

Competition in Congressional Primaries

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Abstract

Competition among candidates or parties is a necessary condition for democracy. But who counts as a candidate and what counts as competition? The decline in close general elections has sparked new interest in the quality of primary competition, yet scholars have examined this question almost exclusively through the lens of the ballot. This paper departs from the use of vote-share measures of competition and instead draws on preelection campaign receipts in U.S. House primaries from 1980 to 2020. When primary competition is measured with receipts, it looks markedly worse than ballot-based indicators suggest. Moreover, the difference between vote-share and fundraising measures is largest in primaries that are held up as the bright spots of competition. In open-seat races—the best-case scenarios—the likelihood that a race is competitive decreases by 15 percentage points with the fundraising measure, and the effective number of candidates decreases by nearly half in safe districts and one-third in competitive districts. The disparity between vote-share and fundraising measures is driven largely by candidates who have little chance of winning. The findings illustrate that our conclusions about the health of American democracy are closely tied to our measures.

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Competition among candidates or parties is a necessary condition for democracy (Dahl 1956, 1971; Key 1949; Schlesinger 1966; Schumpeter 1942). But who counts as a political candidate and what counts as political competition? The competitive struggle for the people’s vote is so central to our understanding of democratic government that the makeup of the ballot and the outcomes of elections have, mostly implicitly, come to dominate our depictions of the state of electoral competition. Political scientists have relied on vote totals and electoral margins to examine core questions in the study of American politics and representation, such as whether citizens are able to hold their elected officials accountable and whether elections are living up to democratic ideals (i.e., Achen and Bartels 2016; Ansolabehere et al. 2001; Bonica and Cox 2018; Canes-Wrone et al. 2002; Fraga and Hersh 2018; Hirano and Snyder 2019).¹ It is almost exclusively through the lens of the ballot that scholars have evaluated the nature and quality of competition in the United States over the short and long run.

For the past few decades, academics have raised concerns about changes in competition as well. A series of influential articles in the 1970s first called attention to the “vanishing marginals” and the rise in incumbent vote share that unfolded over the late 20th century.² By several indicators, competition has diminished, but the most commonly used measure is the decline in close electoral contests—those won with 55 or 60 percent of the vote. By the 60 percent threshold, about 40 percent of seats were in the marginal range between 1952 and 1964, but this figure has decreased steadily since, reaching exceptionally low levels of 12 and 14 percent in 2002 and 2004, respectively (Abramowitz et al. 2006; Jacobson 2006). Congressional Quarterly’s estimates of House seats in play each cycle illustrate a similar pattern, with the number falling from more than 80 competitive seats in 1982 to around 40 in 2004. The 2018 elections were a high point in the modern era, with 75 seats rated as toss-up or leaning to one party by Cook Political Report, but the historical trend in levels of competition has been a downward one.

¹Others have instead examined the impact of competition on a host of political outcomes, such as voter turnout, political engagement, and government responsiveness (i.e., Ansolabehere et al. 1992; Cox and Munger 1989; Gimpel et al. 2007; Griffin 2006; Lipsitz 2011; Patterson and Caldeira 1983, see also Gerring et al. 2015).

²There is a large body of research on the decline in close elections and the rise in the incumbency advantage (i.e., Abramowitz 1991; Alford and Hibbing 1981; Ansolabehere et al. 1992; Cox and Katz 1996; Erikson 1971, 1972; Ferejohn 1977; Fiorina 1977; Gelman and King 1990; Jacobson 1987; Mayhew 1974; Tufte 1973, but see Jacobson 2015 for a recent update).

The decline in close general elections has amplified the normative importance of primaries and sparked new interest in the quality of primary competition. Lawmakers are increasingly likely to be elected from safe districts, making the primary more decisive and the general election less so.³ Hirano and Snyder (2019) provide the most comprehensive study of primaries to date. They use four different measures of competition: 1) the percentage of primaries that were contested; 2) the percentage of primaries where the winner received less than 57.5 percent of the vote; 3) the number of candidates in the race; and 4) the votes cast for all losing candidates as a percentage of the total votes (Hirano and Snyder 2019, 39-40). They find that, across primaries from 1900 to 2016, the level of competition is highest in open-seat primaries and in constituencies with a partisan advantage. Their view of primaries is an optimistic one, and the authors conclude that primaries contribute to the electoral system by selecting high-quality candidates and by allowing candidates to compete in constituencies that would otherwise lack competition.

This paper similarly examines competition in primary elections but adopts a different starting point. I depart from the use of ballot-based measures and instead draw on preelection campaign receipts to evaluate the quality of primary competition through the lens of fundraising. A measure of fundraising captures the relative strength of candidates during the campaign cycle in a way that post-hoc vote totals do not. While vote-share measures can reflect which races were seen as competitive, candidates often fare better or worse than expected. More troubling is that ballot-based measures are likely to provide a more optimistic view of primary competition than a measure that incorporates resource disparities across candidates. I leverage preprimary receipts in U.S. House primaries from 1980 to 2020 to construct new measures of competition based on fundraising totals. The first is a binary indicator of whether the top fundraiser raised less than 57.5 percent of preprimary receipts or whether her fundraising margin was within 20 points of the second highest fundraiser. The second is a measure of the effective, rather than the actual, number of candidates in the race calculated with preprimary receipts.

³Whereas 42 percent of House members were elected from safe districts in the 1980s, this figure rose to 68 percent in the 2010s. Among winners in open seats, 50 and 64 percent came from safe districts in the 1980s and 2010s, respectively.

When the quality of primary competition is viewed through a fundraising lens, it looks markedly worse than recent research suggests. The difference between on-ballot and fundraising measures of competition is largest in open-seat primaries, or the primaries that are often held up as a bright spot in an era of declining general election competition—i.e., although incumbents rarely face competitors, they must run against multiple high-quality contenders in order to be selected initially. The likelihood that an open-seat primary is competitive decreases by 15 percentage points with the fundraising measure. The difference between the number of candidate measures calculated with vote-shares and receipts is also largest in open-seat primaries, with the effective number of candidates decreasing by nearly half in advantaged-party open seats and by nearly one-third in parties-balanced open seats. These patterns remain when looking at open-seat primaries where the previous primary or general election winner won by a narrow margin. Finally, I show that the disparity between vote-share and fundraising measures is driven largely by long-shot candidates who have little chance of winning.

The results provide empirical support for the prevailing narrative that electoral competition is not as vibrant as we might hope. In addition, they shed new light on the ways in which vote-share measures may differ from how the state of competition is viewed prior to the election. Ballot-based measures of candidate performance provide one window into elections, but scholars have given much less attention either to preelection indicators of competition or even to broader questions about how conventional measures shape our picture of the quality of primary competition. Grappling more directly with resource disparities across candidates is particularly important in light of the outsized role that fundraising plays in running for and serving in elected office in the current political context. While vote-share measures have long been the gold standard in studies of electoral competition and democratic representation, the findings suggest that we should more seriously consider how our conclusions about the health of American democracy are closely tied to our measures.

Measuring Electoral Competition

Political scientists in the U.S. context have given little attention to how candidates and competition could or should be measured, but previous studies typically limit their analyses to those who appear on a ballot. One clear strength of ballot-based measures is that the data collection is straightforward. Candidates are on the ballot, votes are tallied, and some win and others lose. Vote totals also have theoretical appeal because they have the most direct consequences for the election of officeholders and the makeup of legislative institutions. Yet the ballot-centered lens has limitations as well. Ferejohn (1977, 166) alluded to the imperfections of vote-share measures of competition over four decades ago, noting that they have “the defect of suggesting that what might be called the vulnerability of a seat is related in some way to vote margin.” Vote-share measures can indicate which races were likely viewed as competitive during the campaign cycle, but only after the election has occurred. Moreover, vote totals do not always reflect how candidates were perceived prior to the election. Upset victories are an obvious example, but candidates often outperform or underperform expectations.

The influence of money in American elections makes fundraising an especially appropriate way to measure competition. Campaign receipts are a key indicator of vulnerability and strength prior to the election, and when candidates raise money, the media and political observers take note. In fact, money is perhaps the single most valuable resource for candidates who want to win.⁴ Candidates who raise the most win the primary 92 percent of the time; if we exclude unopposed candidates, the top fundraiser wins 80 percent of the time.⁵ Fundraising is at least as good a predictor of outcomes as previous political experience, the most widely used measure of candidate quality (i.e., Jacobson 1989).⁶ Fifty-two percent of experienced nonincumbents won the primary, compared to 85 percent of nonincumbents who raised the most money; among opposed nonincumbents, these figures are 42 percent for experienced candidates

⁴For opposed candidates, the correlation between primary vote share and share of preprimary receipts is 0.83.

⁵The victory rates of opposed incumbents and nonincumbents who raise the most are 98 and 69 percent, respectively.

⁶Hirano and Snyder (2019) instead draw on a measure of “relevant” officeholding experience to account for job-specific differences between legislative and executive positions (see also Hirano and Snyder 2014). Elite endorsements are another way to measure viability, but previous experience is the most commonly used measure at the congressional level.

and 69 percent for top fundraisers. Less attention has been given to fundraising in primary elections, but recent work suggests that money is likely to matter even more at this stage (Bonica 2017, 2020).⁷

While the top fundraisers fare well at the ballot box, the distribution of campaign receipts is all or nothing in the vast majority of races. In all U.S. House primaries from 1980 to 2020, winners raise an average of 85 percent of total receipts, and if unopposed candidates are excluded, the average share for winners is 66 percent. Among nonincumbent primary winners, these figures are 74 and 52 percent, respectively. The gap between those at the top and bottom is large, with primary losers raising an average of 13 percent of preprimary receipts.⁸ A large number of candidates raise little to no money at all. Nearly 20 percent of on-ballot candidates and 25 percent of nonincumbents did not file a fundraising report with the Federal Election Commission, indicating that they raised less than \$5,000. Candidates who raise less than \$5,000 are not perceived as viable, and they further highlight the need to separately consider others who mount a credible campaign.

The main expectation is that conventional measures based on vote shares are likely to provide a more optimistic view of primary competition than their campaign war chests suggest. Vote totals overstate the incredibly slim chance of winning among those at the bottom of the fundraising pack and understate the advantage of those at the top. Candidates who raise zero percent of primary receipts still receive an average of 15 percent of the primary vote, and opposed candidates who raise 100 percent of primary receipts receive an average of 72 percent of the primary vote. Put differently, the correlation between receipt share and vote share among those who raise less than 10 percent or over 90 percent of receipts

⁷The question of what makes a candidate viable is not new, nor is the notion that fundraising is an indicator of likely success. Scholars have examined the relationship between money and viability since the FEC first began collecting campaign finance data in the 1970s. Most agree that challenger spending is positively associated with both House and Senate outcomes (but see Levitt 1994), though the marginal returns to incumbents have been a contested subject of debate (i.e., Gerber 1998; Green and Krasno 1988, 1990; Jacobson 1980, 1990; Krasno and Green 1988). Money has also been directly incorporated into measures of quality (Bond et al. 1985; Cohen et al. 2008; Ragsdale and Cook 1987), but the core difficulty of using expenditures to measure quality is that it mixes potential ability with the outcome of the election. More recently, Bonica (2017, 2020) argues that previous studies showing minimal returns of fundraising reflect a focus on general elections, and he uncovers a substantial effect of early money in primaries. Here, the association between fundraising and outcomes is a strength since we are interested in measuring competition rather than victory rates.

⁸Nonincumbents who lose raise an average of 12 percent; the rare incumbents who lose raise an average of 52 percent, compared to opposed winning incumbents who raise an average of 90 percent. This sizable difference among winning and losing incumbents suggests that fundraising patterns are a good reflection of incumbent vulnerability as well.

is 0.11 and 0.13, compared to 0.63 for those who raise more than 10 percent or less than 90 percent of receipts. While the strong association between fundraising and election outcomes adds validity to a fundraising-based measure of competition, the correlation between receipts and votes is lowest for those who are most likely to either win or lose.⁹

As a result, vote-share measures are also more likely to overstate the degree of competition in certain electoral contexts. The difference between vote-share and fundraising-based measures is expected to increase in primaries with more candidates at the bottom of the fundraising pack. Hirano and Snyder (2019) show that open-seat primaries attract the most candidates, but more long-shot candidates run in these races as well (Canon 1993). In advantaged-party open-seat primaries—the best-case scenarios of competition—the average number of candidates who raised less than 10 percent of preprimary receipts is 2.5, compared to 0.5 in all other primaries. Similarly, the share of candidates raising less than 10 percent of preprimary receipts is 38 percent in advantaged-party open-seat primaries versus 16 percent in all other primaries. The implication that vote-share measures diverge from fundraising-based measures the most in these primaries is particularly important because of the recent emphasis on their ability to inject competition into elections that would otherwise be uncompetitive.

I construct new measures of competition that are instead based on preelection fundraising totals. First, I create a binary measure of whether the race was competitive that considers the fundraising advantage of those at the top: whether the top fundraiser raised less than 57.5 percent of all preprimary receipts as well as whether the top fundraiser's share of receipts was within 20 percentage points of the second highest fundraiser.¹⁰ I use both measures because, unlike in general elections with two candidates, a 55

⁹Similarly, the fundraising margin of primary winners is larger than their margin of victory. In opposed primaries, winners outraise the top loser by an average of 46 percentage points, but the average victory margin is smaller at 36 points. This includes primary winners in blanket primaries who have little shot of winning the general election. If we look at the fundraising and victory margins for just the top primary winner, these figures are 50 and 38 percentage points, respectively.

¹⁰Ninety-five percent of candidates who raised at least 57.5 percent of preprimary receipts won the primary. Ninety-one percent of candidates whose receipt share was more than 20 percentage points lower than the top fundraiser's share lost the primary; of the nine percent whose receipt share was more than 20 points lower than the top fundraiser's share but won the primary, three-fourths lost in the general election (648 of 864). I also examined a measure of whether the winner raised less than 57.5 percent of receipts and whether the winner's fundraising margin was within 20 percentage points of the top-raising loser. The results are the same, but I only use preelection data here. Moreover, these differences are appropriate in light of the concept of interest here. In the small minority of races where candidates who are dramatically outraised but win are more often seen as upset victories, rather than as competitive races during the campaign cycle.

or 60 point threshold in primary elections does not necessarily indicate a narrow fundraising or victory margin since money and votes can be divided among more than two candidates.¹¹ Furthermore, winners are more likely to win with less than 57.5 percent of the vote but still prevail by a wide margin as the share of long-shot candidates increases. The 20-point margin measure better distinguishes between primaries where candidates are more evenly financed and those where they are not.

Second, I use a weighted measure of the number of candidates in the race based on preprimary receipts. It is similar to Laakso and Taagepera’s (1979) measure of the effective number of parties, where each party is weighted by being squared (see also Taagepera and Shugart 1993).¹² The advantage of using the effective number of parties is that it differentiates significant parties from less significant ones. I build on this approach and generate a fundraising-based measure of the effective number of candidates:

$$N_c = \frac{\left(\sum_{i=1}^n f_{irt}\right)^2}{\sum_{i=1}^n f_{irt}^2}, \quad (1)$$

where f_{irt} is the amount of money raised by candidate i in race r at time t .¹³ In races where campaign receipts are evenly distributed among candidates, the effective number of candidates is the same as the number of candidates on the ballot. In races where one candidate raises a large majority of receipts, the effective number of candidates is slightly larger than one. Because weighted values are almost always lower than unweighted values, our concern is where these values differ the most.

Fundraising measures provide a new opportunity to examine competition through the lens that political observers, voters, and the candidates themselves use during the election cycle, but they have their own limitations as well. For one, 1980 is the first election year for which disclosures of receipts are readily

¹¹The average victory margin for a winner who wins with less than 57.5 percent of the primary vote is 16 points. Nearly 30 percent of those who won with less than 57.5 percent of the primary vote won by more than 20 points. Even in opposed open-seat primaries in safe districts, the winner’s average victory margin is 19 points.

¹²Scholars of comparative politics have given significant attention to what counts as a political party (i.e., Cox 1997; Laakso and Taagepera 1979; Lijphart 1994; Molinar 1991; Taagepera and Shugart 1993) as well as how to measure competition across electoral systems (i.e., Blais and Lago 2009; Folke 2014; Grofman and Selb 2009, 2011, see also Cox et al. 2020). Yet this line of research similarly draws on vote or seat shares, whereas I use preelection resource disparities here.

¹³This is a commonly used formula in the weighting literature (see Kish 1965). I also calculated the Herfindahl index and the results are the same, but the effective number of candidates measure allows for clearer comparisons with recent work.

available, so the time frame of analyses based on fundraising are unable to match the historical breadth of studies that draw on vote totals.¹⁴ The second limitation is that the measures are contingent on an association between money and election outcomes. The connection is overwhelmingly apparent in the U.S., but if money is unrelated to viability or mandated to be equitable, other measures would be more useful. Fundraising measures are likely to raise normative concerns as well. The money chase is one of the main hurdles that candidates face, and it has consequences for who runs and who wins (Bonica 2020; Carnes 2018; Hall 2019). Lastly, the measures lead to unorthodox conclusions about representation that, unlike vote-share measures, are not rooted in levels of constituent support. A broader conception of representation may nonetheless be applicable in a money-driven era of nationalized elections. Indeed, Canes-Wrone and Miller (2020) find that members of Congress who receive a greater percentage of out-of-district contributions are more responsive to the national donor base. It is important to note, however, that these concerns are rooted in the state of our elections rather than the measure itself.

In sum, the main advantage of the fundraising measures introduced here is that they offer a view of primary competition that incorporates resource disparities among candidates. An additional benefit is that they are generated with preelection data that are commonly cited indicators of candidate viability prior to the election. While vote-share measures of competition are the most widely used in the study of elections in the United States and cross-nationally, they are also expected to result in a more optimistic view of the quality of competition than measures that account for the enormous disparities in candidate warchests. What is more, the magnitude of the difference between vote-share and fundraising measures is likely to increase as the number of long-shot candidates increases, or in the same primaries that scholars have lauded for injecting competition into districts that would otherwise be uncompetitive. We especially need to know how the best-case scenarios of competition look with a measure that accounts for the dimension that matters most in American elections today: the ability to raise money.

¹⁴The 1974 amendments to the Federal Election Campaign Act (FECA) established the Federal Election Commission (FEC), which administers the reporting system for campaign finance disclosures. For a brief history of federal campaign finance laws, see <https://transition.fec.gov/info/appfour.htm>.

Data and Method

The scope is not limited to congressional elections, but I use the trends in primary competition in U.S. House elections detailed by Hirano and Snyder (2019) to provide a comparison with the measures here. The analyses follow the same structure as those in Hirano and Snyder (2019). Competition is measured at the race level, and primaries are divided into several types based on seat type and partisan leaning. I draw on a dataset of more than 33,000 U.S. House candidates who filed fundraising reports with the Federal Election Commission (FEC) and/or were on the primary ballot from 1980 to 2020. I collected the full sample of on-ballot primary candidates from the America Votes series and the FEC website. Those who were not on the ballot but raised money are from the FEC database and Bonica’s (2014) Database on Ideology, Money in Politics, and Elections (DIME). The dataset used here includes the FEC candidate identifier, the FEC committee identifier (when available), and the DIME identifier for each candidate to facilitate merges across datasets. All of the fundraising data are from FEC reports.¹⁵

There are significant challenges associated with collecting preprimary fundraising data and thus measuring competition based on preprimary receipts. The first hurdle was merging the candidates with FEC data, which was made possible with the identifiers noted above.¹⁶ The other challenge is related to FEC reporting requirements. The FEC has collected quarterly and preprimary reports since 1980, but the document did not ask candidates to provide the total amount raised in the entire preprimary period (election cycle-to-date) until 2002. Thus, from 2002 on, I use the total preprimary amount reported by the candidate. From 1980 to 2000, I use the sum of the amount reported in each quarterly period before the primary and the amount in the preprimary report, which covers the first day of the current quar-

¹⁵The dataset also includes overall fundraising totals from the DIME data, which allows for additional checks on preprimary values. Virtually all of those in the DIME dataset who raised no money overall did not file preprimary reports, which increases our confidence in the zero values of preprimary receipts in these cases.

¹⁶Of the 33,200 candidates in the dataset, 25,200 have non-zero values of preprimary receipts and of total campaign receipts. Another 6,300 have zero values of preprimary receipts and of total campaign receipts. The preprimary receipts are correlated with total FEC receipts at 0.90; for primary losers (who thus did not continue to raise money after the primary), this increases to 0.96. There are approximately 1,700 candidates with non-zero values of total FEC receipts but zero values of preprimary receipts. Of these 1,700 candidates, 700 were unopposed primary winners; these races are coded as uncompetitive with one candidate in the race. The preprimary figures were further validated by summing all of the reports filed by the candidate in a cycle and matching these totals to their overall FEC totals. This ensures that the zero values in the preprimary stage are zero values rather than an error. In the analyses below, 356 of the 16,682 primaries have missing values on the fundraising measures because no candidate in the primary reported raising money.

terly period through the 20th day before the election.¹⁷ I validated these measures with the post-2002 preprimary totals provided by the candidates. The preprimary totals that I generated with quarterly and preprimary reports are correlated with the preprimary totals reported by the candidates at 0.99 so I am confident in the validity of these totals in the pre-2002 period.

I draw on fundraising totals to calculate whether the primary is competitive and the number of candidates in the race. The unit of analysis is the party primary by district and year from 1980 to 2020. Only Republican and Democratic primaries are considered here.¹⁸ There are approximately 16,700 observations, though the number decreases to 16,300 with the fundraising measures due to missing observations on preprimary receipts in about 2 percent of races. The analyses focus on two main factors that are widely known to affect primary competition: seat type and district partisanship. Like Hirano and Snyder (2019), partisan balance is coded as disadvantaged if the party received less than 42.5 percent of the district vote share in the current or previous presidential election, balanced if the party received between 42.5 and 57.5 percent, and advantaged if the party received more than 57.5 percent.¹⁹ I follow their classification of primary races into seven types: (i) advantaged-party open-seat primaries; (ii) advantaged-party incumbent-contested primaries; (iii) parties-balanced open-seat primaries; (iv) parties-balanced challenger-party primaries; (v) parties-balanced incumbent-contested primaries; (vi) disadvantaged-party open-seat primaries; and (vii) disadvantaged-party challenger-party primaries.²⁰

¹⁷In the 1980s and 1990s, candidates sometimes filed mid-year reports instead of quarterly reports; I use mid-year reports when quarterly reports are not available. Candidates who did not file a preprimary report or any quarterly report before the primary and were not unopposed primary winners are coded as raising no money.

¹⁸Like Hirano and Snyder (2019, 39), primaries in which no candidate ran for the nomination are counted as uncontested, with zero candidates on the ballot and zero effective candidates. Unlike them, I include cases in which a nomination was made by convention and count these as uncontested; however, they note that the patterns are similar when conventions are excluded or counted as uncontested. The 13 cases in which the general election winner or future general election winner (i.e., Bernie Sanders in 1988) is an Independent are also excluded. Unopposed primaries with missing values of receipts are coded as uncompetitive with one candidate in the race. It is unclear how Hirano and Snyder (2019) code blanket primaries; here they are considered by party in order to account for district partisanship. Because vote totals are tabulated at the primary level in blanket primaries, the total number of candidates is calculated at the primary level as well so the average number of candidates is higher. The results are the same if blanket primaries are excluded.

¹⁹Jacobson's measure of presidential vote share is used to measure the partisan leaning of the district. Hirano and Snyder's (2019) measure of partisan balance is based on statewide general election data and presidential election returns, but it is likely very similar to the one here in light of the nationalization of elections in recent decades.

²⁰Like Hirano and Snyder (2019, 39), I exclude advantaged-party challenger-party primaries and disadvantaged-party incumbent-contested primaries. The full sample of 18,270—2 primaries in 435 districts over 21 cycles—diminishes by 1,606 as a result; another 26 primaries with Independent general election winners are excluded; and an additional 44 duplicate primaries when districts were redrawn (i.e., Texas in 1996 and 2006) are included. The total number of observations in the candidate models is thus 16,682.

The first set of dependent variables are four binary indicators of whether the primary is competitive. The vote-share measures are whether the winner received less than 57.5 percent of the vote and whether the winner’s victory margin was within 20 points of the second highest vote-getter. The fundraising measures are whether the top fundraiser raised less than 57.5 percent of preprimary receipts and whether the top fundraiser’s margin was within 20 percentage points of the second highest fundraiser. The second set of dependent variables are three measures of the number of candidates in the race: the total number of candidates on the ballot, the effective number of candidates based on vote shares, and the effective number of candidates based on receipts. I also calculate the difference between the respective vote-share and fundraising measures to examine where the two measures differ the most. Descriptive statistics of the competitive primary variables are provided in Table A.1, and distributions of the number of candidates variables are provided in Figures A.1 and A.2.

We are interested in the quality of competition across primary type with vote-share measures and the fundraising measures introduced above. Each model includes a dummy variable for open-seat and challenger-party primaries, with incumbent-contested primaries as the baseline. To measure partisan leaning, I include indicators for parties-balanced and advantaged-party primaries, with disadvantaged-party primaries as the baseline. I interact seat type and party balance to examine how competition varies across primary types. While self-funded candidates are rare, in additional analyses, I include a dummy variable for whether there was a self-funded candidate in the race. The data are from the Center for Responsive Politics, with self-funded candidates defined as those who donated at least \$1 million to their campaign. Because the data are only available from 2000 on, they are not included in the main analyses, but the patterns are the same (see Tables A.3, A.4, and A.5). In the analyses below, I follow Hirano and Snyder’s (2019) focus on seat type and district partisanship due to the overwhelming impact of these variables on the level of primary competition, but all of the models include district and year fixed effects to account for time-invariant attributes of the district and election-specific trends.

Descriptive Trends Over Time

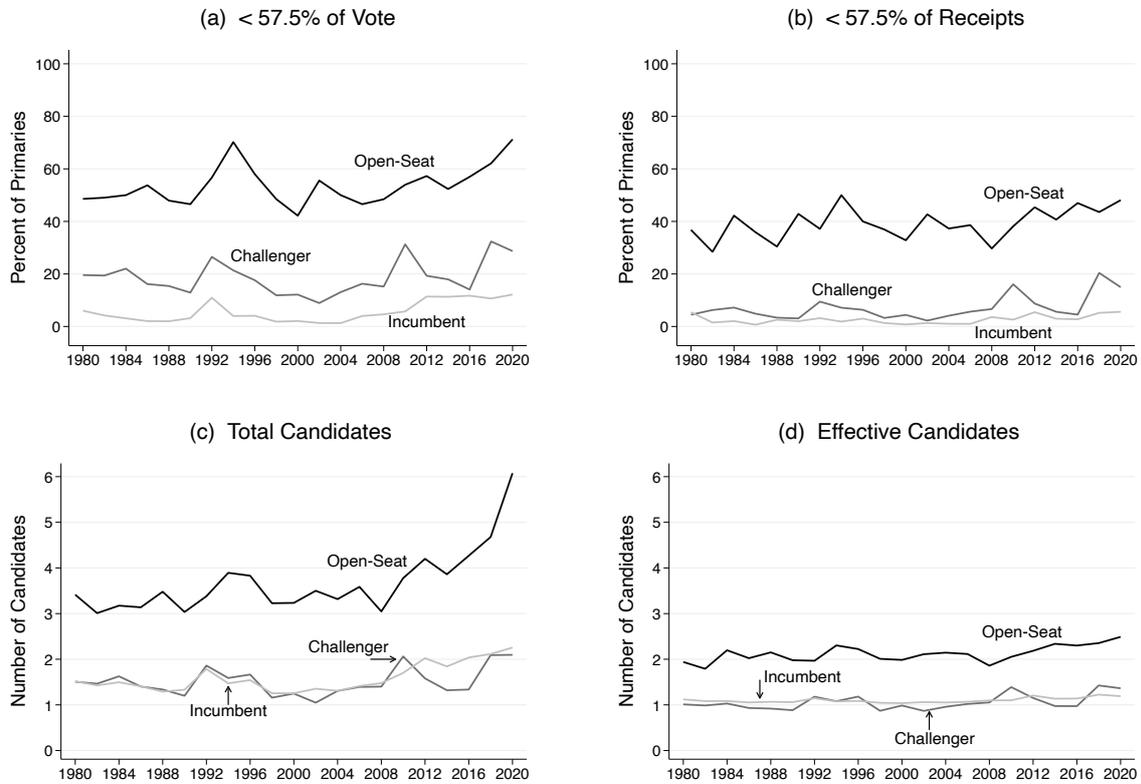
Before turning to the results, I first plot Hirano and Snyder’s (2019) measures next to the respective fundraising measures. The top graphs in Figure 1 show the percentage of primaries where the winner received less than 57.5 percent of the vote and where the top fundraiser raised less than 57.5 percent of receipts. The bottom graphs show the total number of candidates and the effective number of candidates with receipts.²¹ The data are broken down into incumbent-contested, challenger-party, and open-seat races. Two main patterns emerge. First, the fundraising measures reveal lower levels of competition across primary types. In open seats, the share of competitive races declines by 21 points with the fundraising measure, from 55 to 34 percent. In challenger-party primaries, 18 percent of races are competitive with the vote share measure, compared to 7 percent with the fundraising measure. Very few incumbent-contested primaries are competitive with either measure, but the share is still lower with the fundraising measure (5 vs. 2 percent). Similarly, the total number of candidates is 1.6 in incumbent-contested primaries, 1.5 in challenger-contested primaries, and 3.7 in open-seat primaries. By comparison, the effective number of candidates in each is 1.1, 1.1, and 2.1, respectively.²²

Second, differences between the number of candidate measures are more pronounced in recent election cycles, particularly in open-seat primaries. The total number of candidates in open seats has risen sharply since 2008. From 1980 to 2006, the average total number of candidates in incumbent-contested, challenger-party, and open-seat primaries is 1.4, 1.4, and 3.4, respectively. These figures increase to 1.9, 1.7, and 4.3, respectively, in the period from 2008 to 2020. By comparison, the effective number of candidates has remained fairly stable over this period. More generally, the trends provide initial support for the argument that our assessment of electoral competition is tied to the measures we use. The next section incorporates the partisan balance of the district and explores how ballot-based and fundraising measures of competition differ across primary types.

²¹The total number of candidates is slightly lower than those in Hirano and Snyder (2019, 181) because they exclude disadvantaged-party primaries. Figure A.3 also presents averages for general election candidates based on total fundraising figures. The trends are consistent with the decline in general election competition.

²²The total number of candidates is correlated with the effective number of candidates at 0.78.

Figure 1: Measures of Primary Competition Over Time and By Seat Type



Note: The top graphs show the percentage of primaries where the winner received less than 57.5 percent of the vote and where the top fundraiser received less than 57.5 percent of total receipts. The bottom graphs show the total number of candidates and the effective number of candidates calculated with preprimary receipts.

Results

As noted above, the main expectation is that ballot-based measures yield a more optimistic view of primary competition than measures that incorporate fundraising disparities among candidates. Table 1 presents the results for whether the primary is competitive with the vote-share and fundraising measures discussed above, and Table 2 presents the results with the number of candidate measures. We can see in Table 1 that advantaged-party open-seat primaries are the most likely to be competitive with both the fundraising and vote-share measures. The lower level of competition in incumbent-contested primaries and in disadvantaged-party constituencies (baseline categories) is unsurprising. Yet the size of

the coefficients varies significantly with the vote share and fundraising measures, and as expected, the difference is largest in open-seat primaries. The magnitude of the difference is discussed in more detail below. Another notable pattern is that, even between the vote-share measures (Model 1 and Model 3), the likelihood that a primary is competitive is lower with the 20-point victory margin measure than with the 57.5 percent vote measure, because unlike in general elections, winning with less than 57.5 percent of the primary vote does not indicate a narrow 20-point victory margin.

Table 1: Likelihood of Competitive Primary Increases with Vote-Share Measures

	(1) Competitive < 57.5% (Votes)	(2) Competitive < 57.5% (Receipts)	(3) Competitive 20-Pt Margin (Votes)	(4) Competitive 20-Pt Margin (Receipts)
Open Seat	0.37** (0.02)	0.22** (0.01)	0.32** (0.02)	0.19** (0.01)
Challenger Party	0.16** (0.01)	0.07** (0.01)	0.15** (0.01)	0.06** (0.01)
Parties-Balanced	0.05** (0.01)	0.05** (0.01)	0.04** (0.01)	0.03** (0.01)
Advantaged-Party	0.04** (0.01)	0.04** (0.01)	0.03* (0.01)	0.03** (0.01)
Open Seat x Parties-Balanced	0.11** (0.02)	0.14** (0.02)	0.10** (0.02)	0.11** (0.02)
Open Seat x Advantaged-Party	0.28** (0.02)	0.32** (0.02)	0.22** (0.02)	0.25** (0.02)
Constant	0.06 (0.05)	-0.02 (0.04)	0.08 (0.05)	-0.03 (0.04)
Number of Observations	16,682	16,326	16,682	16,326
R-squared	0.24	0.22	0.19	0.17

Note: Results are from OLS regressions from 1980 to 2020. Standard errors are in parentheses. The dependent variable in Models 1 and 2 is whether the winner received less than 57.5 percent of the vote and whether the top fundraiser received less than 57.5 percent of all receipts, respectively. The dependent variable in Models 3 and 4 is whether the winner's victory margin was within 20 percentage points of the second highest vote-getter and whether the top fundraiser's fundraising margin was within 20 points of the second highest fundraiser, respectively. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies. The models include district and year fixed effects. *p<0.05, **p<0.01.

The same patterns emerge in Table 2. Across measures, the number of candidates increases in open-seat primaries in advantaged-party and parties-balanced constituencies, which is consistent with Hirano and Snyder's (2019) findings. The weighted measures calculated with votes as well as receipts (Models 2

and 3) indicate that the unweighted measure of the total number of candidates includes a large number of candidates who fail to attract support from voters as well as donors. We should be especially cautious of using unweighted measures of total candidates to assess the quality of competition. The coefficients are much smaller with the effective number of candidates measure based on votes (Model 2), and we can see in Model 3 that the effective number of candidates based on preprimary receipts is lower yet. As in Table 1, the magnitude of the difference across the number of candidate measures varies dramatically by primary type, with the largest difference emerging in open-seat primaries.

Table 2: Expected Number of Candidates Increases With Vote-Share Measures

	(1) Total Number of Candidates (Ballot)	(2) Effective Number of Candidates (Votes)	(3) Effective Number of Candidates (Receipts)
Open Seat	1.46** (0.07)	0.97** (0.04)	0.70** (0.03)
Challenger Party	0.20** (0.03)	0.20** (0.02)	0.09** (0.01)
Parties-Balanced	0.44** (0.03)	0.22** (0.02)	0.21** (0.02)
Advantaged-Party	0.42** (0.04)	0.22** (0.02)	0.22** (0.02)
Open Seat x Parties-Balanced	0.58** (0.08)	0.28** (0.05)	0.30** (0.04)
Open Seat x Advantaged-Party	1.91** (0.09)	0.82** (0.05)	0.84** (0.04)
Constant	1.94** (0.21)	1.33** (0.12)	1.00** (0.09)
Number of Observations	16,682	16,682	16,326
R-squared	0.36	0.33	0.32

Note: Results are from OLS regressions from 1980 to 2020. Standard errors are in parentheses. The dependent variable in Model 1 is the total number of candidates on the ballot, and the dependent variable in Models 2 and 3 is the effective number of candidates based on votes and receipts, respectively, calculated with the formula outlined above. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies. The models include district and year fixed effects. *p<0.05, **p<0.01.

I also calculate the difference between the fundraising and vote-share measures to illustrate where these measures differ the most (i.e., whether the race is competitive with the 57.5 vote percent and 20-point victory margin measure minus whether the race is competitive with the respective fundraising

measure; the total and effective number of candidates with votes minus the effective number of candidates with receipts). The full models are provided in Table A.2. Predicted values are plotted by primary type in Figure 2.²³ The top graphs show the difference in whether the primary is expected to be competitive with the 57.5 vote percent and 20-point victory margin measures; the bottom graphs show the difference between the total and effective number of candidate measures. Positive (negative) values indicate that primaries are more (less) likely to be competitive with the vote-share measures and correspond to an expected increase (decrease) in the number of candidates with the vote-share measures.

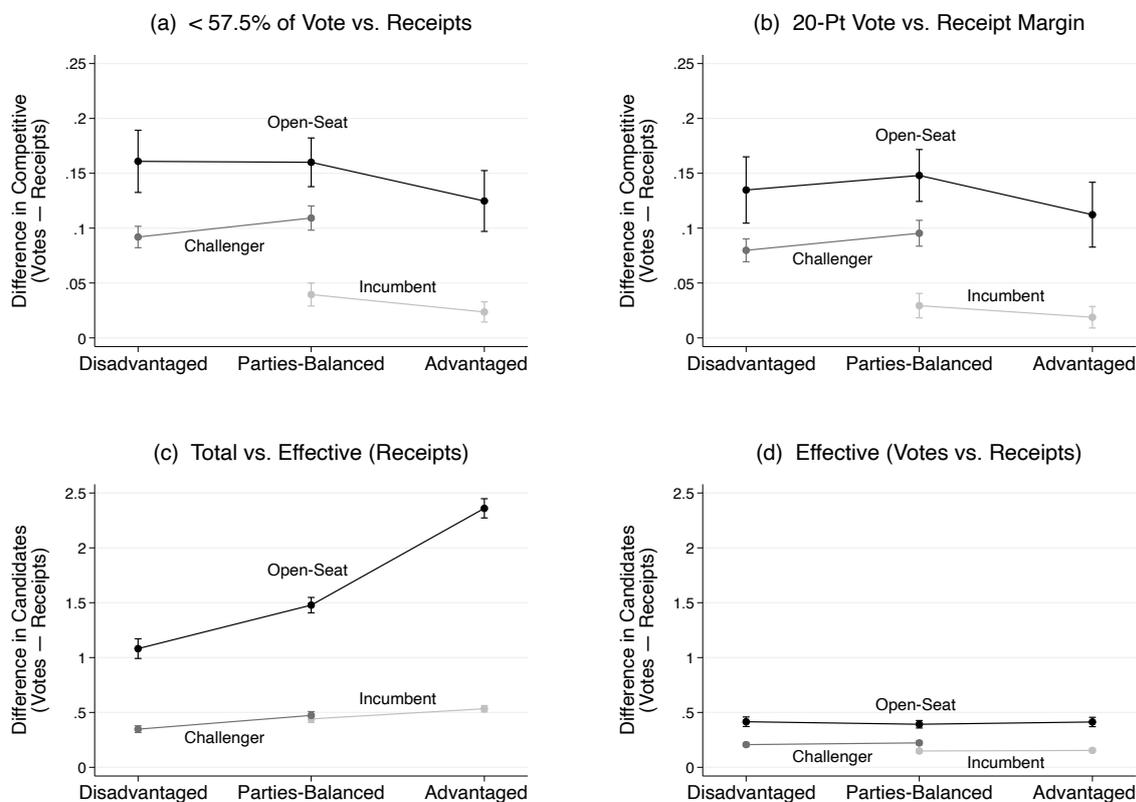
All four graphs indicate that competition looks better with vote-share measures, but there is significant variation across primary types with respect to the magnitude of the difference. The disparity is smallest in incumbent-contested races and largest in open seats. In advantaged-party open-seat primaries, the probability that the race is competitive increases by 12 percentage points with the 57.5 percent vote measure and by 11 points with the 20-point margin measure (shown in graphs (a) and (b), respectively; the predicted values are 0.58 vs. 0.70 with the 57.5 percent measures and 0.47 vs. 0.58 with the 20-point margin measures). In parties-balanced open seats, the probability increases by 16 percentage points with the 57.5 percent measure and 15 points with the 20-point margin measure (from 0.39 to 0.55 with the 57.5 percent measure and from 0.33 to 0.48 with the 20-point margin measure). Put differently, of the 481 advantaged-party open-seat primaries in the dataset, 338 are competitive with the 57.5 percent vote-share measure, compared to 278 with the 57.5 percent fundraising measure. Of the 752 parties-balanced open-seat primaries, 415 are competitive with the 57.5 percent vote-share measure, versus 294 with the 57.5 percent fundraising measure.²⁴

The number of candidate results also reveal sizable differences between measures. The difference

²³The graphs follow the same format as Hirano and Snyder (2019). See Figure A.4 for their figures. The main comparisons in the paper are with the top right (percent of competitive races) and bottom left (number of candidates) graphs. The values on the number of candidates in open seats are slightly lower, which is likely due to differences in the time periods of study. Their data extend from 1950 to 2016, whereas the data here are from 1980 to 2020 when the total number of candidates in open-seat primaries is higher (Hirano and Snyder 2019, 183). However, the patterns are clearly similar. I focus on the expected difference between the measures, but I also plot the predicted values in Tables 1 and 2 in Figures A.5 and A.6, respectively.

²⁴All of these differences are statistically significant. Figures A.5 and A.6 show the predicted values with the dependent variables in Tables 1 and 2.

Figure 2: Competition Higher Across Vote-Share Measures, Especially in Open Seats



Note: Predicted values are calculated from the models in Table A.2. The dependent variable in graphs (a) and (b) is the difference in whether the primary is competitive with the 57.5 vote-share and fundraising measures and the difference in whether the primary is competitive with the 20-point victory and fundraising margin measures, respectively. The dependent variable in graphs (c) and (d) is the difference between the total and effective number of candidates (based on receipts) and the difference between the effective number of candidates based on votes and receipts, respectively. Across measures, primaries are more competitive with vote-share measures than with fundraising measures.

between the total and effective number of candidates based on receipts is largest (shown in graph (c)), reaching a height of 2.4 candidates in advantaged-party open-seat primaries (from 5.0 total to 2.7 effective candidates) and 1.4 candidates in parties-balanced open-seat primaries (from 3.5 total to 2.1 effective candidates). In other words, the number of candidates decreases by nearly *half* in advantaged-party open seats and by nearly *one-third* in parties-balanced open seats with the fundraising measure. Unweighted measures are almost always higher than weighted measures, but the difference between the effective number of candidate measures based on votes and receipts is statistically significant and largest in open-

seat primaries as well (shown in graph (d)). The magnitude is much smaller at 0.4 candidates, but it is substantively meaningful as the average effective number of candidates based on votes and receipts is 2.5 and 2.1 in open seats, respectively. Whereas incumbent-contested primaries are expected to be uncompetitive, the disparity between measures in open seats is particularly concerning in light of the recent emphasis on these races.

It is important to note that these two conceptions of competition—the winner or top fundraiser’s advantage and the number of candidates in the race—do not have quite the same implications for democracy. A long line of research on the vanishing marginals is rooted in the premise that a decline in close elections is cause for concern, and the lower levels of evenly resourced candidates is worrisome. Additional candidates do not necessarily improve the quality of competition, though there is a strong association between the effective number of candidates and electoral margins. In opposed advantaged-party open-seat primaries, the average margin of victory in primaries with less than 2.7 effective candidates is 27 points, compared to 11 points in primaries with more. In opposed incumbent-contested races, the average victory margin in primaries with less than the mean of 1.3 effective candidates is 61 points, compared to 31 points in primaries with more. Incumbents rarely lose in primaries, but the percentage of incumbents who win drops from 99.5 percent in opposed primaries with fewer than 1.3 effective candidates to 91.8 percent in primaries with more. In primaries with at least two effective candidates, incumbent victory rates decrease to 86.2 percent. In short, these measures are collectively tapping into viability and vulnerability.

A Closer Look at Open Seats

We can also leverage narrowly won elections to provide a closer look at the relationship between open-seat primaries on the difference between vote-share and fundraising measures. It is not possible to fully randomize an open seat, but we can examine seats that were plausibly likely to be open and were versus those that were plausibly likely to be open but were not. Specifically, we can compare primaries where the incumbent won the previous primary election by less than 20 points and ran again and primaries

where the incumbent narrowly won the previous primary but did not run again, thus resulting in an open seat.²⁵ We can also compare primaries where the incumbent won the previous general election with less than 57.5 percent of the vote and ran again and primaries where the incumbent narrowly won the previous general election but did not run again. The dependent variables are the same four difference measures used above. The independent variables are whether the incumbent's primary was an open-seat race after he or she won by less than a 20-point margin in the previous primary election and after he or she won with less than 57.5 percent of the vote in the previous general election. The results are provided in Table 3.

The top half includes the races where the previous primary was close, and the bottom half includes the races where the previous general election was close. The number of observations decreases dramatically, but the patterns are consistent with those above. In primaries where the incumbent narrowly won the primary in the previous cycle, the probability that an open-seat race is competitive increases by 50 percentage points with the 57.5 percent vote-share measure and by 54 points with the 20-point victory margin measure. The number of candidates increases by 1.88 candidates with the total number of candidates measure, and although the coefficient in Model 4 is positive, it does not reach conventional levels of significance. In primaries where the previous general election was close, the probability that an open-seat primary is competitive increases by 9 percentage points with both the 57.5 percent vote-share and the 20-point victory margin measures. Similarly, the number of candidates increases by 0.73 candidates with the total number of candidate measure and by 0.12 candidates with the vote-based measure of the effective number of candidates.

In sum, while the picture of primary competition based on the fundraising measures introduced here is worse than recent research suggests, the implications are much broader and extend to vote-share measures of competition more generally. Indeed, even measures that use a narrower 20-point victory margin and

²⁵The sample includes incumbents who won the previous election as incumbents, rather than as first-time general election winners. For incumbents who were redrawn into a different district and ran again, I use the competitive race and number of candidate measures in their new districts.

Table 3: Relationship Between Open Seat and Difference Between Vote-Share and Fundraising Measures, After Narrowly Won Elections

	(1) Difference in Competitive ($< 57.5\%$)	(2) Difference in Competitive (20-Pt Margin)	(3) Difference in Candidates (Total-Effective)	(4) Difference in Effective (Votes-Receipts)
Close Primary Election, Open Seat Next Cycle	0.50* (0.23)	0.54* (0.24)	1.88** (0.38)	0.45 (0.27)
Constant	0.73 (0.66)	0.88 (0.71)	3.53** (1.09)	2.38** (0.78)
Number of Observations	142	142	142	142
R-squared	0.90	0.91	0.98	0.91

	(1) Difference in Competitive ($< 57.5\%$)	(2) Difference in Competitive (20-Pt Margin)	(3) Difference in Candidates (Total-Effective)	(4) Difference in Effective (Votes-Receipts)
Close General Election, Open Seat Next Cycle	0.09** (0.03)	0.09** (0.03)	0.73** (0.10)	0.12** (0.04)
Constant	0.15 (0.13)	0.19 (0.13)	1.80** (0.44)	0.31 (0.19)
Number of Observations	936	936	936	936
R-squared	0.45	0.42	0.62	0.52

Note: Results are from OLS regressions from 1980 to 2020. Standard errors are in parentheses. The dependent variable in Models 1 and 2 is the difference in whether the primary is competitive with the 57.5 vote-share and fundraising measures and the difference in whether the primary is competitive with the 20-point victory and fundraising margin measures, respectively. The dependent variable in Models 3 and 4 is the difference between the total and effective number of candidates (based on receipts) and the difference between the effective number of candidates based on votes and receipts, respectively. The independent variables are whether the primary was an open seat after the incumbent narrowly won the previous primary or general election. Positive coefficients indicate that primaries are more competitive with vote-share measures than with fundraising measures. The models include district and year fixed effects. * $p < 0.05$, ** $p < 0.01$.

are similarly weighted based on vote shares paint a more optimistic view of electoral competition than measures based on resource disparities among candidates. The findings raise new questions about the limitations of vote-share measures for assessing the quality of competition in elections, particularly in races that attract more long-shot candidates. The final section examines the factors that shape the disparity between vote-share and fundraising measures of competition, and in particular, how the disparity widens as the number of candidates who have few resources and little chance of winning increases.

How Long-Shot Candidates Influence Our Measures

As noted above, the main reason why vote-share measures are expected to overstate the degree of competition in open seats is because of the entry of more long-shot candidates in these contexts. As the number of long-shot candidates increases, the disparity between the quality of competition suggested by vote-share and fundraising measures is likely to widen. By further examining the conditions under which vote-share measures are more likely to depart from measures based on resource disparities, we can better understand when and how various measures will lead to different conclusions. The analyses are structured the same as above and again include seat type and partisan balance. Here the main independent variable is the number of candidates in the primary who raised less than 10 percent of preprimary receipts.²⁶ I use indicator variables for the number of long-shot candidates in the race, with zero candidates raising less than 10 percent of receipts as the baseline category. More than 95 percent of primaries have fewer than five long-shot candidates so primaries with five or more candidates raising less than 10 percent of receipts are collapsed into one category. The results are presented in Table 4.

The coefficient on the open seat variable is still positive and significant in Models 1 and 2, but the magnitude is much smaller. Moreover, the coefficients on the number of long-shot candidates variables are between two and five times larger than that on open seat. For the most part, the difference between the vote-share and fundraising measures increases with each additional long-shot candidate, though the size of the increase varies across models. In the number of candidate models, open seat is not even significant once the number of long-shot candidates is taken into account. In short, much of what is driving the relationship between open-seat primaries and the disparity between the vote-share and fundraising measures is the number of long-shot candidates in the race. In fact, if we add the coefficients on open-seat primaries, competition even looks *better* with the fundraising measures in Models 1 and 4 when there are zero long-shot candidates in the race (as the values are negative).

²⁶Only five percent of candidates who raised less than 10 percent of preprimary receipts won the primary. In advantaged-party open seats, this figure is lower at 3 percent. Of the 462 total primary winners who won with less than 10 percent of receipts, 75 percent, or 347, won in challenger-party primaries; only 6 of those 347 won in the general election. It is appropriate to describe those who raise less than 10 percent of receipts as long-shot candidates.

Table 4: Relationship Between Long-Shot Candidates and Disparity Between Measures

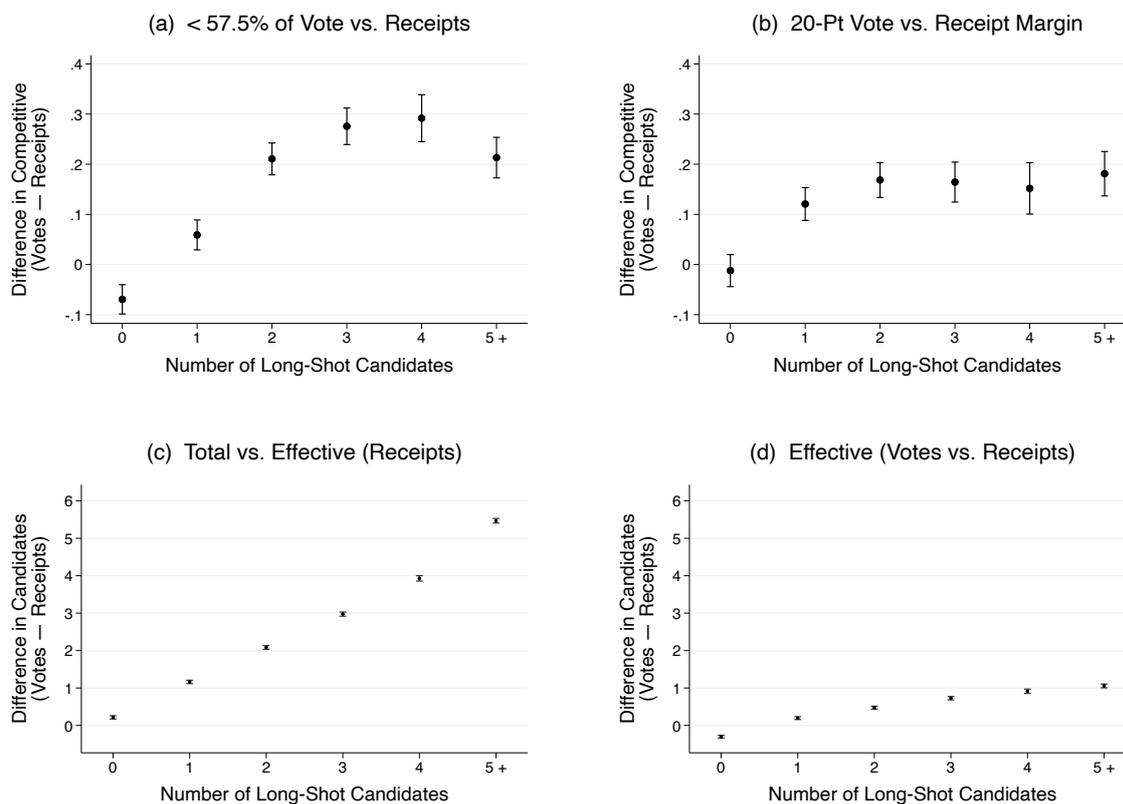
	(1) Difference in Competitive ($< 57.5\%$)	(2) Difference in Competitive (20-Pt Margin)	(3) Difference in Candidates (Total-Effective)	(4) Difference in Effective (Votes-Receipts)
One Long-Shot Candidate	0.13** (0.01)	0.13** (0.01)	0.95** (0.01)	0.50** (0.01)
Two Long-Shot Candidates	0.28** (0.01)	0.18** (0.01)	1.87** (0.02)	0.77** (0.01)
Three Long-Shot Candidates	0.35** (0.01)	0.18** (0.02)	2.76** (0.02)	1.03** (0.02)
Four Long-Shot Candidates	0.36** (0.02)	0.16** (0.02)	3.71** (0.03)	1.21** (0.03)
Five+ Long-Shot Candidates	0.28** (0.02)	0.19** (0.02)	5.25** (0.03)	1.36** (0.02)
Open Seat	0.07** (0.02)	0.08** (0.02)	0.03 (0.03)	0.02 (0.02)
Challenger Party	0.06** (0.01)	0.06** (0.01)	-0.04** (0.01)	0.05** (0.01)
Parties-Balanced	-0.01 (0.01)	-0.00 (0.01)	0.02 (0.01)	-0.05** (0.01)
Advantaged-Party	-0.02* (0.01)	-0.01 (0.01)	0.02 (0.02)	-0.06** (0.01)
Open Seat x Parties-Balanced	-0.03 (0.02)	-0.01 (0.02)	0.09** (0.03)	-0.08** (0.02)
Open Seat x Advantaged-Party	-0.10** (0.02)	-0.06* (0.02)	0.14** (0.03)	-0.27** (0.03)
Constant	-0.05 (0.05)	0.01 (0.05)	0.16* (0.07)	-0.05 (0.06)
Number of Observations	16,326	16,326	16,326	16,326
R-squared	0.16	0.10	0.85	0.50

Note: Results are from OLS regressions from 1980 to 2020. Standard errors are in parentheses. The dependent variable in Model 1 is the total number of candidates on the ballot, and the dependent variable in Models 2 and 3 is the effective number of candidates based on votes and receipts, respectively, calculated with the formula outlined above. The baseline categories are incumbent-contested primaries, disadvantaged-party constituencies, and primaries with zero long-shot candidates. The models include district and year fixed effects. * $p < 0.05$, ** $p < 0.01$.

Figure 3 plots the expected difference between these measures across a range of values of long-shot candidates in advantaged-party open-seat primaries. The negative values in graphs (a) and (d) when there are zero long-shot candidates in the race illustrate the point above, but the majority of open-seat races have at least one long-shot candidate. On average, there are 2.5 candidates who raise less than 10 percent of preprimary receipts in advantaged-party open seats. In races with at least three long-shot candidates, the likelihood a primary is considered competitive increases by 25 to 30 percentage points

with the 57.5 percent vote-share measure and by 15 to 20 points with the 20-point margin measure. Similarly, the disparity between the effective and actual number of candidates increases by almost one full candidate with each additional long-shot candidate. Even the disparity between the two effective candidate measures (graph d), both of which are weighted, is approximately one candidate in races with at four or more long-shot candidates. Thus, the degree to which our measures differ depends in large part on the number of long-shot candidates, but it is far more common that vote-share measures provide a rosier view of competition than measures based on receipts.

Figure 3: Difference Between Measures Increases With Number of Long-Shot Candidates



Note: Predicted values are calculated from the models in Table 4. The dependent variable in graphs (a) and (b) is the difference in whether the primary is competitive with the 57.5 vote-share and fundraising measures and the difference in whether the primary is competitive with the 20-point victory and fundraising margin measures, respectively. The dependent variable in graphs (c) and (d) is the difference between the total and effective number of candidates (based on receipts) and the difference between the effective number of candidates based on votes and receipts, respectively. Across measures, primaries are more competitive with vote-share measures than with fundraising measures.

One question for future research is why so many candidates run even though they fail to raise the funds needed to mount a credible campaign. It may be that long-shot candidates have a higher, though still very slim, chance of winning in open-seat races than they do in races with an incumbent (Canon 1993). Candidates may miscalculate their ability to gain traction and expect to raise more money than they do. The broader media environment might play a role as well. Arceneaux et al. (2020) find that the density of Fox News in a congressional district altered the perceptions of high-quality potential Republican candidates and increased their likelihood of running for Congress. While their focus is on experienced challengers, it may be that media markets are also associated with the entry of inexperienced candidates. A full exploration of this question is beyond the scope here, as our main interest is not why so many long-shot candidates run but rather how measures based on resources change our view of primary competition. It is clear, however, that the exponential increase in the amount of money needed to win has not deterred candidates from entering the fray, even those who have little chance of success.²⁷

Conclusion

The main argument of this paper is that when primary competition is viewed through the lens of fundraising, it looks far worse than recent research suggests. The likelihood that primaries are competitive decreases across primary types with the fundraising measure, with the largest decline emerging in open-seat races. Furthermore, the notion that several plausibly viable candidates are vigorously competing against each other for voter support is not borne out when competition is measured with fundraising patterns. In advantaged-party open-seat primaries—the best case scenarios of competition—the effective number of candidates based on campaign receipts is expected to be two or three times smaller than the number of candidates on the ballot. Comparisons with the same vote and receipt margin thresholds and with weighted vote-share and receipt-share measures similarly reveal lower levels of competition with the fundraising measures. The patterns are also apparent when we look at open seats that followed narrowly

²⁷However, the high price tag of running for Congress is likely to deter some potential candidates more than others (Bonica 2020; Carnes 2018; Hall 2019).

won primary and general elections.

Additional analyses indicate that much of the disparity between vote-share and fundraising measures is driven by the number of long-shot candidates in the race. The good news is that we can better grapple with the conditions under which vote-share measures are most likely to diverge from alternative measures based on candidate resources. However, if we fail to account for those at the bottom of the fundraising pack, the candidates who have little chance of winning are propelling much of the optimism around the state of primary competition. Vote-share measures may even overstate the degree of general election competition, which is already dismally low, though general elections are beyond the scope of this paper. More generally, we need to more seriously consider how our current and historical assessments of the quality of electoral competition are tied to and influenced by the measures that we use.

While scholars have highlighted some negative consequences of close elections, democratic governments are nonetheless premised on electoral contestation. There is no right number of elections that ought to be contested, nor is the limited number of incumbent-contested elections viewed as necessarily cause for concern. However, the results with respect to open-seat races are particularly troublesome. Scholars have increasingly pointed to the role these primaries play in ensuring that our elected officials face high-quality competitors before they are selected initially. While it may be difficult to agree on how competitive our elections should be, the sheer volume of research on this topic reflects a broader assumption that, at some point either prior to or during an officeholder's tenure, there is a clear normative benefit of having candidates run in close elections. The decrease in competition in open seats is thus concerning in light of the fundamental role that competition plays in American democracy.

Beyond the study of electoral competition, fundraising-based measures open up new opportunities to examine a variety of other research questions that would be difficult or impossible to study with vote totals. For one, because fundraising is a good indicator of success, we can use preelection fundraising measures to predict election outcomes and party gains and losses across cycles. We can even leverage

quarterly reports to create a dynamic measure of electoral viability within a campaign cycle. We can also incorporate demographic variables and analyze which candidates have a fundraising advantage in the crucial preprimary stage and whether that has changed over time. For example, we might be interested in how candidates from historically underrepresented groups or candidates with more extreme or moderate ideologies fare in preprimary fundraising today compared to the 1980s.

Second, because campaign receipts can be aggregated in various ways, fundraising totals can be used to examine differences among elected officeholders as well. There is significant variation across members of Congress, with some raising tens of millions of dollars and others raising far less. While it would be difficult to rank the influence of members based on their vote shares, fundraising figures provide an opportunity to examine the within-party stature of legislators and explore how fundraising matters for the distribution of party goods. We can additionally study tradeoffs between legislating and fundraising and see whether the top fundraisers are also the most effective legislators or whether one of these roles ultimately gives. In short, as long as money has such an overwhelming impact on American politics, a fundraising-based measure of viability and strength allows us to examine a wide range of questions about elections and representation.

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Appendix

Table A.1: Descriptive Statistics of Competitive Primary Variables

Less Than 57.5% of Votes	Less Than 57.5% of Receipts		Total
	Uncompetitive	Competitive	
Uncompetitive	13,506	279	13,785
Competitive	1,456	1,085	2,541
Total	14,962	1,364	16,326

20-Point Victory Margin	20-Point Receipt Margin		Total
	Uncompetitive	Competitive	
Uncompetitive	13,617	452	14,069
Competitive	1,458	799	2,257
Total	15,075	1,251	16,326

Note: The tables show the number of competitive and uncompetitive primaries with the vote-share and fundraising measures (i.e., whether the winner received less than 57.5 percent of the vote and whether the top fundraiser received less than 57.5 percent of all receipts; whether the winner's victory margin was within 20 percentage points of the second highest vote-getter and whether the top fundraiser's fundraising margin was within 20 points of the second highest fundraiser). With the 57.5 percent and 20-point margin measures, 89 and 88 percent of races are either competitive or uncompetitive, respectively; 9 percent of races are competitive with the vote-share measure but not the fundraising measure; and 2 and 3 percent are competitive with the fundraising measure but not the vote-share measure, respectively. The values on the measure of the difference between the two is thus 0 when both measures are the same, 1 when the race is competitive with the vote-share measure but not the fundraising measure, and -1 when the race is competitive with the fundraising measure but not the vote-share measure. Sixty-one percent of the primaries in which the two measures are the same are unopposed (8,867 of 14,591); the totals below exclude primaries with zero or one candidate on the ballot.

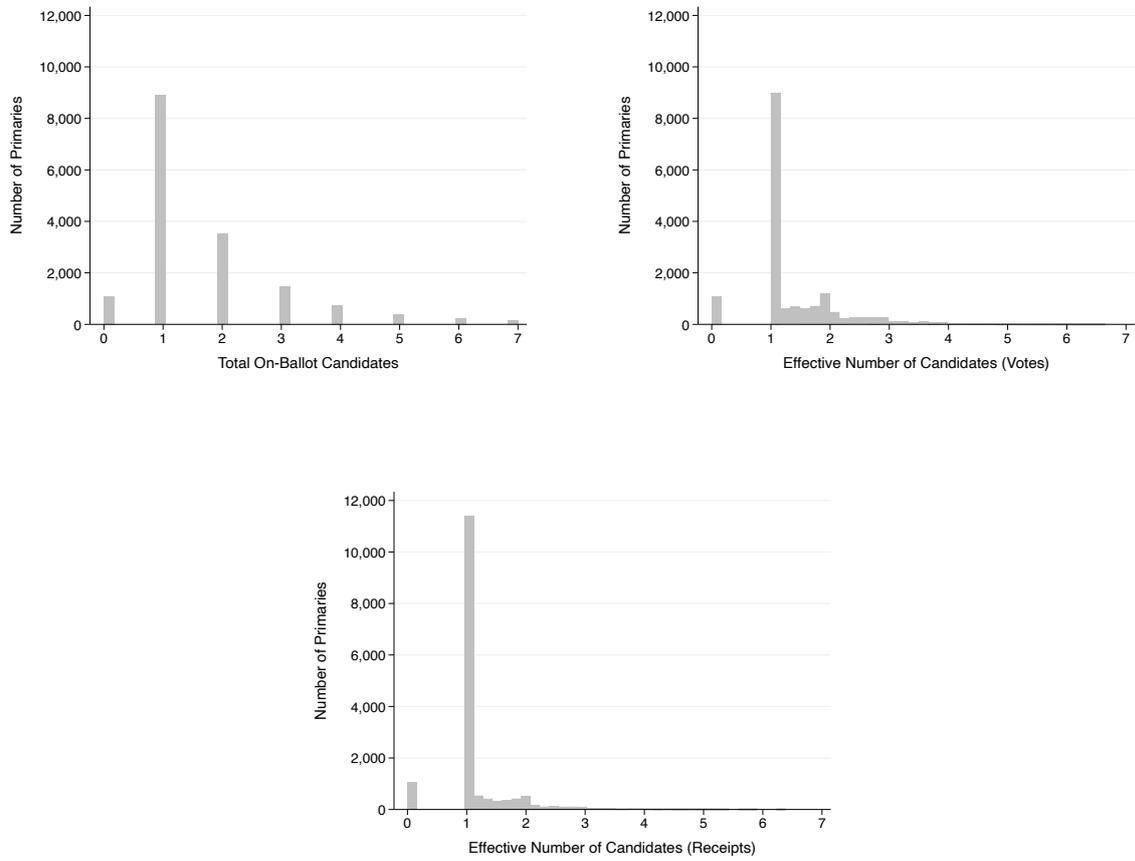
Primaries With At Least Two On-Ballot Candidates

Less Than 57.5% of Votes	Less Than 57.5% of Receipts		Total
	Uncompetitive	Competitive	
Uncompetitive	3,557	234	3,791
Competitive	1,456	1,085	2,541
Total	5,013	1,319	6,332

20-Point Victory Margin	20-Point Receipt Margin		Total
	Uncompetitive	Competitive	
Uncompetitive	3,717	358	4,075
Competitive	1,458	799	2,257
Total	5,175	1,157	6,332

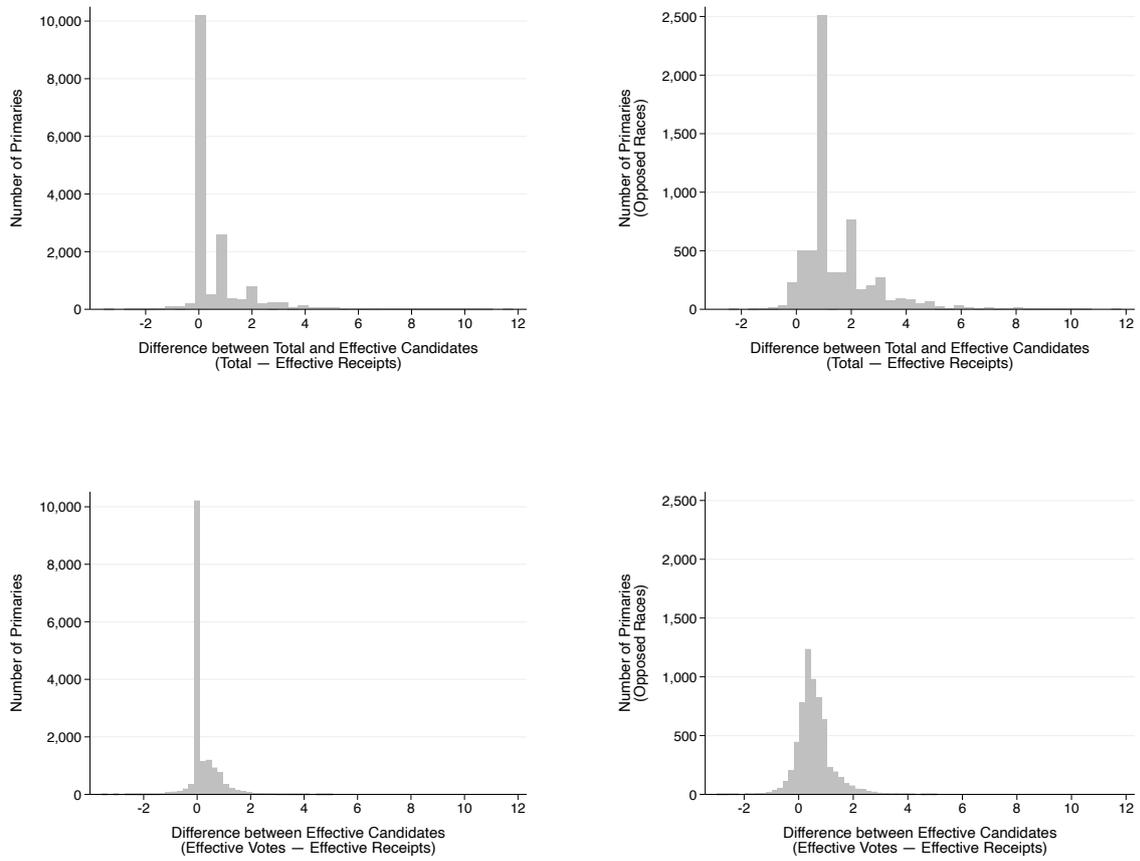
Note: The tables show the number of opposed competitive and uncompetitive primaries with the vote-share and fundraising measures. With the 57.5 percent measure, 73 percent of races are either competitive or uncompetitive with both measures; 23 percent of races are competitive with the vote-share measure but not the fundraising measure; and 4 percent are competitive with the fundraising measure but not the vote-share measure. With the 20-point margin measure, 71 percent of races are either competitive or uncompetitive with both measures; 23 percent of races are competitive with the vote-share measure but not the fundraising measure; and 6 percent are competitive with the fundraising measure but not the vote-share measure.

Figure A.1: Distributions of Number of Candidates Variables



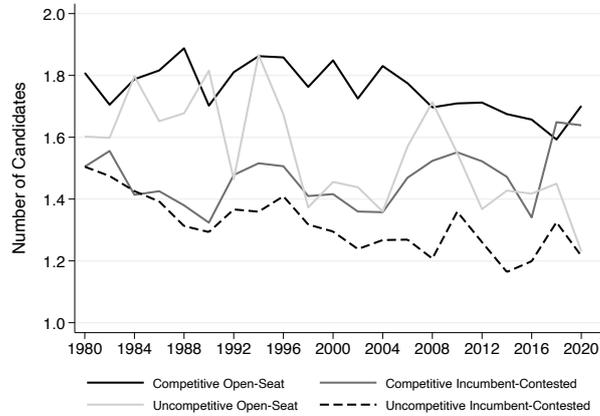
Note: The graphs show the distribution of the three number of candidates measures: the total number of candidates on the ballot (top left), the effective number of candidates based on vote shares (top right), and the effective number of candidates based on receipt shares (bottom). The zero values are the primaries with zero candidates on the ballot.

Figure A.2: Distributions of Difference Between Number of Candidates Variables



Note: The graphs show the distribution of the difference between the number of candidates measured with votes and receipts. The x-axis in the top graphs is the difference between the total and effective number of candidates (based on receipts), and the x-axis in the bottom graphs is the difference between the effective number of candidates based on votes and the effective number of candidates based on receipts. The left graphs include all primaries; approximately 90 percent of the zero values are uncontested primaries. The right graphs are limited to primaries with at least two on-ballot candidates. Positive (negative) values indicate that the number of candidates is higher (lower) with vote-share measures than with fundraising measures.

Figure A.3: Decline in General Election Competition with Effective Number of Candidates Measure



Note: The graph shows the average number of major-party general election candidates measured with the fundraising totals of general election candidates. The data are broken down by competitive and uncompetitive open-seat and incumbent-contested races (categories are measured the same as above). The data can only range from 1 to 2; in the full sample, the mean is 1.38, and the standard deviation is 0.36. The trends are consistent with the literature on the decline in general election competition measured with vote shares, though one potential implication of the results is that vote-share measures may still overstate the degree of competition in general elections. This question is beyond the scope of this paper but would be valuable for future research to explore.

Figure A.4: Four Measures of Primary Competition Reported in Hirano and Snyder (2019)

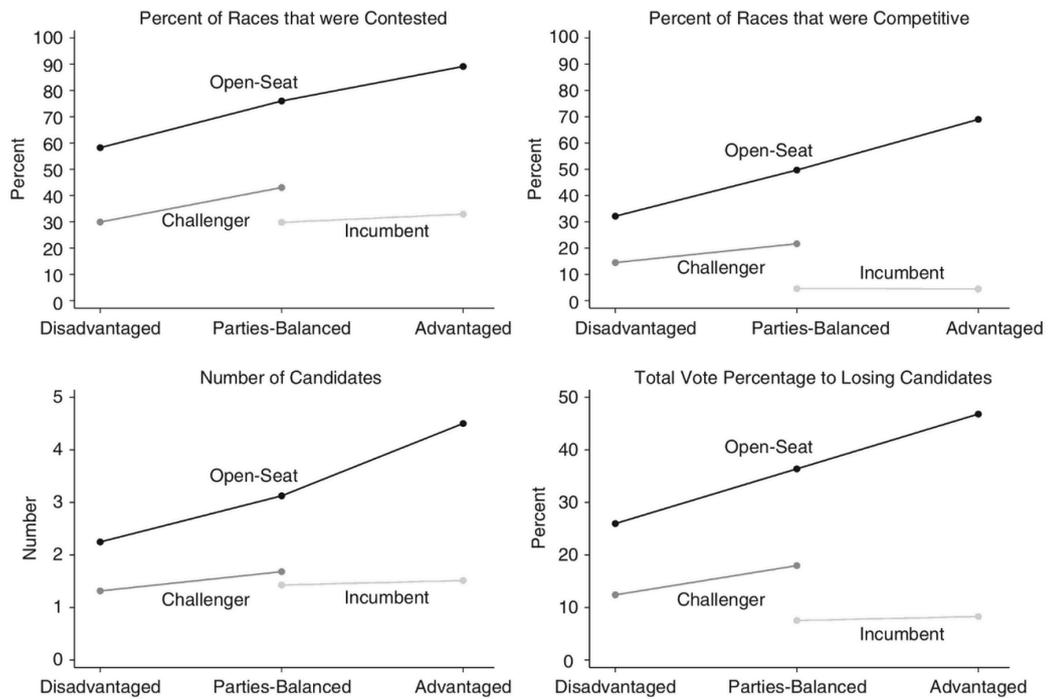
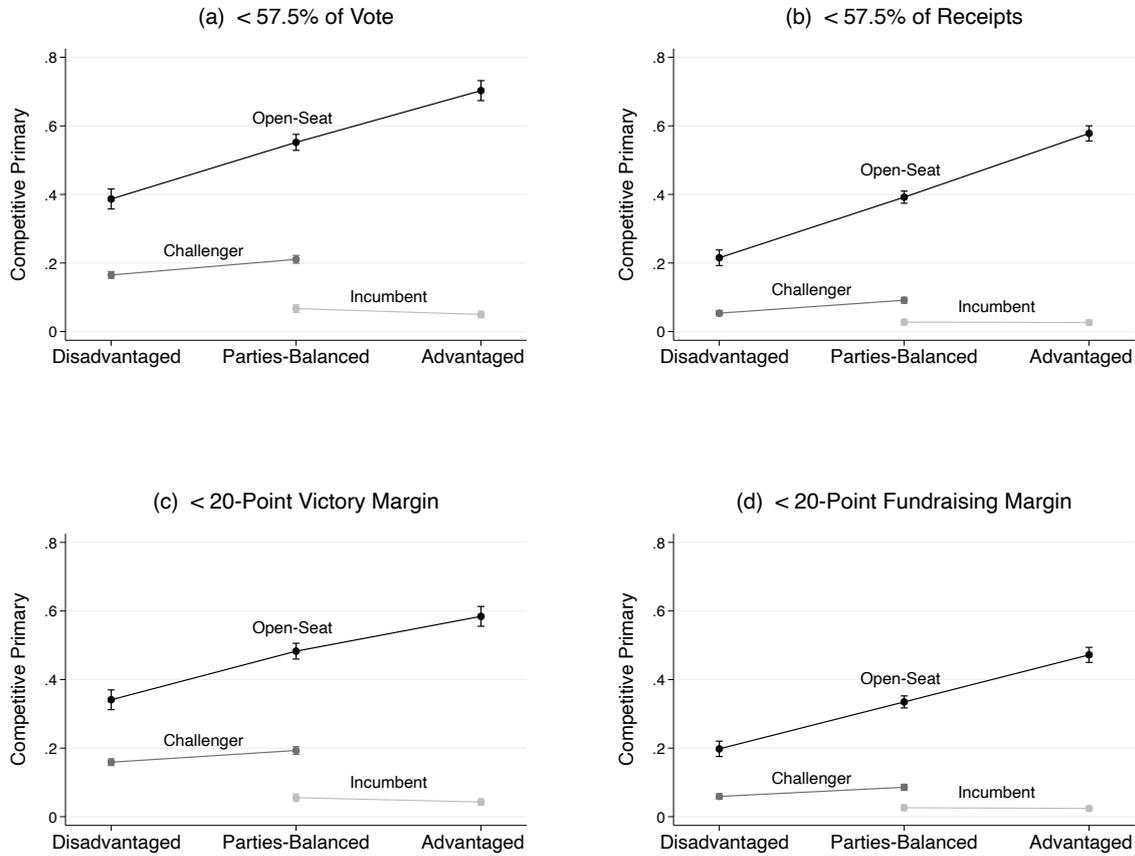


FIGURE 7.4 Primary Competition for the US House by Party Type and Incumbency

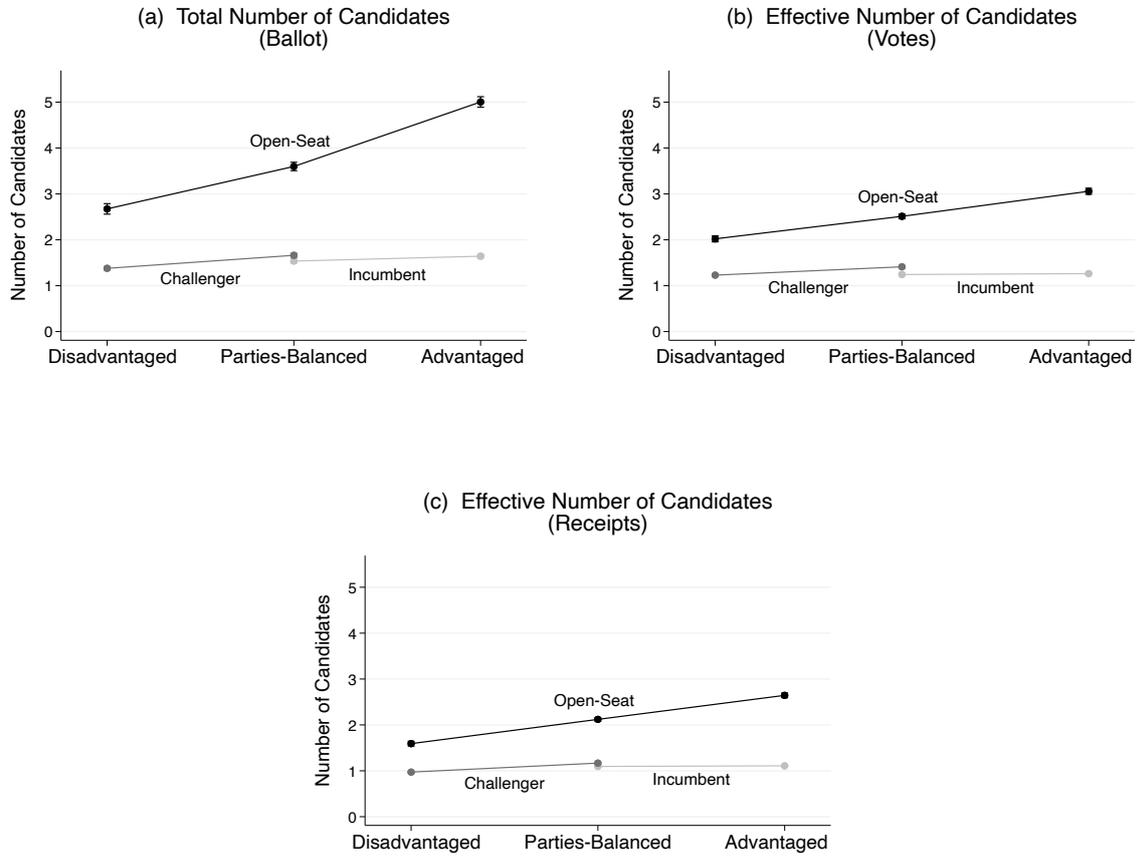
Note: This figure is taken from Hirano and Snyder (2019, 179). The top left graph shows the percentage of primaries that were contested, where at least two candidates received more than 1 percent of the vote. The top right graph shows the percentage of primaries that were competitive, where the winner received less than 57.5 percent of the vote. The bottom left graph shows the number of candidates who received more than 1 percent of the vote. The bottom right graph shows the votes cast for all losing candidates as a percentage of the total votes.

Figure A.5: Likelihood of Competitive Race By Primary Type With Vote-Share and Fundraising Measures, From Table 1



Note: Values are generated from the models in Table 1. The dependent variable in graphs (a) and (b) is whether the winner received less than 57.5 percent of the vote and whether the top fundraiser received less than 57.5 percent of all receipts, respectively. The dependent variable in graphs (c) and (d) is whether the winner's victory margin was within 20 percentage points of the second highest vote-getter and whether the top fundraiser's fundraising margin was within 20 points of the second highest fundraiser, respectively. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies.

Figure A.6: Expected Number of Candidates By Primary Type With Vote-Share and Fundraising Measures, From Table 2



Note: Values are generated from the models in Table 2. The dependent variable in graph (a) is the total number of candidates on the ballot, and the dependent variable in graphs (b) and (c) is the effective number of candidates based on votes and receipts, respectively, calculated with the formula outlined in the paper. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies.

Table A.2: Competition Looks Better With Vote-Share Measures, Especially in Open Seats

	(1) Difference in Competitive ($< 57.5\%$)	(2) Difference in Competitive (20-Pt Margin)	(3) Difference in Candidates (Total-Effective)	(4) Difference in Effective (Votes-Receipts)
Open Seat	0.14** (0.02)	0.12** (0.02)	0.79** (0.06)	0.28** (0.03)
Challenger Party	0.08** (0.01)	0.07** (0.01)	0.09** (0.02)	0.10** (0.01)
Parties-Balanced	0.02 (0.01)	0.02 (0.01)	0.26** (0.03)	0.04** (0.01)
Advantaged-Party	0.01 (0.01)	0.01 (0.01)	0.23** (0.03)	0.03 (0.02)
Open Seat x Parties-Balanced	-0.02 (0.02)	-0.01 (0.02)	0.24** (0.06)	-0.04 (0.03)
Open Seat x Advantaged-Party	-0.04 (0.02)	-0.03 (0.02)	1.05** (0.07)	-0.03 (0.03)
Constant	0.06 (0.05)	0.09 (0.05)	0.90** (0.16)	0.29** (0.08)
Number of Observations	16,326	16,326	16,326	16,326
R-squared	0.08	0.07	0.30	0.16

Note: Results are from OLS regressions from 1980 to 2020. Standard errors are in parentheses. The dependent variable in Models 1 and 2 is the difference in whether the primary is competitive with the 57.5 vote-share and fundraising measures and the difference in whether the primary is competitive with the 20-point victory and fundraising margin measures, respectively. The dependent variable in Models 3 and 4 is the difference between the total and effective number of candidates (based on receipts) and the difference between the effective number of candidates based on votes and receipts, respectively. Positive coefficients indicate that primaries are more competitive with vote-share measures than with fundraising measures. The models include district and year fixed effects. * $p < 0.05$, ** $p < 0.01$. Predicted values are plotted in Figure 2.

Table A.3: Relationship Between Seat Type and Competitive Primary Across Measures, With Self-Funded Candidate in Primary

	(1) Competitive < 57.5% (Votes)	(2) Competitive < 57.5% (Receipts)	(3) Competitive 20-Pt Margin (Votes)	(4) Competitive 20-Pt Margin (Receipts)
Open Seat	0.31** (0.02)	0.21** (0.02)	0.28** (0.02)	0.20** (0.02)
Challenger Party	0.15** (0.01)	0.10** (0.01)	0.15** (0.01)	0.09** (0.01)
Parties-Balanced	0.06** (0.01)	0.07** (0.01)	0.05** (0.01)	0.06** (0.01)
Advantaged-Party	0.03* (0.01)	0.07** (0.01)	0.03* (0.01)	0.05** (0.01)
Open Seat x Parties-Balanced	0.12** (0.03)	0.15** (0.02)	0.08** (0.03)	0.08** (0.02)
Open Seat x Advantaged-Party	0.32** (0.03)	0.36** (0.03)	0.24** (0.03)	0.28** (0.02)
Self-Funded Candidate in Race	0.32** (0.02)	0.12** (0.02)	0.26** (0.02)	0.09** (0.02)
Constant	0.10 (0.07)	-0.04 (0.06)	0.03 (0.07)	-0.06 (0.05)
Number of Observations	9,110	8,947	9,110	8,947
R-squared	0.29	0.26	0.23	0.20

Note: Results are from OLS regressions from 2000 to 2020. Standard errors are in parentheses. The dependent variable in Models 1 and 2 is whether the winner received less than 57.5 percent of the vote and whether the top fundraiser received less than 57.5 percent of all receipts, respectively. The dependent variable in Models 3 and 4 is whether the winner's victory margin was within 20 percentage points of the second highest vote-getter and whether the top fundraiser's fundraising margin was within 20 points of the second highest fundraiser, respectively. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies. The models include district and year fixed effects. *p<0.05, **p<0.01.

Table A.4: Relationship Between Seat Type and Number of Candidates Across Measures, With Self-Funded Candidate in Primary

	(1) Total Number of Candidates (Ballot)	(2) Effective Number of Candidates (Votes)	(3) Effective Number of Candidates (Receipts)
Open Seat	1.44** (0.10)	0.92** (0.06)	0.74** (0.05)
Challenger Party	0.27** (0.05)	0.26** (0.03)	0.22** (0.02)
Parties-Balanced	0.67** (0.05)	0.32** (0.03)	0.33** (0.02)
Advantaged-Party	0.59** (0.06)	0.31** (0.03)	0.36** (0.03)
Open Seat x Parties-Balanced	0.61** (0.12)	0.27** (0.07)	0.27** (0.05)
Open Seat x Advantaged-Party	2.13** (0.13)	0.88** (0.07)	0.86** (0.06)
Self-Funded Candidate in Race	1.55** (0.10)	0.80** (0.05)	0.42** (0.04)
Constant	1.72** (0.29)	1.24** (0.16)	0.85** (0.13)
Number of Observations	9,110	9,110	8,947
R-squared	0.44	0.39	0.36

Note: Results are from OLS regressions from 2000 to 2020. Standard errors are in parentheses. The dependent variable in Model 1 is the total number of candidates on the ballot, and the dependent variable in Models 2 and 3 is the effective number of candidates based on votes and receipts, respectively, calculated with the formula outlined above. The baseline categories are incumbent-contested primaries and disadvantaged-party constituencies. The models include district and year fixed effects. *p<0.05, **p<0.01.

Table A.5: Difference in Competition Between Measures, With Self-Funded Candidate in Primary

	(1) Difference in Competitive (< 57.5%)	(2) Difference in Competitive (20-Pt Margin)	(3) Difference in Candidates (Total-Effective)	(4) Difference in Effective (Votes-Receipts)
Open Seat	0.11** (0.02)	0.10** (0.03)	0.75** (0.08)	0.21** (0.04)
Challenger Party	0.04** (0.01)	0.05** (0.01)	0.04 (0.04)	0.03 (0.02)
Parties-Balanced	-0.00 (0.01)	0.01 (0.01)	0.37** (0.04)	0.02 (0.02)
Advantaged-Party	-0.02 (0.01)	-0.01 (0.02)	0.26** (0.05)	-0.01 (0.02)
Open Seat x Parties-Balanced	-0.05 (0.03)	-0.01 (0.03)	0.28** (0.09)	-0.04 (0.05)
Open Seat x Advantaged-Party	-0.05 (0.03)	-0.05 (0.03)	1.22** (0.10)	-0.02 (0.05)
Self-Funded Candidate in Race	0.19** (0.02)	0.18** (0.02)	1.13** (0.08)	0.39** (0.04)
Constant	0.14* (0.07)	0.07 (0.07)	0.85** (0.23)	0.38** (0.11)
Number of Observations	8,947	8,947	8,947	8,947
R-squared	0.11	0.09	0.38	0.21

Note: Results are from OLS regressions from 2000 to 2020. Standard errors are in parentheses. The dependent variable in Models 1 and 2 is the difference in whether the primary is competitive with the 57.5 vote-share and fundraising measures and the difference in whether the primary is competitive with the 20-point victory and fundraising margin measures, respectively. The dependent variable in Models 3 and 4 is the difference between the total and effective number of candidates (based on receipts) and the difference between the effective number of candidates based on votes and receipts, respectively. Positive coefficients indicate that primaries are more competitive with vote-share measures than with fundraising measures. The models include district and year fixed effects. *p<0.05, **p<0.01.