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THE IMPACT OF PRIMARIES ON GENERAL ELECTION OUTCOMES IN THE U.S. HOUSE AND SENATE

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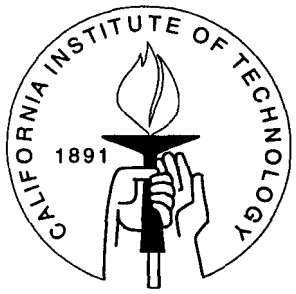

SOCIAL SCIENCE WORKING PAPER 932

June 1995

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Abstract

Theory: We draw on established theories concerning strategic politicians, political learning, and political campaigning to challenge the conventional wisdom that divisive primaries diminish a nominee's chances of winning the general election. We use the concept of "political Darwinism" and introduce three new types of variables that move beyond the unidimensional focus of the impact of primary vote margins on general election outcomes.

Hypotheses: Primary vote margins have no independent impact on general election outcomes, instead, campaign spending in the primary, the mediating impact of time, and the size of the challenger pool are expected to have explanatory power. Methods: Regression analysis of all House and Senate incumbent elections from 1974-1988.

Results: Challengers largely benefit from contested primaries. The challenger who survives a tough primary will be the best campaigner and will have benefitted from the publicity that such a victory may provide. Incumbents, on the other hand, are hurt by the occasional divisiveness that they might face. Furthermore, late primaries tend to strengthen the positive effects of primary elections for challengers and weaken the negative effects for incumbents.

The Impact of Primaries on General Election Outcomes in the U.S. House and Senate

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According to conventional wisdom about electoral politics, candidates who barely survive a close primary are less likely to prevail in the general election. Journalists accept this relationship as a truism.[1] Political scientists have examined the topic more systematically and produced contradictory findings. The relationship is most evident in presidential primaries where researchers have attributed the negative impact of divisive primaries to alienated voters [Kenney and Rice 1987; Lengle 1980; Piereson and Smith 1975; Southwell 1986] and disgruntled activists [Stone 1984, 1986; Buell 1986]. The evidence is murkier for gubernatorial, senatorial, and House primaries where some studies have supported the hypothesized relationship [Kenney and Rice, 1984; Johnson and Gibson 1974; and Bernstein 1977] and others have found mixed or no evidence of the negative impact of close primary elections on general election outcomes [Born 1981; Miller, Jewel, Sigelman 1988; Hacker 1965; Reiter 1979; Westlye 1985; and Kenney 1988].

We argue that previous research on divisive primaries in congressional elections is contradictory and inconclusive because it largely neglects to the potentially **positive** impact of close primaries on the nominee's general election chances. Close primaries are not necessarily divisive. A competitive challenger primary that keeps the attack focused on the incumbent, rather than on intra-party differences, actually promotes the electoral chances of the eventual nominee.[2]

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[1]A Nexis search of the 1994 elections revealed 547 references to "divisive primaries," nearly all of which referred to the negative impact of close primaries. For one counter-example, see Born 1981, 661, note 35. Born cites a *New York Times* article that noted the positive impact of Hugh Carey's 1978 gubernatorial primary on his come-from-behind general election win.

[2]We will use the term "incumbent primary" to refer to intra-party challenges to an incumbent and "challenger primary" to refer to primaries in the incumbent's opposing party.

Serious challenges within the incumbent's party, on the other hand, typically reveal weaknesses that are often exploited in the general election. Thus, the assumption that close primaries are divisive may be accurate for incumbent primaries, but grossly misleading for challenger primaries. This study of all U.S. House and Senate incumbent elections from 1974-1988 provides the basis for understanding the complexity of primary elections by introducing three new types of variables: the number of candidates in the challenger primary, the length of time from the primary to the general election, and campaign spending by primary losers. Incorporating these additional measures allows us to move beyond the unidimensional characterization of "primary divisiveness" as measured by vote margins.

The Conventional View of Primary Divisiveness and Our Reconceptualization

In 1990 Harvey Gantt narrowly lost a North Carolina Senate election to Jesse Helms. The race attracted national attention because it pitted a liberal black candidate against a famous conservative crusader in one of the most costly and bitter Senate races in history. Helms was unopposed in his primary and Gantt finished first in a six-man field with 37.5% of the vote. The second-place finisher, Mike Easley, received 30.2% of the primary vote. But since Gantt did not cross the 40% threshold specified by North Carolina law, he was forced into a runoff with Easley. Easley pressed for a runoff despite Gantt's request that Easley concede the race to help party unity. Gantt won the runoff election with 57% of the vote, but Helms won the general election with 53% of the vote.

This outcome appears to support the conventional view that close primaries hurt a candidate's chances of winning the general election. There are several general explanations for this view. First, a close primary may be expensive, leaving the winner short on funds for the general election campaign. Second, candidates may vigorously attack each other, opening wounds within the party. The short period between the primary and general election may not provide the winner enough time to overcome the resentment among voters who supported primary losers [Southwell 1986; Kenney and Rice 1987; Hacker 1965]. Third, campaign activists may be unwilling to transfer their support from a losing candidate to the nominee, depriving him or her of necessary organizational resources [Buell 1986; Stone 1984, 1986; Miller, Jewell, and Sigelman 1988]. These dynamics of campaign resources, disgruntlement, and negative affect certainly could have cost Harvey Gantt the election.

A closer examination, however, reveals that the hotly contested primary actually helped Gantt. During the Democratic primary, the six candidates refrained from attacking each other, directing their fire toward Helms. During the runoff campaign the two Democratic candidates

still avoided attacking each other, while Helms launched an attack against Easley, who was considered his likely general election opponent. Thus, Gantt entered the general election campaign bearing few scars from primary opponents' attacks and enjoying greater name recognition after the intense media coverage of the primary and runoff. In winning the nomination, Gantt also avoided spending an exorbitant amount, particularly compared to the cost of his general election campaign. Finally, as Gantt entered the general election, he "wielded one unpredictable and powerful weapon: enthusiasm. His primary and runoff wins had galvanized a coalition of traditional Helms opponents, students, and young professionals" [Duncan 1993, 1116]. It seems likely that Gantt would have not developed the organizational base, name recognition, and momentum of his general election campaign if he had been unopposed for the Democratic nomination.

Gantt's experience reveals at least three ways in which a close primary may help a candidate in the general election. First, a difficult primary may provide a "dry run" for a candidate and his or her organization. Volunteers are recruited, fundraising lists established, campaign themes tested, and potential weaknesses are exposed and dealt with during the primary. Second, a close primary receives media coverage which increases the winning candidate's name recognition [Ware 1979]. As Gary Jacobson has shown, successful challengers are the ones who are able to get their message out to the voters [1992, 143]. If the challenger is unopposed in the primary, he or she will probably receive little media coverage until a few weeks before the general election. Third, a "political Darwinism" may occur in a tough primary: the winner will be toughened by the experience and generate new viability and momentum. This boost is especially likely when a candidate exceeds expectations in the primary, as Gantt did in the 1990 Senate race.

Our reconceptualization of the impact of primaries on general election outcomes focuses on the benefits that challengers derive from a close primary election. We do not deny that close primaries may be divisive. However, we argue that the dominant effects in challenger primaries are positive, while incumbents are less likely to reap the benefits outlined above. Incumbents typically have a campaign-tested organization in place that would not necessarily benefit from another election. They do not worry about media coverage as much as challengers. Exceeding expectations is difficult because incumbents are expected to win. Thus, a serious primary challenge to an incumbent is typically a sign of vulnerability, while a contested primary for a challenger may bring many benefits. The next section outlines empirical tests for this hypothesis.

A Model of the Impact of Primary Elections on General Election Outcomes

We test for these contrasting effects of contested primaries by examining all House and Senate incumbents elections between 1974 and 1988.[3] The dependent variable is the **challenger's general election vote**. The central explanatory variables of our model measure the effects of primary elections. Previous work focused narrowly on primary election vote totals, measured alternatively as the difference between the vote percentage of the primary winner and second-place finisher [Piereson and Smith 1975; Bernstein 1977; Lengle 1980], the winner's percentage in both the incumbent and challenger primaries [Born 1981], or the difference between the primary vote for the nominees in the two primaries [Kenney and Rice 1987; Kenney 1988]. We reject the third version because it falsely assumes that challenger and incumbent primaries have the same impact on the general election vote.[4] The first two versions differ only in the

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[3]One methodological concern should be discussed before specifying our model: the potential non-recursive relationship between primary and general election vote. Vulnerable incumbents attract challengers in their own primaries and the opposing party primaries. This increased candidate activity translates into "divisive primaries" (measured as vote margins or totals), which implies a causal relationship that runs counter to traditional expectations. That is, in a regression model explaining general election outcomes, a negative coefficient for the divisive incumbent primary variable may result from the anticipation of a strong showing by the challenger in the general election (which is turn is caused by a scandal, weak economy, poor attention to constituents, etc.). In this manner, a weak incumbent performance in the fall produces, at least in part, the divisive incumbent primary rather than the other way around. The bias obviously runs in the other direction for challenger primaries. Here, the negative bias may wash out any positive relationship between challenger primary vote and general election vote, leading to the false conclusion that no relationship exists between the two variables. If the negative bias is strong enough, it may swamp the positive effects and produce a negative coefficient for the challenger primary vote variable. This result would indicate that a divisive primary--lower primary vote--produces a *higher* general election vote for the challenger.

There are three ways to deal with this problem: ignore it [Hacker 1965; Piereson and Smith 1975; Bernstein 1977; Lengle 1980], use two-stage least squares (2SLS) [Born 1981], or treat the problem as recursive and introduce additional controls for anticipated general election vote [Abramowitz 1988; Kenney 1988]. We opt for the third approach on practical grounds. Ignoring the problem is obviously unacceptable. 2SLS introduces additional bias [Bartels 1991] and is untenable given the nature of our model. The central problem is the absence of any variables that could be used in a first-stage equation. That is, nothing is related to general election vote that is not also related to primary election vote. Therefore, we opt for the more practical solution of modeling the relationship as recursive while using additional controls for expected general election vote. As Kenney [1988] points out, the general election vote cannot literally determine a temporally prior variable; rather the *expected* general election vote introduces potential bias. Therefore, if all the central determinants of general election vote are included as controls, proper inferences can be made about the relationship between primary election variables and the general election vote. Again, we recognize that this solution is second-best, but it is the only workable one.

[4]Abramowitz makes a similar argument about the relative divisiveness measure [1988, 402]. Consider a pair of primaries in which both nominees win with 50% of the vote and another instance in which both nominees are unopposed. The relative measure takes on a value of zero in both instances, however the two contexts are quite different. In the latter case the incumbent is more likely to be a strong position for reelection, while the former reveals an incumbent in trouble. On the other hand, as we argue above, the challenger may actually benefit from the contested primary and be harmed by running unopposed.

relatively small number of primaries with more than two candidates. For our purposes Born's measure [1981] is preferable because we include the size of the primary pool as an additional explanatory variable. Opting for the first measure could falsely attribute explanatory power to the pool size variable (i.e. we have stacked the deck against concluding that our new explanatory variable is significant).

As we argue above, limiting the analysis to vote margins may lead to erroneous conclusions about the impact of primaries on the general election vote. Vote measures are unidimensional and narrow. Close primaries are not necessarily divisive--they may actually help challengers in many ways. To provide a more systematic analysis we propose three additional measures of the impact of primaries on the general election: the size of the challenger's primary pool, the length of time between the primary and the general election, and the campaign spending of the primary losers (see Table 1 for descriptive statistics on our new variables).

(Table 1 about here)

The **number of candidates in the challenger's primary** (independent variables are indicated in bold) has potentially conflicting effects on general election vote. According to traditional theory, primaries with a greater number of candidates are likely to be more "divisive," with the nominee winning a lower percentage of the primary vote. As a result, this divisiveness theoretically produces a negative relationship between challenger primary pool size and general election vote. The first part of this relationship obviously holds, but somewhat surprisingly, the second does not. For example, the average winning percentage in the primary decreases from 64.4% with two candidates to 32.2% with six or more candidates. But, the average general election vote for the challenger primary winner increases from 34.6% to 43.2% for these same types of primaries. The positive relationship could be explained by the reverse causation outlined above: vulnerable incumbents attract multiple challengers, and anticipated votes therefore influence the size of the challenger pool. But as we show below, the size of the primary pool exerts a strong and positive effect on the challenger's general election vote in a fully-specified multivariate model.

Previous work has overlooked this important characteristic of primaries. While the occasional bloody primary involving five or six candidates divides and weakens the challenger's party, this type of primary is clearly the exception. The most comprehensive study of House primary elections found that,

". . . more than 85 percent of my questionnaire respondents indicated that the incumbent was an issue in their primary. In more than half of the cases, everyone took on the incumbent. He or she was essentially the only issue; attacking the incumbent was the only strategy" [Maisel 1986, 82]. With the challenger primary focusing on the incumbent, it makes sense that the more

candidates who run, the greater the damage inflicted on the incumbent. Given this reconceptualization, we anticipate that the size of the challenger pool should exert a strong, positive effect on challenger general election vote.

In assessing the effects of primary elections, a reliance on primary vote shares is also problematic because these effects may be mediated by the length of time between the primary and the general election. It is possible that this period of time could either strengthen or weaken the effects of primary divisiveness. The latter argument suggests that if a competitive challenger primary gives a boost to the eventual nominee (as hypothesized above), this boost will be greater if the primary takes place only a month before the general election than if the primary is held during the late spring or early summer. Likewise, in an incumbent primary any negative effects of greater competition will be greater if the primary is held closer to the general election. On the other hand, a lengthy period between the primary and general election could strengthen the effects of primary competition. If a competitive challenger primary occurred long before the general election, the nominee would have more time to address any weaknesses that arose during the primary campaign. For an incumbent, an early primary gives any disgruntled primary opponents more time to campaign against and undermine the incumbent's general election efforts. We explore these alternatives by specifying a variable, **gap**, that counts the number of days between the primary and the general election. We then interact this variable with the nominee's percentage of the primary vote for both the incumbent and challenger primaries (**challenger gap** and **incumbent gap**). These two variables capture how the period between the primary and the general election may mediate the effects of primaries on the nominees' general election fortunes.

Finally, while the pool size and gap variables provide important additional information about the primary election, they are relatively crude indicators. Campaign spending is widely regarded as one of the best indicators of the strength of a candidate's campaign [Jacobson 1980, 1990; Green and Krasno 1988, 1990]. Thus, we include a measure of **losing candidates' total spending** in the challenger's primary and in the incumbent's primary (our analysis with these two variables extends only from 1980-1988).[5] These variables reveal the limitation of vote margins as an indication of primary divisiveness. All primaries in which the nominee receives 60% of the vote are not the same. In general, if the losing candidates mount feeble, underfinanced campaigns, the vote share measure may overstate the level of divisiveness. But if the primary losers make a strong and well-financed challenge to the primary winner, the vote share measure may understate the primary's divisiveness. However, we expect these variables to have a different

[5]These variables are measured in thousands of 1982 dollars (unlogged). We do not log the primary losers' spending because spending in primaries rarely reaches the point of diminishing marginal returns.

impact in the incumbent and challenger primaries. For the incumbent, the more money spent by the losers, the higher the challenger's vote in the fall (because most of this money will be spent attacking the incumbent). For challengers, the picture is more complex. On the one hand, money spent by the losers is mostly directed at the incumbent [Maisel 1986, 82], which should help the eventual winner of the challenger primary. On the other hand, some of the money may be spent to attack the nominee, and a hotly contested primary may force the nominee to spend valuable resources that will be needed for the fall campaign. Thus, on balance, we expect incumbent losers' spending to have a strong and positive impact on challenger's general election vote, and challengers' losers spending to have little or no impact.

To summarize, we measure the effects of primary divisiveness by going beyond the traditional reliance on primary vote shares. We propose five new variables for assessing divisiveness: the size of the primary pool; the gap between Election Day and the incumbent's and the challenger's primary interacted with primary vote; and the total campaign spending by losing candidates in the incumbent's and challenger's primaries. The inclusion of these measures will provide a more complete picture of how primaries affect general election outcomes. We also expect that after including these new variables, the traditional measures of primary divisiveness will exert no independent effect on general election vote.

This analysis also requires controls for other influences on general elections that have been established in previous models of congressional elections. We use three groups of control variables. First, we include a measure of the **normal vote** that controls for the long-term partisan characteristics of each state and district. We operationalize the variable as the average of the votes received by the challenger's party in the presidential, senate, house, and gubernatorial races in the constituency (state or district) during the previous six years. Accordingly, we expect this variable to be positively related to the challenger's general election vote. This measure is a great improvement over the typical measure of challenger's party strength (vote of the challenger's party in the previous election [Jacobson 1980, 1990; Green and Krasno 1988, 1990; Kenney 1988; Born 1981]). Second, we include two measures of short-term national forces on general election outcomes: the **party** of the incumbent (scored 2 for a Democratic incumbent, and 1 for a Republican) and the **change in real disposable income**, operationalized as the change in state-level real disposable income from the previous year. We expect real income change to be negatively related to the challenger's vote.[6]

A third group of variables controls for short-term, candidate-specific effects. These

[6]Initially we coded versions of this variable interacted with a dummy for the "in party" (the president's party) and the "out party." However, given the divided control of government in 10 of the 14 years of this study, the simple incumbency-based hypothesis makes more sense.

variables are expected to have a significant, positive effect on the challenger's general election vote. The first of these variables is the **quality of the challenger** in the general election, which ranges from 4, for an experienced challenger, to 1, for a hopeless or experience-seeking amateur [see Canon 1990, for further discussion of this measure]. Another variable equals 1 if the incumbent has been involved in a **scandal** during the previous term; the variable equals 0 otherwise. In the House models, we include a dummy variable for first-term incumbents, to capture the **sophomore surge** effect. One other short-term variable, **previous incumbent's vote**, is expected to have a negative impact on challenger vote.

To control for the effects of campaign expenditures, we use measures of both **incumbent and challenger campaign spending**. Following Green and Krasno [1988, 1990] and Jacobson [1990], we use 1982 dollars to control for inflation, take the logs of spending to capture the diminishing marginal returns, and add $5000 to both incumbent and challenger spending to make the transformation less severe. We expect that increased challenger spending will improve the challenger's general election performance. Finally, we follow Abramowitz's suggestion [1988, 395] of using *Congressional Quarterly*'s October rating of general election expectations as an additional control. The variable ranges from 1 (safe incumbent) to 5 (leans to the challenger).[7] This measure is an especially conservative control for our purposes because an October measure would obviously include the effects of any fallout (positive or negative) from the primary election. If the primary election variables remain significant, despite the inclusion of this control, we can be confident that we have modeled an important relationship. We recognize that this method does not "solve" the simultaneity problem, but it is the most workable and practical approach. The only bias that remains is if candidates base their decision to enter a primary on the basis of variables other than those we have included as controls, *and if these additional factors are also systematically related to the general election vote*.

Empirical Results from House and Senate Elections

House Elections

[7]One minor wrinkle in this coding scheme is that *CQ*'s rating of elections changed from a 5-point to a 7-point scale in 1982. The previous scale included safe Dem., Dem.-favored, toss-up, Rep.-favored, safe-Rep. The 7-scale expanded the "favored" category to "favored" and "leans." Our scale transforms the partisan scale to an incumbency-based scale and then creates a new intermediate category to accommodate the 5-point scale that was in effect from 1974-1980. Thus our complete scale is: 1- safe incumbent, 2 - inc. favored (1982-88), 2.5-inc favored (1974-1980), 3 - leans inc., 4 - toss-up, 5 - leans to the challenger (1982-88), 5.5- leans to the challenger (1974-80). The 2.5 and 5.5 positions are a reasonable interpolation because they include cases that would have been to either side if *CQ* had used the 7-point scale before 1982. The alternative is to collapse the 7-point scale into a 5-point scale, but valuable information is lost with this procedure.

In analyzing both House and Senate races, we examine three alternative models of the effects of primary campaigns on general election outcomes. The first specification serves as a baseline. It includes the traditional primary vote measures [Born 1981], as well as the other control variables commonly found in models of congressional elections. Our second model expands the baseline model by adding the measures of primary pool size and the gap between primary and general election. The last model adds the two measures of campaign spending by losing candidates in the incumbent and challenger primaries.[8]

The results of the House models are reported in Table 2. The baseline model produces coefficients that are nearly all significant and in expected directions. The only variable that fails to achieve significance is real income change. This may be due to the relatively crude nature of the measure (which is specified at the state, rather than district-level). Other variables show effects that are consistent with previous work. A high quality challenger may be expected to receive 2.3% more of the vote than an amateur (.58 * 4). A challenger running in a district in which the incumbent received 55% of the vote in the previous general election may expect 3.75% more of the vote than one where the incumbent received 80% of the previous vote. Incumbent scandals add about 5% to the challenger's vote, while those unfortunate enough to run into the "sophomore surge" lose nearly 2%. Challenger spending is one of the most important variables in the model; a challenger who spends $500,000 receives 7.4% more of the vote than one who spends $50,000.

(Table 2 about here)

The most interesting results for our purposes are significant coefficients for the two primary vote variables. Incumbent primaries have the negative effect that is predicted by the divisive primary literature: challengers facing an incumbent who barely survives a primary with 50% of the vote will receive 1.6% more of the general election vote than they would against an incumbent who was unopposed in the primary. On the other hand, challengers appear to be helped by "divisive" primaries. Those who squeak by with 50% receive 1.2% more of the

[8]There are many potential methodological problems with pooled time-series data. Such models can be cross-sectionally correlated, heteroskedastic, and time-wise autoregressive. However, we have strong a priori reasons to discount these possible sources of inefficient estimates. The probability of serial correlation is minimized in Senate elections by the six-year election cycle. Also, the probability of heteroskedasticity was minimized in our analysis by transformations of some variables. For example, change in income was used rather than absolute levels, and model adjustments were made to account for difference in state sizes in the Senate models. While conclusive statistical tests cannot be conducted for these problems due to the brevity of each state or district's time series, examination of the residual plots did not produce any evidence of first-order serial correlation or heteroskedasticity. Also, we include dummy variable for each year (except 1988) to control for any national tides that were peculiar to a given election. The coefficients for the year dummies are not of substantive interest and are therefore not reported.

general election vote than those who are unopposed. While this positive effect is not large, it runs counter to the conventional wisdom. However, we argue that this anomalous effect is an artifact of an under-specified model. Once the additional primary variables are added, the challenger primary vote exerts no independent impact on the general election vote.

Our second model, which also includes all House races involving an incumbent between 1974 and 1988, adds four additional measures of the impact of primaries on the general election: the number of viable candidates in the challenger's primary (we only include candidates who receive at least 5% of the primary vote to exclude frivolous candidates), the number of days between the primary and general elections, and the interaction between the number of days and the primary vote for the incumbent and the challenger. Coefficients for the variables not related to primary elections are virtually unchanged from the baseline model. Of the two original measures of primary elections, the incumbent primary vote margin remains significant and actually increases in size by about 50%. A challenger facing an incumbent who won his or her primary with 50% of the vote receives 2.45% more of the vote than one who faces an incumbent who was unopposed in his or her primary. The challenger primary vote variable now has the positive sign predicted by the divisive primary literature. But, the coefficient does not approach statistical significance.

Among the new measures, only the size of the challenger's primary pool is significantly related to the challenger's general election vote. For each additional candidate in the challenger's primary, the winner receives about 1% more of the general election vote. Thus, the survivor of a six-candidate field can expect nearly a 5% boost in the general election. This "political Darwinism" provides strong confirmation of Maisel's findings cited earlier [1986]. Because most primaries focus their attention on the incumbent, the greater the number of candidates, the greater the damage inflicted on the incumbent. This relatively strong effect may also reflect political learning [Hershey 1984] and media coverage. Candidates who win a hotly contested primary have gained valuable campaigning skills and organizational strength. Furthermore, challengers who are unopposed in primaries may be largely ignored by the media until shortly before the general election. Those in contested primaries will receive additional coverage and some momentum heading into the fall.

The final model provides the most comprehensive test of the impact of primaries on general elections. The two variables added in Model 3--spending by the losing candidates in the challenger and incumbent primaries--are the best measure of the strength of the primary campaigns. Again, the overall model remains quite stable, with only minor changes in the magnitude of most of the coefficients. The three exceptions are party and incumbent expenditures, which are no longer significant, and the sophomore surge variable, which drops by

about a third. Given that this model covers a different period (1980-1988), its stability is remarkable. In this fully-specified model, the traditional measures of primary divisiveness wash out entirely: neither the incumbent primary vote nor the challenger primary vote have an independent impact on general election vote.

Our new measures demonstrate that primary elections have an impact on general elections that are far more complex than previously demonstrated. First, the number of candidates in the challenger's primary continues to exert a sizeable and significant effect on general election vote, adding 1% to the challenger's vote for every additional candidate. Second, spending by losers in the incumbent's primary also has a significant effect. The challenger's general election vote increases by 1.14% for every additional $100,000 spent by the incumbent primary losers. This finding, coupled with the significant impact of the incumbent's primary vote in models 1 and 2, support our argument that incumbents are generally hurt by contested primaries, while challengers are actually helped.

The length of time between the primary and general elections is one remaining ace up the candidates' sleeves. A primary closely preceding the general election can help both incumbents and challengers, but for different reasons. Table 3 compares a number of hypothetical contested and uncontested primaries. The negative effects of divisiveness on incumbents' general election fortunes are greater when the primary precedes the general election by a lengthy period of time. When compared to an uncontested incumbent primary 200 days before the general election, a highly contested incumbent primary at the same time boosts the challenger's general election vote by about 5%. When the primary occurs 30 days before the general election, the challenger's general election vote rises by 3.67%. Consequently, the negative effects of divisive-ness in incumbent primaries are weaker when the primary is held in the fall. After a late primary, disgruntled primary opponents of the incumbent may have less time to campaign and mobilize against the incumbent.

(Table 3 about here)

Challengers may also benefit from late primaries. When a contested challenger primary is compared to an uncontested one, the positive effects of divisiveness are always greater for primaries that occur close to the general election. Early primaries, in contrast, appear to provide a smaller boost for challengers. This pattern makes intuitive sense. The momentum from a convincing primary win can easily help a challenger's general election campaign if the primary occurs during the fall. After an early primary win, in contrast, any momentum may dissipate before the general election campaign begins.

Overall, the overwhelming impact of contested primaries on the challenger's general election vote is positive. When compared to the winner of an uncontested early primary, a

challenger who defeats five other candidates in a late primary will receive a 9-point boost in the general election. This impact is large enough to have turned 527 losers into winners during the period of our study.

Senate Elections

The results for U.S. Senate elections from 1974-1988 are presented in Table 4. We find that many of the variables have similar effects in Senate and House elections—the state's normal vote, challenger quality, scandals, challenger expenditures, and expectations about the general outcome. But, the results are generally weaker than the findings for House elections. All of the variables, particularly those related to primaries, reach a much lower level of significance. The smaller t-statistics result at least partially from the smaller number of races used in estimating the models for the Senate (228 cases, versus 2576 for the House). The smaller data set makes it more difficult to uncover the effects of primaries on general election outcomes.

(Table 4 about here)

In Model 1 for the Senate elections, the incumbent's primary vote is positive, and not statistically distinct from zero. Notice, however, that the estimated effect of the challenger's primary vote is negative and statistically significant—just as in the House results. Divisiveness in the challenger's primary again helps the nominee's general election chances. A challenger winning a tough primary contest (50%) would receive 2.15% more of the general election vote than a challenger unopposed in the primary. This effect is almost twice that found in the House model.

Surprisingly, in Model 2 for the Senate elections the estimated effects of both the challenger and incumbent primary vote totals increase in magnitude, and keep the same sign. However, while the challenger's primary vote drops to statistical insignificance, the incumbent's primary vote becomes significant. Our new primary variables also differ in the Senate model when compared to the House. Here, the number of viable candidates in the challenger's primary has little effect on the general election outcome, a stark contrast to the House results. Consequently, it is difficult to make a case for "political Darwinism" in Senate elections.

The gap between the primary and the general election appears to exert a similar effect in the House and Senate, at least for incumbents. In Model 2 for the Senate, the gap and its interaction with incumbent primary vote produce significant coefficients. The substantive effects of these variables are similar to those reported in Table 3 (for the House). In a primary occurring 30 days before the general election, a Senate incumbent taking 50% of the primary vote will win 5.3% more of the general election vote than an incumbent facing no primary opposition. If the

primary occurs 200 days before the general election, the incumbent facing a divisive primary will win 3.2% less of the general election vote than the incumbent with no primary opposition. Again, primary divisiveness appears less harmful for incumbents if the nomination contest occurs close to the general election.

Unfortunately, including primary losers' spending (Model 3) cuts our sample by 40% because reliable data on these expenditures exist for only the 1980-88 period. Consequently, none of the estimated effects of primary races on Senate general election outcomes are statistically significant in Model 3. The estimated effects of primary loser expenditures are both positive, as in the House models, but here both are also statistically insignificant.

Discussion and conclusion

This research provides three significant advances over previous work on the impact of congressional primary elections. First, this paper is the most comprehensive study of congressional primary elections ever conducted. For example, Richard Born's analysis covered 16 years of House elections, but did not include Senate elections. Also, the last year in his study was 1976; clearly an update is needed. Kenney's study is more recent and covers Senate elections (from 1974-1984), but his House model only includes the elections of 1984.

Second, despite the massive evidence that money is crucial for success in congressional elections, no comprehensive studies of the impact of primaries have included campaign spending as a control. Further-more, we include here for the first time the money spent by the losers in challenger and incumbent primaries as an explanatory variable.

Third and most importantly, this study moves beyond the unidimensional focus on vote margins and vote totals in assessing the impact of primaries on general elections. This focus led previous scholars to conclude erroneously that primaries either hurt congressional candidates, or had no effect. We conclusively show that incumbents are hurt and challengers are helped by hotly contested primaries. Incumbents bear the brunt of attack in both sets of primaries, so challengers, in general, come out ahead. A political Darwinian argument also applies. The challenger who survives a tough primary will be the best campaigner and will have benefitted from the publicity that such a victory may provide. In addition, a primary win can provide the challenger's campaign organization with a test run for the general election, and give the organization an more accurate understanding of the skills and resources needed to win in November. An overwhelming primary win can also provide a previously unknown but strong challenger with concrete evidence of his or her strength, which in turn

assists with fundraising.

Contested primaries obviously may hurt specific candidates. The campaign trails are littered with the remains of campaigns that were ripped apart by intra-party divisions. Candidates may be weakened by vicious attacks from within the party, and their campaign war chests may be decimated by the financial demands of a tough primary battle. We do not deny that these debilitating primaries occur. Rather, we argue that they are the exception rather than the rule. Our findings show that challengers largely benefit from contested primaries. Incumbents, on the other hand, are hurt by the occasional divisiveness that they might face. Furthermore, late primaries tend to strengthen the positive effects of primary elections for challengers and weaken the negative effects for incumbents.

These findings lead to a different perspective on the many ways that divisive primaries can influence general election campaigns. The winners of these primaries do not enter the general election campaign with a clean slate. But, neither do they always begin the fall campaign bearing scars from a debilitating struggle. They can enter the fall race with more publicity and campaign experience than candidates from easy primary races. Students of general election campaigns would therefore be well-advised to incorporate the complex effects of primary campaigns into their studies.

Table 1. New Measures of the Impact of Primaries
on General Election Outcomes, Summary Statistics

	Number of candidates in challenger primary	Number of days between primary and general election	Campaign spending			
			Incumbent primary winner	Incumbent primary losers	Challenger primary winner	Challenger primary losers
Mean	1.69	123.71	239,896	13,814	109,501	17,715
Standard deviation	1.00	57.99	199,799	50,474	162,260	53,445
Minimum value	1	28	6,068	4,156.28	4,156	4,156
Maximum value	8	245	3,068,221	1,188,857	2,337,537	974,648
Number of cases	2,599	2,599	2,597	1,638	2,597	1,638

Table 2. The Impact of Primaries on Challengers' General Election Vote,
U.S. House Elections, 1974-1988
(standard errors)

Independent variables	Model 1	Model 2	Model 3
Intercept	-3.86 (2.92)	-6.66* (3.89)	-2.87 (5.00)
Normal vote	.12*** (.017)	.12*** (.018)	.18*** (.022)
Party	1.25*** (.27)	1.18*** (.27)	.27 (.32)
Previous Incumbent Vote	-.15*** (.012)	-.15*** (.012)	-.14*** (.015)
Change in Real Income	-.051 (.049)	-.051 (.05)	-.058 (.067)
Challenger Quality	.58*** (.12)	.54*** (.122	.60*** (.15)
Scandal	5.09*** (.93)	5.07*** (.92)	5.41*** (1.10)
Sophomore Surge	-1.87*** (.33)	-1.87* (.33)	-1.25** (.41)
Logged Incumbent Spending	.48* (.20)	.47** (.20)	.21 (.25)
Logged Challenger Spending	3.55*** (.11)	3.51*** (.11)	3.21*** (.13)
October CQ forecast	.84*** (.13)	.81*** (.13)	.51*** (.14)
Challenger Primary Vote	-.024*** (.0057)	.015 (.016)	.0007 (.020)
Incumbent Primary Vote	-.032** (.011)	-.049* (.025)	-.027 (.034)
Challenger Primary Pool Size		.96*** (.25)	1.00*** (.32)
Gap		-.0097 (.018)	-.028 (.023)
Incumbent Primary Vote * Gap		.0015 (.017)	-.016 (.022)
Challenger Primary Vote * Gap		-.0024 (.0099)	.018# (.012)
Inc. Primary Losers' Spending			.0114** (.0035)
Chal. Primary Losers' Spending			.000082 (.0030)
Number of observations	2576	2576	1627
SEE	6.26	6.24	5.94
Adj. R-square	.63	.63	.64

*** p < .001; ** p < .01; * p < .05; # p < .10

Table 3. Predicted General Election Vote for Challengers,
Given Varying Levels of Primary Competition and Spending

Type of primary	Spending by primary losers	Primary vote percentage of primary winner	Number of days between the primary and general elections	Number of candidates in challenger's primary	Predicted general election vote of challenger	Impact of primary on the challenger's general election vote, given the specified conditions
Incumbent primary	$0	100	30	1	34.34	-
	$50,000	50	30	1	35.16	+.82
	$300,000	50	30	1	38.01	+3.67
	$0	100	200	1	29.92	-
	$50,000	50	200	1	32.10	+2.18
	$300,000	50	200	1	34.95	+5.03
Challenger primary	$0	100	30	1	34.34	-
	$50,000	50	30	2	35.07	+.73
	$300,000	50	30	6	39.09	+4.75
	$0	100	200	1	29.92	-
	$50,000	50	200	2	29.12	-.80
	$300,000	50	200	6	33.14	+3.22

Note: Entries are based on the coefficients reported in Model 3, Table 2. Calculation of predicted general election vote for incumbent (challenger) primary winner assumes that only one candidate entered the challenger (incumbent) primary.

Table 4. Impact of Primaries on Challengers' General Election Vote,
U.S. Senate Elections, 1974-1988
(standard error)

Independent variables	Model 1	Model 2	Model 3
Intercept	35.8*** (5.57)	25.0*** (8.36)	34.7*** (10.9)
Normal vote	.143** (.061)	.144** (.061)	.014 (.067)
Party	1.17 (.923)	1.27 (.922)	.970 (1.07)
Change in real income	.046 (.070)	.010 (.073)	-.068 (.072)
Challenger quality	1.08** (.460)	1.00* (.460)	.417 (.549)
Scandal	7.51** (2.95)	8.63*** (2.99)	8.05*** (3.36)
Logged Incumbent Spending	-.162 (.524)	-.148 (.524)	-.529 (.508)
Logged Challenger Spending	2.60*** (.371)	2.55*** (.374)	2.79*** (.505)
October CQ forecast	2.42*** (.457)	2.41*** (.459)	2.82*** (.661)
Challenger Primary Vote	-.043* (.020)	-.062 (.049)	.057 (.057)
Incumbent Primary Vote	.006 (.032)	.136# (.071)	-.128 (.087)
Challenger primary pool size		-.064 (.426)	.256 (.421)
Gap		.102* (.051)	-.016 (.060)
Incumbent Primary Vote* Gap		-.001* (.0006)	.0006 (.0007)
Challenger Primary Vote* Gap		.0002 (.0004)	-.0006 (.0004)
Inc. Primary Losers' Spending			.00002 (.00003)
Chal. Primary Losers' Spending			.00003 (.00002)
Number of observations	228	228	136
SSE	6.31	6.28	5.43
Adj R-square	.59	.60	.67

*** p < .001, ** p < .01, * p < .05, # p < .10
Note: Dummy variables for election years are not presented here.

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