump did not win the invisible primary in his race, facing a large set of serious contenders, while Clinton was the clear favorite over her lone rival, Bernie Sanders.[9] Despite the large number of entrants in the Republican race, the lack of endorsements or fund-raising by Trump, and the outright opposition to him by much of the party elite, his average vote share steadily increased across time, reaching 50% on the 12th primary contest day (April 19th, which was New York's primary) and never dipping below that subsequently. Clinton, on the other hand, won over 50% of the vote on February 23rd, then 73% of vote on February 27th, but three election days later received only 36% of the vote. Clinton received less than 50% of the vote as late as June 7th, and never managed to decisively pull away from Sanders. These dynamics clearly demonstrate the differences between Republican and Democratic campaigns and provide strong empirical evidence that Republicans coalesce around a candidate much sooner than

Democrats.

Empirical Tests of Candidate Support Conditional on Party

The first set of models testing candidate support conditional on party uses lagged average vote percentage and lagged candidate wins, a variable equal to the number of states candidate i won on the prior election day, to predict subsequent average vote percentage. Table 2 shows three different models. Model 1 is an autoregressive model which includes the two lagged candidate success variables and all control variables. Model 2 includes an interaction between average vote share and party of the candidate, model 3 includes an interaction between the lagged number of candidate wins variable and party, while model 4 includes an interaction between party and a dummy variable for whether or not a candidate won at least one state on a given election day. Models 2, 3, and 4 test whether Republicans receive an additional bonus in the subsequent election for performing well or winning states, as compared to Democrats.

Table 2 here

In model 1, the effect of lagged vote share is positive and significant, with a substantive effect of .72% (95% CI: .62% to .83%) for every percentage point of vote share received by a candidate.[10] The lagged candidate wins variable is statistically significant at the .1 level, indicating that all else equal, winning at least one state on the previous election day, independent of performing well overall, may boost a candidate's vote share on the next election day.

In model 2, the lagged vote share effect is very similar, and there is a positive conditional effect for Republican party. This suggests that both Democrats and Republicans see their vote share increase after they perform well. The marginal effect for both Republicans and Democrats is positive and significant, but the two are not statistically distinguishable from each other. Taken together, models 1 and 2 confirm that overall electoral success produces additional success for candidates of both parties, consistent with the *Electoral Success hypothesis*. In model 3, though the interaction term is not significant, the marginal effects indicate that Republicans receive a statistically significant effect from winning an additional state. That is, the differences between Democrats and Republicans is insignificant, but Democrats do not receive an electoral bonus different from zero, whereas Republicans do. The estimated marginal effect for Republicans is 1.16% (95% CI: .018% to 2.31%) indicating that for each state a Republican wins, the candidate can expect their future vote share to increase by 1.16%, in addition to the

effect from lagged average vote share. Thus, if a Republican wins one state and receives 20% of the vote, they can expect to receive 21.16% of the vote in the subsequent election according to the interaction term, all else equal. The substantive effect for Democrats is .24%, it is not statistically different from zero. Model 4 interacts whether a candidate had at least one state win on the prior election day with party. The interaction term is positive and significant, indicating that moving from Democrats to Republicans produced a significantly larger effect, but the marginal effect for Republicans is itself not significant (the marginal effect for Democrats is actually negative and significant at the .05 level).

Table 3 further explores these results and show similar outcomes. In these models, the dependent variable is a count of number of state contests won, as measured by vote share. The number of states won by a candidate on a given primary day ranges from zero to 18 (H.W. Bush on March 8th, 1988) with a mean of .5. Because the dependent variable is not normally distributed, Poisson models are used. Again for each of the three models, lagged average vote share is a positive and significant predictor of number of states won by a candidate.

Table 3 here

According to model 1 of table 3, a one percent increase in lagged vote share increases the expected number of states won by about 1.91% (95% CI: 1.21% to 2.48%) for Democrats and 2.12% for Republicans (95% CI: 1.54% to 2.70%, the differences between parties are not statistically significant), with similar results in models 2 and 3. The interaction term in model 1 measures whether Republicans receive a bonus for doing well as compared to Democrats. Both Democrats and Republicans receive a significant bump in the subsequent election from receiving a larger vote share, but as was the case with average vote share as the dependent variable, there is no significant difference between the parties. The same is true when party is interacted with lagged number of states a candidate won in the previous election (model 2), but in model 3, the interaction term is positive and significant, indicating that if a Republican wins at least one state, they have a higher expected number of state wins in the subsequent election. For Republicans, winning at least one state produces a 1.43% increase (95% CI: 1.07% to 1.90%) in the expected number of states won on the next primary election day. For Democrats, winning at least one election does not produce a statistically significant difference in the number of states won on the subsequent day.

To summarize the findings from tables 2 and 3, Republicans are rewarded with increased average vote share and with a higher expected number of states won after a primary election

in which they win at least one state. They also receive a higher average vote share for each additional state won, but there is no increase in the expected number of states won for each additional state won. Instead, simply winning one state produces a higher count of expected number of state wins at the subsequent election, indicating that for a Republican, winning is more important than performing well, on average, across a large number of states.[11] For Democrats, it is unimportant whether they win a state, controlling for previous average performance. By doing well across all states, they can increase their vote share and the number of expected state wins. These results are consistent with the claim that the structure of the Republican primary over-rewards winners, while Democrats are rewarded not for winning, but for attracting voters across many states. This evidence supports the *Republican Win-Bonus* hypothesis and suggests that the structure of the primary system allows Republicans to coalesce around their winners faster than Democrats.

Table 4 here

To test one possible cause of this bonus, table 4 includes a dummy variable indicating whether a candidate won a state with winner-take-all delegate rules on a given election day. Data for delegate counts, as discussed above, is sparse so these models only include the 2008, 2012, and 2016 election cycles, with a total of 29 candidate-days with a winner-take-all victory.[12] All other candidate-election days are coded zero, including those for Democrats who do not campaign under winner-take-all rules. Models 1 and 2 are regression models where the dependent variable is average vote share, and consistent with expectations, a victory in a winner-take-all state provides both an unconditional effect, which increases average vote share by 9.48% (95% CI: 3.75% to 15.21%), and a conditional effect with lagged average vote share. The effect of lagged average vote share is an increase of .776% (shown by the coefficient for lagged average vote share), but when a candidate wins a winner-take-all-victory, the expected effect of lagged average vote share is 1.01% (95% CI: 0.78 to 1.24%). Interestingly, Poisson models 3 and 4 suggest that scoring a winner-take-all victory does not increase the expected number of states a candidate will win, and the interaction term is negative in model 4. Why this is the case is unclear, though it may be that candidates invest significant resources in a winner-take-all state which hurts their ability to win future states (though they still receive an overall vote share bump.) These results should be interpreted cautiously as they represent only a small sub-sample of elections and winner-take-all Republican victors are compared to both other Republicans and Democrats.

14

Tables 2 and 3 also show that candidates with a larger share of resources perform significantly better. Recall that the percentage of money on hand variable captures the share of money possessed by a given candidate out of all money raised by all candidates at the start of that party's primary season. In model 1 of table 2, a one unit increase in money on hand relative to all other candidates results in a .18% increase in average vote share (95% CI: 0.103% to 0.276%). Consider that for a candidate like George W. Bush, who raised 77% of all money raised at the start of the 2000 Republican primary, the effect on his expected vote share in a given state was almost 14%.[13] Likewise, in table 3, each additional percent of money on hand increases the expected number of states won by about 1.03% (95% CI: 0.16% to 1.9%). Models 1, 2 and 3 of table 3 also show significant effects for the number of elections on a given election day. Each additional state election increases the expected number of wins by 15.5% (95% CI: 12.79% to 18.32%).

I also interacted the variable indicating whether the election day was for Iowa, New Hampshire, or Super Tuesday to determine whether those days provided an additional boost to candidates independent of other factors included in the model. That variable is insignificant in the models, and is insignificant as an interaction term with lagged average vote share or with party, suggesting that the independent effect of these elections may not be as important as commonly claimed.

Candidate Exit from Primaries

I now turn to determining whether Republicans are more likely to exit the primary race. The theoretical expectation is that because Republicans are rewarded for winning while Democrats are rewarded only for receiving votes, Republicans should be more likely to exit the campaign given the zero sum nature of the race. Hazard models are used to measure the instantaneous probability of exit from the race for each candidate. These models are commonly used in political science and other disciplines to capture the risk of "failure" (Box-Steffensmeier & Zorn, 2001; Box-Steffensmeier & Jones, 2004), here defined as leaving the race.

As noted above, candidates who receive less than 1% of the average vote on any primary day are excluded from the dataset as non-serious contenders. With respect to the hazard models, candidates are treated as leaving the race when they receive less than 1% of the average election day vote in all future races. Many candidates announce their departure, but remain on the ballots in many states and continue to receive significant vote shares, affecting the dynamics of

the race for other candidates.[14] But, keeping candidates who quit and then continue to receive very small vote shares gives the appearance that they stayed in the race much longer than they were actively running.

All the control variables listed above are included with one exception. Because the hazard function measures the risk of failure for a candidate at any point in time, lagged variables are not appropriate, so the lagged measures of candidate success (i.e., average vote share, states won) are not included. Still, the candidate's perception of how they are doing may affect their decision to drop out, so a variable measuring their average finish across primary-days (i.e., first, second, third, etc.) is included. This is not a lagged variable but a measure of previous primary success for any given point in time. Using these variables, the hazard function is:

$$\% \Delta hazard = \left(\frac{e^{\beta(x_i=X_1)} - e^{\beta(x_i=X_2)}}{e^{\beta(x_i=X_2)}}\right) * 100 \tag{1}$$

where e is the exponentiation of x_i, a variable, and X_1 and X_2 are given values of the variable, which measures the change in hazard for a one unit increase in the independent variable. I report hazard coefficients for each variable, which are interpreted as increasing the risk of failure if the hazard coefficient is positive and decreasing the risk of failure if the coefficient is negative. Substantive interpretations of the coefficients are reported in the text using hazard ratios, where ratios greater than one indicate a positive risk of failure, and ratios less than one indicate a negative risk of failure.

The hazard models use average vote share, number of candidates in state, ratio of primaries to caucuses, percentage of money on hand, party, and the number of state elections per day as independent variables, a number of which violate the proportional hazards assumption (see tables A1 and A2 in the Appendix for the coefficient estimates and the results of the Grambsch-Therneau test for non-proportionality), indicating that the effect of these variables changes over time. To correct for these violations the variable is interacted with time.[15] Table 5 displays the results from these two models along with their interactions.

Table 5 here

Model 1 includes average vote share, while model 2 replaces average vote share with a dichotomous variable for a candidate win. In both models, the party component term is negative, while the interaction term is positive and significant indicating that the chances of a Republican dropping out early in the race are very low, but that as the race progresses, Republicans become

increasingly likely to drop out as compared to Democrats. To show the substantive effect of time on Republican candidates, figure 2 graphs the hazard for party across the primary. As the figure shows, the hazard is less than one until the 18th election day, when Republicans have a 20% higher chance of quitting the race as compared to Democrats. The 18th election day in most recent years is mid- to late May or early June, or about 1.5 standard deviations beyond the mean number of election days.

The longer the race goes on, the higher the hazard for Republicans becomes as compared to Democrats, such that on the 19th election day, Republicans have a 73% higher chance of quitting, and on the 20th day, Republicans have a 150% higher chance of quitting as compared to Democrats. These are large substantive effects and demonstrate that later in the race, it is almost exclusively Republicans who drop out. In fact, no Democrat in the sample drops out after the 19th election day, and no Republican in the sample quits before the seventh election day (among these receiving at least 1% of the vote on a given day). The graph ends on the 20th day as the hazard increases exponentially due to no Democratic drop-outs after that point. It is also important to note that the party interaction is significantly different from zero in both models, in addition to being significantly different from the component term.

Figure 2 here

The results for model 2, which includes winning a state rather than average vote share, are very similar. Figure A1 in the Appendix shows Kaplan-Meier survival estimates separated by party. As the figure shows, Democrats have higher hazard rates early, but Republicans are more likely to exit about halfway through the campaign, and then substantially more likely to exit later in the campaign. Interestingly, money on hand, an important predictor of primary success, has no effect on whether a candidate drops out of the race in either model. This suggests that even poorly funded candidates with little chance of winning are likely to continue running, perhaps because some candidates are truly "advocacy" candidates and sustain their campaign to make a point, rather than win the nomination, consistent with previous work on candidate exit (e.g., Damore, Hansford, & Barghothi 2010). Other significant results include the ratio of primaries to caucuses variable, which produces an increase in the hazard. The negative effect demonstrates that candidates are less likely to drop out on a day with more caucus elections, likely due to smaller states holding primaries, and in recent years, front-runners doing worse in primaries as compared to caucuses, especially in the Democratic Party (e.g., Obama in 2008, Sanders in 2016). Finally, the Super Tuesday, Iowa, or New Hampshire

dummy variable is positive and significant when interacted with time, suggesting that these election days are particularly important to the winnowing process.

The Effect of Candidate Status and Changes Over Time

The results thus far have demonstrated that Republican candidates receive disproportionate rewards for winning state primaries or caucuses, which results in a higher likelihood of candidate exit later in the primary season. But, there is evidence that the Republican Party frequently has a clear front-runner at the start of the campaign (Steger et al., 2004). Perhaps, rather than receiving additional support from winning, Republicans have shorter primaries because Republican voters exhibit greater deference to the early favorite, treating front-runners differently than do Democrats. This offers an alternative causal story to the theory that Republican Party homogeneity and delegate allocation rules allow successful Republican candidates to distance themselves from their competitors and force earlier candidate exit. Instead, the results may be driven by differences in candidate selection at the start of the campaign season. If the positive effects of voter support or winning differ by parties, it would indicate that Republicans coalesce around front-runners more quickly than Democrats, as opposed to rewarding whichever candidate generated significant support. In the models above predicting voter support, the amount of money raised by a candidate (as a percentage of all money raised by all co-partisans for each election year) is an important predictor of primary success. This result is expected as money raised has been shown in previous research to be an important predictor of candidate success. By interacting the effect of percentage of money on hand for each candidate with party, it can be determined whether Democratic and Republican voters react to better known and better funded candidates differently.

The results are shown in table 6. Model 1 is a regression model with average vote share as the dependent variable, and with all other control variables previously included. Model 2 is a Poisson regression with number of candidate state wins as the dependent variable, and all control variables as well. In both models, money on hand has a strong positive effect, as in the previous models, but there are no differences between parties; both Democratic and Republican candidates receive a significant bonus from having more money on hand. The results are clear: candidates from both parties perform better when they have more money, but there is no difference between the parties in the effect of front-runner status on electoral success. The over-rewarding of Republicans cannot be attributed to more deference given to the favored candidate, as Democratic candidates also see increased support from additional resources.

I also investigate whether the dynamics within each party have changed over time. The results shown in table 6 hold when limiting the sample only to the post-Bush administration (2008-2016, results not shown) when internal divisions seem to increase in the Republican Party (Dowdle et. al., 2013; Steger, 2015). Broader tests of the relationship between party and election cycle, and limiting the sample to the 2008-2016 era show results consistent with the previous models. Both Democrats and Republicans benefit from lagged average vote share, with Republicans receiving an extra benefit from a win, even in recent elections despite, perhaps, growing divisions within the Republican Party. Though the level of unity among Republicans may be changing, it is not yet producing distinct outcomes in their nominating process (results shown in Appendix D.)

Discussion

The evidence presented here confirms the conventional wisdom that Republicans have less divisive presidential primary campaigns than Democrats. The front-runner consolidates their vote share over time, whereas Democratic favorites almost always struggle through the primary, splitting their vote share with other candidates. The question addressed throughout is how do Republicans reach agreement with greater ease than Democrats? Using existing literature on party differences that suggests Republicans have greater intra-party homogeneity and delegate allocation rules, I developed three hypotheses to explain the differences in temporal dynamics for each party. Specifically, Republicans receive more support from voters for winning a state as opposed to performing well overall, which induces faster candidate exit from the Republican primary, as compared to Democrats.

The results are strongly supportive of the theoretical claims that Republican winners consolidate vote share because they receive greater support from winning than Democrats. By quantifying the effects of lagged vote share on vote share in the next election, the results show that Democrats do not receive more voter support after a state win beyond that received from performing well across many states. For Republicans, it is also the case that winning a state increase the probability of future wins, while no such relationship exists for Democrats. Hazard models demonstrated differences in the probability of candidate exit for both parties. Early

in the race, Democratic candidates are far more likely to quit than Republicans. But, as has been seen in recent elections, if a Democratic candidate can manage to stay in the race for the first three months or so, they become much less likely to quit the campaign than Republican candidates. The hazard for Republicans about two-thirds of the way through the race is 20% greater than for Democrats, and increases exponentially for subsequent election days. The last set of empirical tests demonstrated that these results are not driven by greater support of the front-runner by Republicans during the campaign. Further, the dynamics within each party do not appear to have changed substantially over time.

At the start of the 2016 race, Hillary Clinton was expected to easily win the Democratic nomination, while there was no clear Republican front-runner. Instead, Clinton struggled to overcome the challenge of Bernie Sanders while Donald Trump quickly consolidated the Republican vote, despite opposition from party leaders and a number of strong challengers. The Democratic primary divided the party, while Republicans unified behind their nominee, if somewhat reluctantly. Given the evidence presented here, should the Democratic Party change their nomination process to over-reward winners, thrby instituting winner-take-all states? Perhaps, if Clinton benefited to a greater degree from winning delegate-rich states, she could have wrapped up the nomination sooner. But, Democrats run a risk, as a more diverse party, that over-rewarding candidates will produce even more divisiveness among supporters of the losing candidate. In fact, Democrats already have a mechanism to reward the favorite—superdelegates—that seems to engender resentment by lesser known candidates and their supporters. Stacking the deck even more might cause more Democratic voters to disengage from the party, believing the process is "rigged."

Overall, the empirical results demonstrate the utility of an approach to examining primary contests that does not rely on predicting the overall winner, or on in-depth case studies of a small set of elections. The strategy used here provides needed empirical evidence for the claim that Republican Party homogeneity and delegate allocation rules shorten the primary season. The tests allow for only preliminary evidence of winner-take-all rules as a possible causal mechanism, but show that these effects have systematically occurred over the last few decades, since the adoption of the primary-centered nomination process. In contrast to claims that the Republican Party is becoming more heterogeneous, I find no differential effects over time, though the level of party unity is not tested directly. Future research should address whether party homogeneity or delegate allocation rules are equally important or the over-rewarding of Republicans for winning is more attributable to one cause.

Endnotes

[1]Whether the process is actually more populist today is subject to debate (Aldrich, 2009).

[2]Examples of these dynamics abound in both parties. In 2016, Clinton, the clear early favorite, faced a strong challenge from Bernie Sanders. In 2008 Obama challenged Clinton (successfully), and in 2004, Kerry was challenged by Dean and Edwards. Even sitting Democratic president Jimmy Carter received his 1980 nomination from a divided party after the success of Edward Kennedy's candidacy. On the Republican side, Romney and McCain both faced notable challengers but both had the nomination largely sewn up by March. Even Trump, though not the front-runner in an open race, forced his last major rival to dropout by early May.

[3]L. W. Kenny & Lotfinia (2005) are one exception to the claim that ideology is relatively unimportant, as they show that moderately liberal Democrats and conservative Republicans were most successful in winning the nomination in the period 1950-2000.

[4]For endorsement data on the Republican 2016 campaign, see Bycoffe, Aaron. "The Endorsement Primary," FiveThirtyEight.com, accessed at: `https://projects.fivethirtyeight.com/2016-endorsement -primary/` on January 9, 2017.

[5]Geer (1986) defines loophole systems as those in which the primary is winner-take-all by congressional district.

[6]For information on the 2016 election, see John Sides, "Everything you need to know about delegate math in the presidential primary." The Washington Post, accessed at: `https://www.washingtonpost.com/news/ monkey-cage/wp/2016/02/16/everything-you-need-to-know-about-delegate-math-in-the-presidential -primary/?utm_term=.54982eb7cda2` on August 12, 2016.)

[7]One other possible competitive election involving a sitting vice-president is the Gore-Bradley race in 2000. Bill Bradley challenged Al Gore in the primary and drew some significant support and attention, performing well in early states. However, this race is excluded as Bradley did not win a single primary, and consistent with Gore's status as the prohibitive favorite, he never received less than 49% of the vote on an election day, whereas Bradley never received more than 33% of the vote. I re-ran all models including the Gore-Bradley race and the results do not differ significantly.

[8]The relationship between performance and ideology seems especially acute in the Democratic Party. To take one example, Bernie Sanders drew much stronger support in caucus states in 2016 than in primary states, as did Barack Obama in 2008.

[9]In the Republican race, Ben Carson had the largest share of money raised at the start of the primary campaign, accounting for 23.5% of all money raised, while Cruz had 20.5%, Jen Bush had 14%, Rubio had 12.5%, and Trump had just 8.5%

[10]In time-series models, autocorrelation and non-stationarity are concerns. The Fisher test for panel unit roots on the residuals confirms that at least one panel is stationary. The use of a lagged independent variable mitigates some of the effects of autoregression, and additional diagnostic tests including a scatter plot of the fitted values and residual values indicates no evidence of autocorrelation.

[11]Rudy Giulani engaged in just such a strategy in 2008, ignoring early states and campaigning almost exclusively in Florida in an attempt to win the state. He finished third and was forced to withdraw from the race.

[12]This data was gathered from the New York Times delegate tracker. Accessed at: `https://www.nytimes.com/elections/2008/primaries/results/gopdelegates/index.html`, `https://www.nytimes.com/elections/2012/primaries/delegates.html`, and `https://www.nytimes.com/interactive/2016/us/elections/primary-calendar-and-results.html` on July 12, 2017.

[13]Romney in 2008 had the highest percentage of money on hand of any losing candidate in the dataset, having raised 53% of all money among 2008 Republicans, more than double McCain's percentage.

[14]For example, John Edwards announced the suspension of his campaign on March 3rd, 2004, but continued to win a significant vote share in other states and finished first in his home state primary of North Carolina, on April 17th.

[15]I use time rather than the natural log of time because of the relatively short duration of the primary period, less than 30 primary-days in all cases.

References

Abramowitz, A. I. (1989). Viability, electability, and candidate choice in a presidential primary election: A test of competing models. *Journal of Politics*, *51*(4), 977-992.

Adams, W. C. (1987). As new hampshire goes . . . In *Media and momentum: The new hampshire primary and nomination politics*. Chatham, NJ: Chatham House Publishers.

Adkins, R. E., & Dowdle, A. J. (2000). Break out the mint juleps?: Is new hampshire the "primary" culprit limiting presidential nomination forecast? *American Politics Research*, *28*(2), 251-269.

Adkins, R. E., & Dowdle, A. J. (2001). How important are iowa and new hampshire to winning post-reform presidential nominations? *Political Research Quarterly*, *54*(2), 431-444.

Adkins, R. E., & Dowdle, A. J. (2002). The money primary: What influences the outcome of pre-primary presidential nomination fundraising? *Presidential Studies Quarterly*, *32*(2), 256-275.

Adkins, R. E., & Dowdle, A. J. (2005). Do early birds get the worm? improving timeliness of presidential nomination forecasts. *Presidential Studies Quarterly*, *35*(4), 646-660.

Aldrich, J. (2009). The invisible primary and its effects on democratic choice. *PS: Political Science and Politics*, *42*, 33-38.

Angrist, J. D., & Steffen-Pischke, J. (2009). *Most harmless econometrics: An empiricists companion*. Princeton, NJ: Princeton University Press.

Bartels, L. M. (1985). Expectations and preferences in presidential nominating campaigns. *American Political Science Review*, *79*(3), 804-815.

Bartels, L. M. (1988). *Presidential primaries and the dynamics of public choice*. Princeton, NJ: Princeton University Press.

Berggren, D. J. (2007). Two parties, two types of nominees, two paths to winning a presidential nomination,1972-2004. *Presidential Studies Quarterly*, *37*(2), 203-227.

Bernstein, R. A. (1977). . "divisive primaries do hurt: Us senate races, 19561972. *American Political Science Review*, *71*(2), 540-545.

Box-Steffensmeier, J. M., & Jones, B. S. (2004). *Event history modeling: A guide for social scientists. analytical methods for social research series*. New York: Cambridge University Press.

Box-Steffensmeier, J. M., & Zorn, C. J. (2001). Duration models and proportional hazards in political science. *American Journal of Political Science*, *45*(4), 951-967.

Buell, E. H., Jr. (1986). Divisive primaries and participation in fall presidential campaigns: A study of 1984 new hampshire primary activists. *American Politics Quarterly*, *14*(4), 376-390.

Busch, A. W. (2008). Federalism and front-loading. *Publius*, *38*(3), 538-555.

Christenson, D. P., & Smidt, C. D. (2011). Riding the waves of money: Contribution dynamics in the 2008 presidential nomination campaign. *Journal of Political Marketing*, *10*(1-2), 4-26.

Cohen, M., Karol, D., Noel, H., & Zaller, J. (2008). *The party decides: Presidential nominations before and after reform*. Chicago: University of Chicago Press.

Collingwood, L., Barreto, M. A., & Donovan, T. (2012). Early primaries, viability, and changing preferences for presidential candidates. *Presidential Studies Quarterly*, *42*(2), 231-255.

Damore, D. F., Hansford, T. G., & Barghothi, A. J. (2010). Explaining the decision to withdraw from a us presidential nomination campaign. *Political Behavior*, *32*(2), 157-280.

David, P. T., & Ceaser, J. W. (1980). *Proportional representation in presidential nominating politics*. Charlottesville, VA: University of Virginia Press.

Dowdle, A., Limbocker, S., Yang, S., Sebold, K., & Stewart, P. (2013). *The invisible hands of political parties in presidential elections: Party activists and political aggregation from 2004 to 2012*. New York, NY: Springer.

Dowdle, A. J., Adkins, R. E., & Steger, W. P. (2009). The viability primary: Modeling candidate support before the primaries. *Political Research Quarterly*, *62*(1), 77-91.

Epstein, L. (1986). *Political parties in the american mold*. Madison, WI: University of Wisconsin Press.

Geer, J. G. (1986). Rules governing presidential primaries. *The Journal of Politics*, *48*(4), 1006-1025.

Gervais, B. T., & Morris, I. L. (2012). Reading the tea leaves: Understanding tea party caucus membership in the us house of representatives. *PS: Political Science & Politics*, *45*(2), 245-250.

Hadley, A. T. (1976). *The invisible primary*. New York, NY: Prentice-Hall.

Hood, M. V. I., Kidd, Q., & Morris, I. L. (2015). Tea leaves and southern politics: Explaining tea party support in the region. *Social Science Quarterly*, *96*(4), 923-940.

Hull, C. C. (2008). *Grassroots rules: How the iowa caucus helps elect american presidents*. Stanford, CA: Stanford University Press.

Jewitt, C. E., & Treul, S. A. (2014). Competitive primaries and party division in congressional elections. *Electoral Studies*, *35*, 140-149.

Karol, D., Noel, H., Zaller, J., & Cohen, M. (2003). Polls or pols: The real driving force behind presidential nominations. *Brooking Review*, *3*(Summer), 36-39.

Kellett, J., & Mott., K. (1977). Presidential primaries: Measuring popular choice. *Polity*, *9*(4), 528-537.

Kenney, P. J., & Rice, T. W. (1987). The relationship between divisive primaries and general election outcomes. *American Journal of Political Science*, *31*(1), 31044.

Kenny, L. W., & Lotfinia, B. (2005). Evidence on the importance of spatial voting models in presidential nominations and elections. *Public Choice*, *123*(3-4), 439-462.

Knight, B., & Schiff, N. (2010). Momentum and social learning in presidential primaries. *Journal of Political Economy*, *118*(6), 1110-1150.

Makse, T., & Sokhey, A. E. (2010). Revisiting the divisive primary hypothesis: 2008 and the clinton obama nomination battle. *American Politics Research*, *38*(2), 233-265.

Mayer, W. G. (1996). *The divided democrats: Ideological unity, party reform, and presidential elections*. Boulder, CO: Westview Press.

Mayer, W. G. (1997). The presidential nominations. In G. M. Pomper (Ed.), *The elections of 1996*. Chatham, NJ: Chatham House.

Mayer, W. G. (2003). Forecasting presidential nominations or, my model worked just fine, thank you. *PS: Political Science and Politics*, *36*(1), 153-157.

McGowen, E. B., & Palazzolo, D. J. (2014). Momentum and media in the 2012 republican presidential nomination. *Presidential Studies Quarterly*, *44*(3), 431-446.

Mutz, D. C. (1997). Mechanisms of momentum: Does thinking make it so? *The Journal of Politics*, *59*(1), 104-125.

Newport, F. (1999). *Republican front-runner one year before presidential election almost always wins nomination.* Gallup News Service. (Accessed at: `http://www.gallup.com/poll/3457/republican-frontrunner-one-year-before-presidential-election-almost.aspx` on January 21, 2017)

Norrander, B. (1993). Nomination choices: Caucus and primary outcomes, 1976-88. *American Journal of Political Science*, *37*(2), 343-364.

Norrander, B. (2000). The end game in post-reform presidential nominations. *Journal of Politics*, *62*(4), 999-1013.

Norrander, B. (2006). The attrition game: Initial resources, initial contests and the exit of

candidates duringthe us presidential primary season. *British Journal of Political Science*, *36*(3), 487-507.

Piereson, J. E., & Smith, T. B. (1975). Primary divisiveness and general election success: A re-examination. *The Journal of Politics*, *37*(2), 555-562.

Polsby, N. W. (1983). *Consequences of party reform*. New York, NY: Oxford University Press.

Popkin, S. L. (1994). *The reasoning voter: Communication and persuasion in presidential campaigns*. Chicago, IL: University of Chicago Press.

Price, D. E. (1984). *Bringing back the parties*. Washington D.C.: Congressional Quarterly.

Ranney, A. (1974). Comment on "changing the rules changes the game". *American Political Science Review*, *68*(1), 43-44.

Ridout, T. N., & Rottinghaus, B. (2008). The importance of being early: Presidential primary front-loading and the impact of theproposed western regional primary. *PS: Political Science and Politics*, *41*(1), 123-128.

Shaffer, B. E. (1988). Review: Scholarship on presidential selection in the united states. *American Political Science Review*, *82*(3), 955-963.

Steger, W. P. (2000). Do primary voters draw from a stacked deck? presidential nominations in an era of candidate-centered campaigns. *Presidential Studies Quarterly*, *30*(4), 727-753.

Steger, W. P. (2007). Who wins nominations and why?: An updated forecast of the presidential primary vote. *Political Research Quarterly*, *60*(1), 91-99.

Steger, W. P. (2008). Forecasting the presidential primary vote: Viability, ideology and momentum. *International Journal of Forecasting*, *24*(2), 193-208.

Steger, W. P. (2015). *A citizen's guide to presidential nominations: The competition for leadership*. New York, NY: Routledge.

Steger, W. P., Dowdle, A. J., & Adkins, R. E. (2004). The new hampshire effect in presidential primaries. *Political Research Quarterly*, *57*(3), 375-390.

Steger, W. P., Hickman, J., & Yohn, K. (2002). Candidate competition and attrition in presidential primaries, 1912-2000. *American Politics Research*, *30*(5), 528-554.

Strumpf, K. S. (2002). Strategic competition in sequential election contests. *Public Choice*, *111*(3), 377-397.

Tolbert, C., & Squire, P. (2009). Reforming the presidential nominating process. *PS: Political Science and Politics*, *42*(1), 27-30.

Traugott, M. W., & Wlezien, C. (2009). The dynamics of poll performance during the 2008 presidential nomination contest. *Public Opinion Quarterly*, *73*(5), 866-894.

Winebrenner, H. (1998). *The iowa precinct caucuses: The making of a media event* (Second ed.). Ames, IA: Iowa State University Press.

Yang, S., Limbocker, S., Dowdle, A., Stewart, P. A., & Sebold, K. (2015). Party cohesion in presidential races: Applying social network theory to the preprimary multiple donor networks of 2004 and 2008. *Party Politics*, *21*(4), 638-648.

Tables

Table 1: Summary of Years and Candidates Included in Analysis

1980 Republicans	Anderson, Baker, H.W. Bush, Connally, Crane, Dole, Fernandez, Reagan
1980 Democrats	Brown, Carter, Kennedy, LaRouche
1984 Republicans	Excluded—Incumbent President
1984 Democrats	Askew, Glenn, Hart, Jackson, McGovern, Mondale
1988 Republicans	H.W. Bush, Dole, Kemp, Robertson
1988 Democrats	Babbitt, Dukakis, Gephardt, Gore, Hart, Jackson, Simon
1992 Republicans	Excluded—Incumbent President
1992 Democrats	Brown, B. Clinton, Harkin, Tsongas
1996 Republicans	Alexander, Buchanan, Dole, Forbes
1996 Democrats	Excluded—Incumbent President
2000 Republicans	W. Bush, Keyes, McCain
2000 Democrats	Excluded—Incumbent Vice Prsident
2004 Republicans	Excluded—Incumbent President
2004 Democrats	Clark, Dean, Edwards, Kerry
2008 Republicans	Huckabee, McCain, Paul, Romney
2008 Democrats	H. Clinton, Edwards, Obama
2012 Republicans	Gingrich, Huntsman, Paul, Perry, Romney, Santorum
2012 Democrats	Excluded—Incumbent President
2016 Republicans	J. Bush, Carson, Christie, Cruz, Fiorina, Huckabee, Kasich, Paul, Rubio, Santorum, Trump
2016 Democrats	H. Clinton, Sanders

Candidates included are those who received at least 1% of the popular vote share on at least one primary or caucus election day. Non-competitive elections (1984 Republicans, 1992 Republicans, 1996 Democrats, 2000 Democrats, 2012 Democrats) are excluded.

Table 2: The Conditional Effect of Party on Average Vote Share

Independent Variables	*1*	*2*	*3*	*4*
Lagged Avg. Vote Share	0.721**	0.651**	0.720**	0.760**
	(0.053)	(0.068)	(0.054)	(0.064)
Lagged No. of Candidate Wins	0.738*	0.708	0.241	
	(0.434)	(0.445)	(0.657)	
No. of Candidates	-0.023	0.008	-0.005	-0.004
	(0.229)	(0.223)	(0.227)	(0.223)
Ratio of Primaries to Caucuses	1.992**	2.078**	1.964*	1.837*
	(0.981)	(1.008)	(0.991)	(1.011)
Percentage of Money on Hand	0.189**	0.199**	0.190**	0.198**
	(0.043)	(0.047)	(0.044)	(0.046)
No. of State Elections Per Day	0.116	0.111	0.117	0.118
	(0.133)	(0.131)	(0.132)	(0.132)
Party of Candidate (1=GOP)	-0.832	-3.518*	-1.346	-2.569*
	(1.282)	(1.886)	(1.335)	(1.437)
Super Tuesday, N.H., or Iowa	0.474	0.471	0.454	0.233
	(1.255)	(1.289)	(1.256)	(1.297)
Lagged Candidate Win				-4.529**
				(1.994)
Party x Lagged Avg. Vote Share		0.122*		
		(0.072)		
Party x Lagged No. of Candidate Wins			0.921	
			(0.748)	
Party x Lagged Candidate Win				6.237**
				(2.976)
Constant	0.429	1.860	0.720	1.326
	(1.596)	(1.809)	(1.600)	(1.635)
N	1167	1167	1167	1167
R-Squared	0.654	0.657	0.654	0.656
AIC	9419.911	9410.571	9419.534	9412.771

**p<.05, *p<.1; regressions with clustered standard errors for 70 candidates. Average election day vote share is the dependent variable.

Table 3: Poisson Models of Number of States Won

Independent Variables	1	2	3
Lagged Avg. Vote Share	0.031**	0.034**	0.030**
	(0.005)	(0.003)	(0.004)
No. of Candidates	-0.020	-0.017	-0.013
	(0.042)	(0.043)	(0.042)
Ratio of Primaries to Caucuses	0.170	0.182	0.189
	(0.118)	(0.116)	(0.119)
Percentage of Money on Hand	0.010**	0.009**	0.010**
	(0.004)	(0.004)	(0.004)
No. of State Elections Per Day	0.144**	0.146**	0.144**
	(0.012)	(0.013)	(0.012)
Party of Candidate (1=GOP)	-0.438	-0.139	-0.547**
	(0.339)	(0.195)	(0.274)
Super Tuesday, N.H., or Iowa	0.064	0.077	0.051
	(0.154)	(0.160)	(0.150)
Party x Lagged Avg. Vote Share	0.008		
	(0.005)		
Lagged No. of Candidate Wins		0.050	
		(0.039)	
Party x Lagged No. of Candidate Wins		0.024	
		(0.051)	
Lagged Candidate Win			0.045
			(0.228)
Party x Lagged Candidate Win			0.677**
			(0.280)
Constant	-2.436**	-2.626**	-2.403**
	(0.272)	(0.231)	(0.243)
N	1167	1167	1167
Wald Chi-squared	429.28; 0.0	446.89; 0.0	440.02; 0.0
AIC	1741.546	1741.211	1729.802

**p<.05, *p<.1; Poisson regressions with clustered standard errors for 70 candidates. The number of states won on a given election day is the dependent variable.

Table 4: The Effect of Winner-Take-All Victories on Candidate Success, 2008-2016

Independent Variables	1 OLS	2 OLS	3 Poisson	4 Poisson
Lagged Avg. Vote Share	0.794**	0.776**	0.041**	0.043**
	(0.071)	(0.074)	(0.006)	(0.007)
Lagged No. of Candidate Wins	-0.569	-0.464		
	(0.661)	(0.694)		
No. of Candidates	-0.244	-0.281	-0.003	0.006
	(0.242)	(0.238)	(0.062)	(0.057)
Ratio of Primaries to Caucuses	-0.894	-1.277	-0.055	0.024
	(2.486)	(2.510)	(0.237)	(0.255)
Percentage of Money on Hand	0.142**	0.143*	0.006	0.005
	(0.069)	(0.070)	(0.012)	(0.011)
No. of State Elections Per Day	-0.013	-0.012	0.150**	0.152**
	(0.171)	(0.170)	(0.022)	(0.022)
Party of Candidate (1=GOP)	-1.902	-2.199	0.088	0.096
	(3.172)	(3.364)	(0.345)	(0.336)
Super Tuesday, N.H., or Iowa	1.142	1.252	-0.082	-0.082
	(1.801)	(1.770)	(0.308)	(0.317)
Lagged Winner-Take-All Victory	9.478**	-2.344	0.173	1.713**
	(2.780)	(7.345)	(0.275)	(0.440)
Lagged Winner-Take-All x Lagged Avg. Vote Share		0.235*		-0.026**
		(0.136)		(0.006)
Constant	3.833	4.737	-2.724**	-2.891**
	(5.188)	(5.398)	(0.535)	(0.546)
N	419	419	419	419
Wald Chi-squared			337.78; 0.0	289.02; 0.0
R-Squared	0.753	0.754		
AIC	3238.761	3237.450	617.175	613.618

**p<.05, *p<.1; models 1 and 2 are ols regressions with clustered standard errors for 70 candidates. Average election day vote share is the dependent variable. Models 3 and 4 are Poisson regressions with clustered standard errors for 70 candidates. The number of states won on a given election day is the dependent variable.

Table 5: Hazard Models of Candidate Exit

| *Independent Variables*	*1*	*2*
Main Effects		
Avg. Vote Share	-0.027*	
	(0.015)	
Candidate Win		3.706
		(2.800)
Avg. Previous Finishes	0.482	0.565*
	(0.331)	(0.315)
No. of Candidates	0.435*	0.164
	(0.237)	(0.347)
Party of Candidate (1= GOP)	-6.438**	-5.689**
	(1.875)	(2.487)
Ratio of Primaries to Caucuses	5.072	5.891
	(4.807)	(5.092)
Percentage of Money on Hand	0.00	-0.002
	(0.015)	(0.012)
No. of State Elections Per Day	-0.115	-0.155*
	(0.071)	(0.092)
Super Tuesday, N.H., or Iowa	-2.640	-0.273
	(1.687)	(2.985)
Interactions with Time		
Candidate Win		-0.354**
		(0.165)
No. of Candidates		0.030
		(0.025)
Party of Candidate (1= GOP)	0.368**	0.313**
	(0.125)	(0.157)
Ratio of Primaries to Caucuses	-0.704*	-0.818*
	(0.425)	(0.455)
No. of State Elections per Day		0.005
		(0.010)
Super Tuesday, N.H., or Iowa	1.236**	0.908*
	(0.315)	(0.504)
Number of Obs.	70	70
Number of Failures	23	23
AIC	131.326	134.039
Likelihood Ratio Chi-Squared	137.63; 0.0	349.14; 0.0

**p<.05, *p<.1; hazard coefficients with robust standard errors, Breslow method used for ties. Candidates who did not fail are those who did not exit the race. Base results and the results of the Grambsch and Therneau Global/Local Tests are shown in Appendices A and B. Interactions with time are for those variables which violate the proportional hazards assumption.

Table 6: The Effect of Money on Hand Conditional on Party

Independent Variables	1 OLS	2 Poisson
Lagged Avg. Vote Share	0.743** (0.047)	0.036** (0.003)
No. of Candidates	-0.026 (0.230)	-0.020 (0.043)
Ratio of Primaries to Caucuses	1.868* (0.992)	0.169 (0.114)
Percentage of Money on Hand	0.177** (0.049)	0.011** (0.005)
Party of Candidate (1=GOP)	-1.465 (1.717)	-0.059 (0.318)
No. of State Elections Per Day	0.120 (0.135)	0.146** (0.013)
Super Tuesday, N.H., or Iowa	0.298 (1.276)	0.039 (0.163)
Lagged No. of Candidate Wins	0.648 (0.411)	
Party x Money on Hand	0.033 (0.062)	-0.001 (0.007)
Constant	0.734 (1.605)	-2.658** (0.252)
N	1167	1167
R-Squared	0.652	
Wald Chi-Squared		420.56; 0.0
AIC	9423.868	1747.075

**p<.05, *p<.1; model 1 is an ols regression with clustered standard errors for 70 candidates. Average election day vote share is the dependent variable. Model 2 is a Poisson regression with clustered standard errors for 70 candidates. The number of states won for a given election day is the dependent variable.

Figure 1: Average Vote Share for Winning Candidates in Two Types of Primary Campaigns
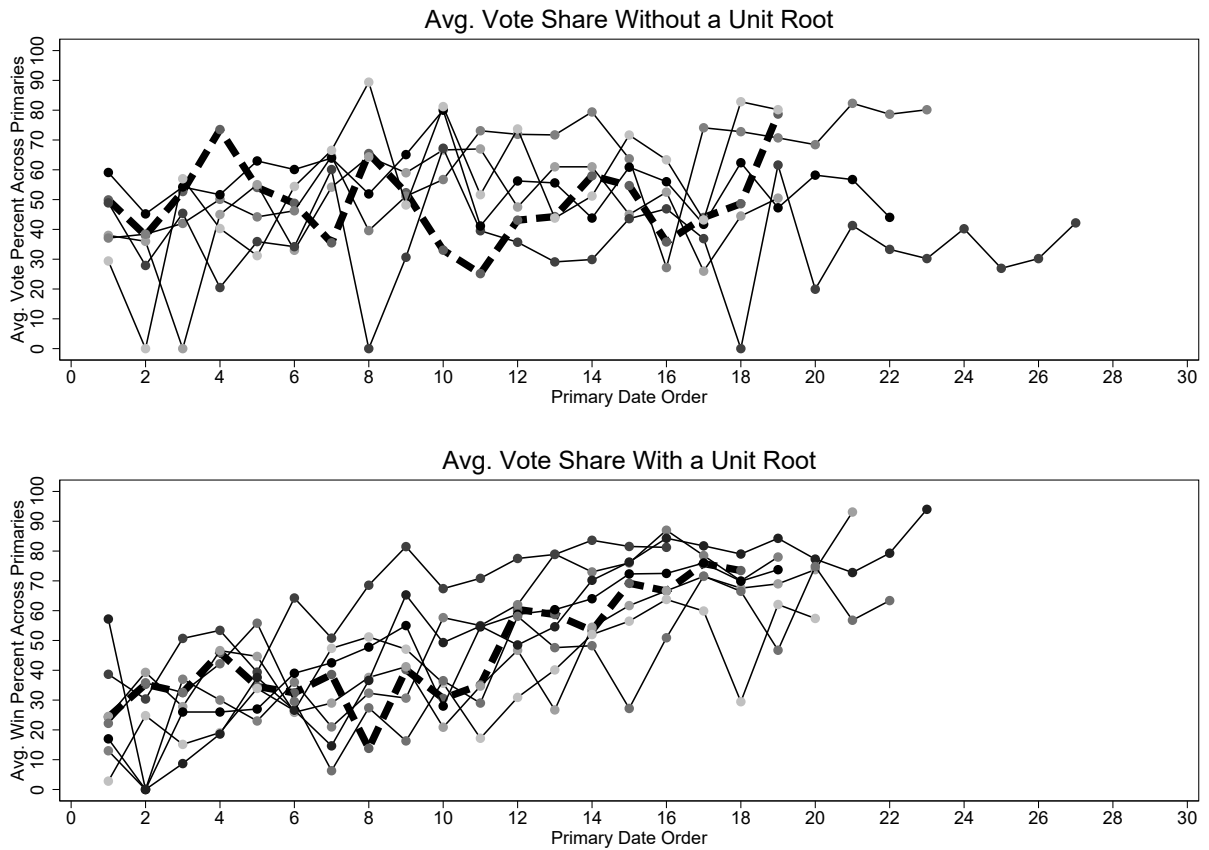
Line graphs in the top panel are average vote share for winning candidates that are not random walks with drift (null hypothesis in augmented Dickey-Fuller test can be rejected at $p < .1$). Winners' average vote share are for Clinton 2016, Obama 2008, Kerry 2004, Dukakis 1988, Mondale 1984, Reagan 1980. Line graphs in the bottom panel are average vote share for winning candidates that are random walks with drift (null hypothesis in augmented Dickey-Fuller test cannot be rejected at $p < .1$). Winners' average vote share are for Trump 2016, Romney 2012, McCain 2008, Bush 2000, Dole 1996, Clinton 1992. Clinton's 2016 vote share is highlighted by the thick dotted line in the top panel, and Trump's 2016 vote share is highlighted by the thick dotted line in the bottom panel.

Figures

Figure 2: The Substantive Effect of Party Conditional on Time for Candidate Exit
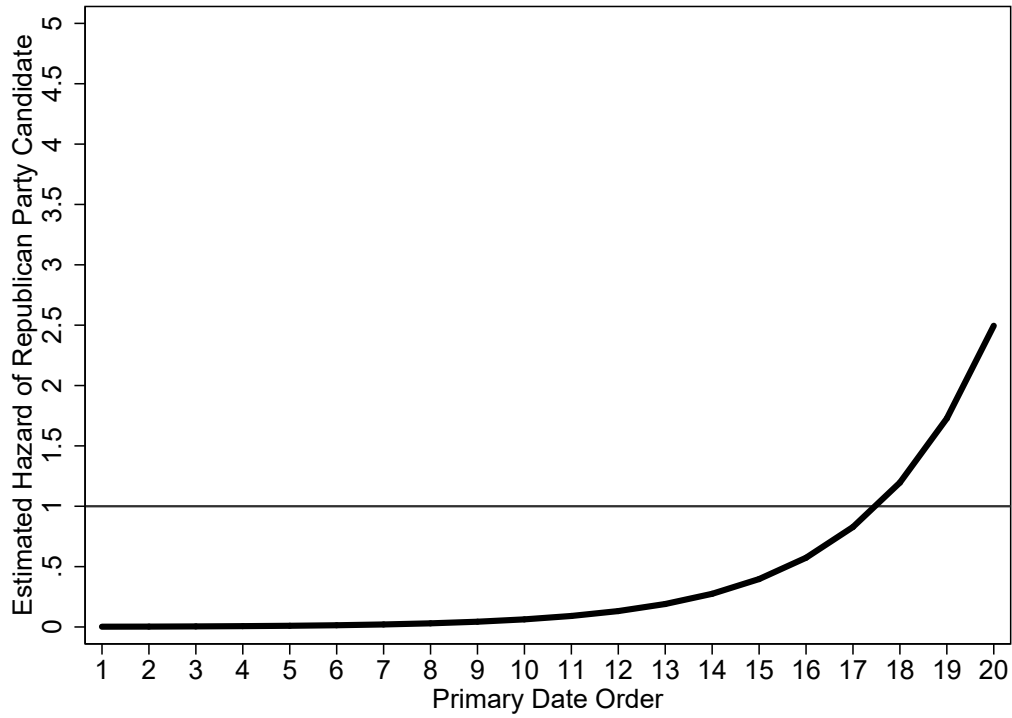
The estimated hazard for party identification across primaries. The effects are taken from model 1 in Table 5. The predicted hazard is shown by the solid line, and values below one indicate the hazard is higher for Democrats, while values above one indicate the hazard is higher for Republicans.

Appendices

Appendix A: Grambsch and Therneau Global/Local Tests—Model 1, Table 5

| Independent Variables	Coefficient	rho	sig.
Main Effects			
Avg. Vote Share	-0.039	-0.245	0.340
	(0.017)		
Avg. Previous Finishes	0.429	-0.124	0.291
	(0.288)		
No. of Candidates	0.056	0.262	0.054
	(0.195)		
Party of Candidate (1= GOP)	-0.220	0.395	0.001
	(0.636)		
Ratio of Primaries to Caucuses	-2.250	-0.232	0.017
	(1.812)	(2.033)	
Percentage of Money on Hand	0.002	-0.017	0.922
	(0.015)		
No. of State Elections Per Day	-0.058	0.187	0.076
	(0.070)		
Super Tuesday, N.H., or Iowa	4.578	0.278	0.002
	(1.523)		
Global Test Chi-squared	20.25; 0.001**		
Number of Obs.	70		
Number of Failures	23		
AIC	140.62		
Wald Chi-squared	40.19; 0.0		

Hazard coefficients with standard errors, Breslow method used for ties. Candidates who did not fail are those who did not exit the race. Rho and significance are the results of the Grambsch and Therneau test of the proportional hazards assumption

Appendix B: Grambsch and Therneau Global/Local Tests—Model 2, Table 5

Independent Variables	Coefficient	rho	sig.
Main Effects			
Candidate Win	-0.563	-0.409	0.0001
	(1.062)		
Avg. Previous Finishes	0.551	-0.231	0.087
	(0.258)		
No. of Candidates	0.059	0.334	0.005
	(0.202)		
Party of Candidate (1= GOP)	-0.251	0.396	0.0004
	(0.673)		
Ratio of Primaries to Caucuses	-1.495	-0.258	0.011
	(1.798)	(2.033)	
Percentage of Money on Hand	-0.0002	0.365	0.187
	(0.013)		
No. of State Elections Per Day	-0.066	0.247	0.029
	(0.063)		
Super Tuesday, N.H., or Iowa	4.785	0.375	0.0
	(1.523)		
Global Test Chi-squared	33.34; 0.00		
Number of Obs.	70		
Number of Failures	23		
AIC	142.642		
Wald Chi-squared	33.73; 0.0		

Hazard coefficients with robust standard errors, Breslow method used for ties. Candidates who did not fail are those who did not exit the race. Rho and significance are the results of the Grambsch and Therneau test of the proportional hazards assumption.

Appendix C: Kaplan-Meier Survival Estimates by Party
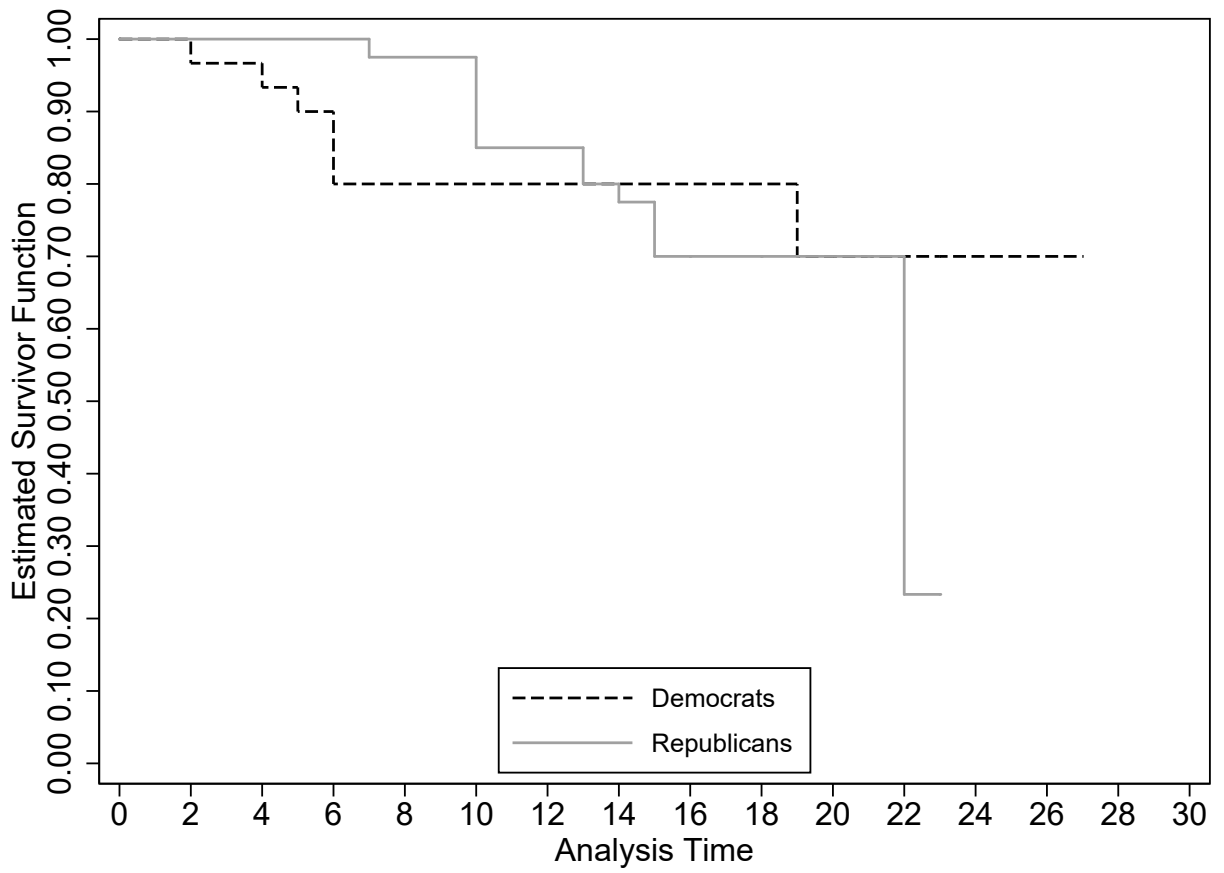
The curves represent the probability of survival until time *t* or beyond.

Appendix D: The Effect of Party and Candidate Success Over Time

Independent Variables	1 OLS	2 Poisson	3 OLS	4 Poisson
Lagged Avg. Vote Share	0.743** (0.047)	0.036** (0.003)	0.664** (0.151)	
Lagged No. of Candidate Wins				0.105** (0.046)
Party of Candidate (1=GOP)	-16.492 (194.941)	-26.613 (29.106)	-6.968 (8.106)	-0.234 (0.460)
No. of Candidates	-0.038 (0.231)	-0.028 (0.044)	-0.236 (0.229)	-0.014 (0.096)
Ratio of Primaries to Caucuses	1.861* (1.014)	0.185 (0.119)	-0.865 (2.411)	0.500 (0.389)
Percentage of Money on Hand	0.194** (0.044)	0.010** (0.004)	0.150* (0.078)	0.028* (0.015)
No. of State Elections Per Day	0.122 (0.135)	0.146** (0.013)	-0.033 (0.173)	0.151** (0.016)
Super Tuesday, N.H., or Iowa	0.302 (1.280)	0.047 (0.159)	0.996 (1.932)	-0.088 (0.175)
Election Cycle, 1980-2016	-0.017 (0.073)	-0.006 (0.006)		
Party x Election Cycle	0.008 (0.098)	0.013 (0.015)		
Party x Lagged Avg. Vote Share			0.215 (0.158)	
Party x Lagged Candidate Wins				0.165** (0.074)
Constant	34.740 (145.115)	8.334 (11.135)	7.940 (8.800)	-2.297** (0.850)
N	1167	1167	419	419
Wald Chi-squared		399.08; 0.0		492.11; 0.0
R-Squared	0.652		0.752	
AIC	9426.175	1745.140	3237.965	734.115

**p<.05, *p<.1; model 1 is an ols regression with clustered standard errors for 70 candidates. The dependent variable is average vote share. Model 2 is a Poisson regression with clustered standard errors for 70 candidates. The dependent variable is the number of states won on a given election day. Model 3 is an ols regression with clustered standard errors for 26 candidates, and the sample is limited only to 2008-2016. The dependent variable is average vote share. Model 4 is a Poisson regression with clustered standard errors for 26 candidates, and the sample is limited only to 2008-2016. The dependent variable is the number of states won on a given election day.