Candidate Exit in the Presidential Nomination Process:
Whose Gains from Early Withdrawals?

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Abstract

Two recent features of the presidential selection process, heavy front-loading and early candidate withdrawal, have the potential to greatly diminish voters’ influence over the choice of the presidential nominees, but there are no studies of how these related phenomena have affect nomination outcomes. When candidates withdraw from the race before any votes have been cast because they believe that they cannot compete with a well-financed front-runner, there is good reason to be concerned that voters’ choices are being narrowed before they have any say in the matter and, as a result, they are forced to choose a candidate who is only satisfactory, instead of one they truly prefer. This is also a problem for parties because lackluster campaigners may win the nomination based more upon their ability to raise money than their ability to excite the electorate. In this paper, we use data from the Iowa Electronic Markets (IEM) to argue that, while these concerns are valid, there is reason to believe that early candidate withdrawal may actually give voters more viable choices by giving a less viable candidate a better opportunity to obtain the resources necessary to wage a stronger campaign against an early front-runner.
Political scientists have studied the current presidential nomination process intensely for well over two decades (e.g. Aldrich 1980; Keech and Matthews 1976), but our understanding remains incomplete, in part because while the process continues to change, systematic analyses remain rooted in our first examinations of the reformed process. As such, the most comprehensive research on the nomination process (e.g. Aldrich 1980; Bartels 1988) focuses upon how momentum from the early primary states propels a few candidates toward the nomination, while winnowing out the remainder of the field. The primaries are still responsible for the final winnowing of candidates and selection of the nominees, but a consequential change in the post-reform process has emerged in the last two nomination campaigns; specifically, the winnowing out of many announced and well-qualified candidates for the nomination in the year prior to the first official primaries or caucuses.

In the 1995, a three-term Senator from Pennsylvania, Arlen Specter, and the governor of California, Pete Wilson, ended their campaigns for the Republican nomination before any votes had been cast, citing an inability to raise the money necessary for a competitive campaign. Again in 1999, the early casualties included a popular former Cabinet secretary, a former governor, and a former Vice President; all dropping out of the race because of a lack of public support and financial resources.

While some authors have shifted their focus to the period before the primaries (e.g. Buell 1987; Buell 1996; Mayer 1996), our scholarly understanding of the nomination process still revolves around momentum, as explored in the pioneering work of Aldrich (1980) and Bartels (1988). Momentum, as reflected in Rep. Morris Udall’s colorful description:

It’s like a football game, in which you say to the first team that makes a first down with ten yards, “Hereafter your team has a special rule. Your first downs are five yards. And if you make three of those you get a two-yard first down. And we’re going to let your first touchdown count twenty-one points. Now the rest of you bastards play catch-up under the regular rules” (quoted in Aldrich 1980; Bartels 1988; Orren and Polsby 1987; Patterson 1994; Popkin 1991),

is an explanation of candidate’s ability to succeed based upon activity that occurs during
the primaries. As Bartels (1988) points out, momentum was valuable in the first campaigns after the McGovern-Fraser reforms because success in early contests allowed little-known and under-funded candidates to build up the name recognition and financial resources to succeed in later contests. This belief, shared by professional practitioners and political scientists alike, is reflected in a memo written by Hamilton Jordan, Jimmy Carter's 1976 campaign manager:

Late April and early May primaries will dictate difficult and strategic decisions on the allocation of resources. Lack of funds and time will restrict us from running a personal campaign in every state. Hopefully, good press in the early primaries will have solved some of our name-recognition problem and given Jimmy Carter some depth to his new national image. Nevertheless, there will be ten primaries in two weeks. If by this point we have knocked Wallace off and led the field in a primary or two, we will be in a strong position to raise funds and enter them all (emphasis added, quoted in Witcover 1977, 137).

The premise underlying this quote is that having high levels of public support and sufficient resources on hand at the beginning of the primary season for the whole primary season is not necessary. Rather, if a candidate with few resources can do better-than-expected in the early contests, there will be time to replenish resources for the later contests. There is reason, however, to believe that this view of momentum needs to be modified.

The greater frequency of early candidate exit has been accompanied, if not caused, by political professionals’ reassessment of the ability of momentum in the primaries to rejuvenate a campaign that had showed little strength prior to the first contests. Almost every candidate who withdrew from the nomination in 1995 and 1999 cited financial problems as the reason for withdrawal, even though most of these candidates had raised enough money to get through the early stages of the campaign. There is a belief, however, that the front-loaded schedule does not give candidates low on cash enough time to use early victories to raise more money for the subsequent contests. Compare the quote from Jordan’s memo with this account of the press conference in which Dan Quayle dropped out of the 2000
Mr. Quayle said that his New Hampshire campaign chairman, former Gov. John H. Sununu ... had convinced him that he had a reasonable shot at winning the primary there, and his own polls showed him gaining, aides said. But even if he won New Hampshire, Mr. Quayle said, he concluded that he could not afford to compete with Mr. Bush in the 18 contests that will occur within 30 days afterward (emphasis added, New York Times, September 28, 1999).

The contrast between the beliefs expressed in this statement and in Jordan’s memo could not be clearer. Candidates and their advisers now believe that there is not sufficient time for an early success to generate the resources necessary to run an effective campaign with a heavily front-loaded primary schedule. As a result, candidates are concluding that there is little point in even contesting the early contests that previous candidates had believed could propel them toward the nomination if they do not have the resources to build a national campaign before the first primaries.

Substantively, studying this new phenomenon of early candidate exit is important because political scientists do not know how it affects the outcome of the nomination process, especially a heavily front-loaded one that demands greater available resources before the beginning of the primary season. The greater frequency of early withdrawal could be harmful to front-runners because it allows an “opposition” to unite behind fewer candidates, who gain the opportunities to raise money and receive media exposure and needed to compete with the front-runner on more equal footing. It could, however, also benefit front-runners as early withdrawals make it easier for them to identify and target their serious challengers earlier in the race, thereby making it more difficult for underdogs to have the unexpectedly strong performances necessary to gain the momentum that will compensate for their relative lack of resources. Alternatively, the benefits of exit may depend, not upon competitive position, but upon the relative ideological positions of the candidates withdrawing from the race and those remaining.

Normatively, exit is important to our understanding of the presidential selection process.
because the goal of recent reforms was to allow the mass public to have greater influence in choosing the nominees. As part of these reforms, the McGovern-Fraser Commission advocated a process where none of the delegates was determined in the year prior to the convention (Polsby 1983). But if the process that helps determine which candidates will control the delegates is influenced greatly during this year, then that reform has been effectively abandoned, and we may wonder if voters have much influence in selecting the presidential candidates. And while we may find that Udall's description of momentum is still appropriate, we may have to conclude that momentum is now generated as much by the results of the money primary as those of the popular primary — a change in the presidential selection process from one determined by voters to one determined by a group of financial contributors. In short, there is both a substantive and normative importance to understanding the effect of candidate exit upon the nomination process because it allows us to better evaluate voters' influence over the selection of the president through the current nomination system.

In the first section, we examine exit as an integral part of the nomination campaign and develop our hypotheses for how early withdrawal affects the remaining candidates' chances of winning the nomination. In the second section, we describe the quantitative model that we use for investigating the hypotheses that front-runners and ideological competitors of those candidates exiting benefit most when candidates exit the nomination campaign. In the third section, we present our findings. Finally, we discuss our conclusions in terms of how they broaden our understanding of the nomination process.

1 Early Withdrawal and the Nomination Process

This paper's view of the nomination process is simple: candidates ultimately win the nomination by knocking all of their competitors out of the race. Candidates use momentum and superior resources to achieve this goal, and both have been a large part of the post-reform
nomination process. The influence of momentum has received most of the attention, but some accounts (e.g. Hadley 1976) have recognized that the decisions of potential candidates not to run have influenced the outcome of the nomination process. For one example, Witscover (1977, 132) writes that people in Carter’s 1976 campaign initially hoped that Sen. Edward Kennedy would run to keep other challengers out of the race, until they realized that “the proliferation of liberal candidates [that Kennedy’s decision] set loose could be beneficial to Carter.” Of course, had fewer liberal candidates run, Mo Udall might have had a different attitude toward momentum. The basic point is that whoever wins the nomination is determined, at least in part, by who gets in and who does not; by who can stay in and who cannot.

To the extent that the composition of the field has been studied at all (e.g. Abramson, Aldrich and Rohde 1987; Hadley 1976), the focus has been more on how candidates decide to enter the race than the effect of these decisions upon the outcome of the race. But even analysis of candidates’ decisions in earlier campaigns not to enter would miss the influence of the more current exit phenomenon because of the difference between candidates who decide not to enter before the pre-primary campaign has begun and those who exit during the pre-primary period.1 Kennedy’s 1974 decision, for example, led other candidates to enter the race. As a result, potential candidates’ decisions not to enter still provide voters with the choice of other well-qualified candidates, and may even provide voters with more choices. The initial 1976 field, for example, included a U.S. Representative, four current or former U.S. Senators, and four current or former governors.2 When candidates who have entered the race quit only months before the first primaries, there is, however, no time for other candidates to jump into the fray, and voters have significantly fewer choices. The 1995 early withdrawals left three Senators, one former governor, and one U.S. Representative in

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1We distinguish a pre-primary period, when candidates have announced, from an invisible primary, when candidates are exploring their prospects.

2This list does not count the primary season entry of Gov. Jerry Brown and Sen. Frank Church.
the race, and Republican voters in 2000 will choose from a field with only two Senators and one governor — fewer candidates with experience in elective office than in any other race for the out-party’s nomination since the McGovern-Fraser reforms. For this reason, the phenomenon of early exit provides different concerns for voters’ ability to select the president than earlier decisions not to enter.

The fact that recent early candidate withdrawals do not allow other candidates to enter the race means that we can estimate the effects of these exits. Benefits of one candidate’s exit are captured by at least one other candidate in the race; although, other remaining candidate or candidates’ chances could be hurt if the departing candidate was expected to split the opposition. The question that our analysis seeks to answer is how the remaining candidates’ chances are affected by another candidate’s early withdrawal.

To analyze this question, we classify candidates on two dimensions: viability and ideology. Competition between candidates for the nomination often develops along these lines as underdogs try to bring a front-runner back to the pack and candidates representing the moderate or extreme factions within a party vie with one another to be “the” representative of that faction’s voters (Gurian, Dunn and Haynes 1998). We believe that a candidate’s withdrawal from the race will be reflected in how it affects these competitive dimensions.

1.1 Front-Runners vs. Underdogs

One reasonable hypothesis is that early withdrawal mainly benefits front-runners. We can see this by thinking about the effect of the number of candidates upon the probability of selecting a Condorcet winner. If a Condorcet winner exists, it is most likely to be the front-runner.\footnote{There is no reason that the front-runner must be the Condorcet winner. Brams and Fishburn (1983) show an example where a third-place candidate in a field of three was the Condorcet winner.} For one thing, most underdogs, particularly those who are less well-known than the front-runner, would never start the primary season as a Condorcet winner because voters are not inclined to vote for someone about whom they have little information. For
another, early front-runners often hold a majority preference in the early nationwide polls. As the number of candidates decreases, the probability that a Condorcet winner will be chosen in a plurality election increases (Mueller 1989, 115), meaning we might expect the front-runner to benefit the most as the election narrows to a two-candidate affair.⁴

Thinking about the problem in terms of Condorcet winners provides useful intuition for why the front-running candidate will be aided most by another candidate’s withdrawal, but it is really difficult to determine concretely which, if any, candidate is a Condorcet winner during this period of the nomination race. Because voters are relatively uninformed during this period (Keeter and Zukin 1983), there is little reason to believe that even majority preference in a poll represents much more than differences in name recognition. Furthermore, the composition of the field as the campaign progresses will influence people’s information about the candidates because different combinations of active candidates will cause different agendas to be raised. Given different salient issues, some candidates will be viewed more or less favorably by the public and, therefore, will have a greater or lesser chance of winning the nomination. So while we believe that some understanding of the relationship between Condorcet winners and the number of candidates will often provide the conditions under which front-runners benefit from early candidate withdrawal, we cannot rest this hypothesis solely upon this basis.

Withdrawal could, however, help front-runners because of front-runners’ resource advantages. While underdogs try to gain momentum in a few select early states, front-runners are expected to run a national campaign (Aldrich 1980; Gurian 1986). Having a large number of competitors often requires the front-runner to spread resources across a greater number of states, thereby, increasing the probability of losing any given state. In 1996, for example, Bob Dole’s need to contest the Delaware primary against Steve Forbes may have put him in the position where he was less prepared to run against Forbes and Pat Buchanan a few days

⁴It is also possible that a front-runner who is not a Condorcet winner will become one as the field is narrowed.
later in Arizona, where a third-place finish could have seriously undermined his campaign. With fewer candidates in the race, the front-runner can concentrate campaign resources in fewer states where challengers are strong, while still devoting resources to other states and building a national campaign organization that the underdogs cannot match. For this reason, front-runners are in a position where it is easier to beat the remaining underdogs in the early states, thereby depriving them of essential momentum, while remaining strong enough elsewhere to reverse any momentum that an underdog might receive from an early victory.

Similarly, a small field better allows front-runners to use superior resources to focus an issue agenda to respond to one or two specific candidates, making it harder for these candidates to move up in the polls. In 1984, Walter Mondale thought his main challenge would come from John Glenn, leading Mondale to address one set of concerns while initially ignoring Gary Hart’s campaign of “New Ideas.” A smaller field may also reduce underdogs’ opportunities to achieve the “surprising” performance that generates the momentum they need to become viable. With fewer candidates in the race, it is easier for the media track an underdog’s progress, thereby raising that candidate’s expectations and making it more difficult to deliver better-than-expected performance that creates momentum. So with fewer candidates in the race, front-runners may be less vulnerable to challengers’ momentum in early contests.

On the other hand, the withdrawal of other candidates from the field can also benefit the remaining underdogs because those candidates receive more of the resources they need, such as free media time, with which to mount a more credible campaign. In a large field, the media may have to hedge bets concerning which underdog is most likely to challenge the front-runner, making it harder for any particular one to receive the coverage necessary to become familiar to or seen as viable by voters. Likewise, financial contributors opposed to a front-runner may fail to concentrate their donations on any one candidate, making
a number of candidates better off, but no one candidate well-enough off to challenge the front-runner credibly. When a clear challenger finally emerges and receives these resources, the front-loaded primary season may make it too late for that candidate to take advantage. As long as the votes and other resources of the front-runner’s challengers remain divided across several candidates, the front-runner remains in a fairly secure position. Of course, it is possible that both front-runners and some subset of the underdogs benefit from early withdrawal. In this case, the question is whether one benefits more than the other.

1.2 Moderates vs. Extremists

Voters who do not support the front-runner, of course, will not throw their support indiscriminately to the other candidates if their favorite withdraws. Rather, changes in the support for the remaining candidates depend upon how well these candidates represent various factions within the party. In 1996, for example, most supporters of Pete Wilson probably preferred Dole to Buchanan even as they had a clear preference for Wilson over Dole. The degree to which all candidates benefit from early exit should depend upon the degree to which the departing candidate competed with the remaining candidates for the support of particular factions within the party.

A number of authors (e.g., Aldrich 1980; Brams 1978; Polsby 1983) have described the nomination race as one that involves candidates of various ideological groups vying to become the representative of their group in the final field of candidates who survive the initial winnowing process. In short, the moderate candidates fight among one another to become the surviving candidate against the surviving extreme candidate, who also faces a similar battle among the more extreme candidates. Without this, a majority faction would split its votes among several candidates, leading to a unified minority faction candidate’s nomination — the case to which Carter’s advisers were referring once Kennedy decided not to run in 1976. Similarly, a divided minority faction could lose an opportunity to nominate
its preferred candidate when the majority faction cannot agree upon a single candidate. We believe, therefore, that the degree to which the remaining candidates are aided by another candidate's early withdrawal is conditional upon the ideological proximity of that candidate to the surviving candidates.

To summarize, our basic hypotheses about the effect of early candidate withdrawal upon the race are:

1. The front-runner is the primary beneficiary of candidate exit.
2. The degree to which surviving candidates benefit from a candidate's exit is a function of their ideological proximity to the candidate withdrawing.

Clearly, it would not be surprising to find that candidate exit has no effect upon the remaining candidates' chance of winning the nomination. After all, candidates withdraw from the race because they believe they cannot win. But for the reasons we have sketched out above, the fact that they have little chance of winning does not imply that their withdrawal does not influence who does win. Furthermore, many of these candidates' chances cannot be discounted completely at this stage in the race because there is always the possibility that well-qualified underdogs can use momentum to emerge from nowhere. Finally, to the extent that the nomination process is one of elimination, candidate withdrawal does represents progress for at least one of the remaining candidates. So until we investigate this question, there will be a gap in our substantive understanding of the current nomination process and our normative understanding of voters' ability to select the president. In the next section, we detail how we test our hypotheses.
2 Estimating the Effect of Candidate Exit

2.1 The Data

To test our hypotheses, we examine the average daily candidate share prices in the “winner-take-all” (WTA) Iowa Electronic Markets (IEM) Republican Presidential Nomination markets for 1996 and 2000. The IEM offers traders the opportunity anonymously to buy and sell shares tied to the electoral fortunes of either individual or groups of candidates (the “rest of field”). The WTA market, as the name implies, is an all or nothing opportunity that pays $1.00 for a winning candidate share and $0.00 for losing candidate shares. At any given moment prior to the vote on the convention floor the share price of a given candidate in the WTA market reflects that candidate’s probability of winning the Republican Party’s nomination. Recent work on presidential campaigns demonstrates the sensitivity and seemingly rational response of IEM share prices to “significant” campaign events (Forsythe, Nelson, Neumann and Wright 1992; Shaw and Roberts 1996). Another interesting and important finding, one consistent with a reasonably strong claim of market efficiency, is that the release of opinion poll data had no discernible effect on market prices (Forsythe et al. 1992).

The predictive power and general superiority of IEM share prices relative to poll data in the context of US presidential elections is well-documented (Forsythe, Nelson, Neumann and Wright 1991; Forsythe et al. 1992). In spite of such evidence of accuracy and market

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5 Even though, the two races that we examine take place in the Republican party, but there is little reason to believe that, absent a sitting incumbent and heir apparent in 1996 and 2000, respectively, the Democratic Party's process is different on this account.

6 The IEM data can be interpreted directly in terms of probabilities because traders buy and sell contracts if they believe that the current price of a given contract is less than or greater than, respectively, the “true” expected value of the contract. But the expected value is simply the sum of the possible values multiplied by the probability of obtaining that value. In this case, the only non-zero value is the $1 payoff per contract for the winning candidate, meaning that the price captures the probability component of the expected value.

7 Our data analysis corroborate this finding. For this reason, the models below do not include results from public opinion polls as a covariate.

8 The predictive power of the IEM political markets is demonstrated in a second, concurrent presidential market, called the “Vote Share” market, in which candidates' share prices pay off in direct proportion to the share of the popular vote received by the candidates. In the 1988 and 1992 presidential election markets the
efficiency, there remains plenty of room to question whether the observed IEM reactions to campaign events such as candidate exits are meaningful in any substantive sense. To bolster such claims considerably, recent studies of the 1992 election have found a significant relationship between movement of WTA share prices in the IEM and changes in politically sensitive industry portfolio returns in US equity markets (Cram, Herron, Lavin and Silver 1994; Roberts 1994). This link to national financial markets lends significant weight to the claim that IEM traders are reacting to “real” events. Financial market reactions are inherently prospective and discount completely the impact of any campaign event that is not likely to have a lasting effect on voter preferences.

For the purposes of our study, the IEM data provide the best way to examine the effect of exit upon the outcome of the campaign. Public opinion polls, for example, cannot provide the information available in the IEM data because polls do not measure viability directly. Without question, preference and viability are linked, but they are clearly different. To illustrate, imagine a hypothetical three-person nomination campaign. Let’s say we have two moderate candidates and a conservative candidate. Furthermore, let’s say that the public support for the moderate candidates is split 40-20, leaving 40% for the conservative candidate. Under these circumstances, it is not reasonable to say that the conservative and the more popular moderate have equal chances of winning. Reasonably sophisticated observers of the nomination process can figure out that once the early winnowing has taken place, the remaining moderate is likely to have a sizable lead over the conservative. Simply put, public opinion polls are not useful for our analysis because, as this example shows, you cannot make a linear transformation of popular preferences into probabilities.

Public opinion polls also present other problems. In a sequential race, it is difficult to determine how to aggregate different polls in different geographical domains to come up with a candidate’s overall chances of winning the nomination. Someone who believes that closing prices (the predicted vote shares) in the IEM (known then as the Iowa Presidential Stock Market) came within less than 1% of the actual vote share. This far surpassed the accuracy of public opinion polls.
momentum is very important might give a heavy weight to public standing in Iowa and New Hampshire, while someone else might believe that national polls are a better predictor of success. Our ability to translate these polls into viability would depend upon our beliefs about the process. The IEM data aggregates these beliefs across traders, thereby making the influence of any one trader's beliefs, and errors associated with those beliefs, smaller than would be the case if we determined candidates' viability.\textsuperscript{9}

The polls are also deficient because of the relative lack of polls during the pre-primary season. In estimating the effect of a candidate's exit upon the rest of the field, it would be easy to attribute some change in another candidate's poll standings to candidate withdrawal when that candidate's support was already increasing prior to the other candidate's decision to exit. Perhaps one could interpolate, but that could easily understate the effect of exit. Other measures of viability, such as changes in candidates' resources, would pose similar problems because candidates often cannot take immediate advantage of other candidates' withdrawals. Attributing changes in fund-raising to a particular candidate's exit, for example, could be confounded with many other factors responsible for these changes, such as whether or not a candidate had previously planned a series of fund-raisers, and would still leave us with the problem of transforming a change in fund-raising into a change in a candidate's probability of winning the election. There are other complications that arise from evaluating strength of candidates' support or determining effects of sophisticated versus sincere revelation of preference, but the fundamental point is that the errors in performing some non-linear transformation of some aggregation of sporadic data into probabilities are surely greater than the errors in the direct measure of probability that we get from the daily IEM data.

\textsuperscript{9}There is also virtue in relying upon data generated by people other than the authors. While one might otherwise employ some survey of "expert opinion," there is no way to obtain this data in "real-time," as we can for the IEM data.
Pat Buchanan. There was another contract for Steve Forbes, but this contract was not "spun off" from the "Rest of the Field" (RCROF) contract until January 1996, after all pre-primary candidate exits had taken place. In 2000, we concentrate upon the George W. Bush, Steve Forbes, Elizabeth Dole (prior to her exit), and RCROF/John McCain contracts.

2.2 Estimation

In order to evaluate the effects of candidate exit, we estimate a model that is known as an "intervention" (Box and Tiao 1975) model. The underlying logic of an intervention model is that a time-series process moves along as a function of some set of explanatory variables, possibly including lags of the dependent variable. At times during the series, events occur that dramatically alter the values of the series. In our case, candidates' probabilities of winning the nomination (i.e. the contract prices) are the relevant systems and events that take place during the campaign, such as candidates withdrawing from the field, represent exogenous shocks to the system. The fundamental model is specified accordingly:

\[
\text{Price}_{jt} = \alpha + \sum_{p=1}^{2} \mu_p \text{Price}_{jt-p} + \sum_{i=1}^{k-1} \sum_{p=1}^{2} \gamma_{ip} \text{Price}_{i\neq j, t-p} + \sum_{p=0}^{2} \beta_p \text{Exit}_{t-p} +
\]

\[10\] The IEM starts with a few "candidate specific" contracts, in 1996 these were contracts for Dole and Gramm, and a single contract for everyone else in or out of the field (ROF). The IEM "spins off" new contracts when any candidate for whom there is no existing contract has gained sufficient standing in the race to become a major candidate. At that point, every trader with a share of the RCROF contract receives an additional share of the contract for the new candidate and the prices change accordingly.

\[11\] The McCain contract was not "spun off" from the RCROF contract until after all of the pre-primary candidate exits in 2000, but there are some reasons why it is easier to interpret the RCROF contract as reflecting McCain's chances of winning than it was for Forbes in 1996. First, the Forbes contract was the fourth spun off in 1996, after contracts for Alexander, Buchanan, and Colin Powell were created on February 16, August 8, and October 9, respectively. It is difficult to determine, prior to October 9, how much of the RCROF reflected Forbes's chances of winning. By contrast, the McCain contract was the first spun off from the RCROF contract in 2000. Admittedly, we cannot be certain how much of the RCROF contract reflects McCain's chances because the candidates covered under that contract also include Alexander and Buchanan. We believe, however, that the results below support our assumption that much of the value of the RCROF contract reflects beliefs about McCain's chances of winning the nomination. In addition, we can be very certain that Alexander's component of the RCROF contract is effectively zero after his withdrawal, and we are also confident a priori that Buchanan's prospects were never perceived highly, considering that his price in the 1996 market barely exceeded $.15, even after he won the New Hampshire primary.
\[
\sum_{p=0}^{2} \beta_{p+3} \text{StrawPoll}_{t-p} + \epsilon_t
\]  

Essentially, we estimate a single-equation regression model with two \((p)\) lags of the dependent variable, the contract price at time \(t\) for the \(j^{th}\) candidate, the concurrent and lagged values of the contract prices for the other \(k - 1\) candidates, the exit intervention with two lags, and an intervention for pre-primary straw polls with two lags.\(^{12}\) For each race, we estimate a model with a single set of parameters for all exits and another model with a set of parameters for each candidate’s withdrawal.

Our measure of candidate exit is the date on which a major candidate for the nomination announces withdrawal from the race.\(^ {13}\) Candidates’ announcements of exit are not necessarily the best measure because there is often speculation about a candidate’s withdrawal in the days prior to the official announcement that traders already consider in setting the candidates’ prices. As we note below, such speculation is not always borne out. Furthermore, we believe that using the date of announcement is the only objective way to determine exit.

The data provide some problems for our analysis that we do need to address.\(^ {14}\) The first is that a candidate’s decision to exit is not necessarily an exogenous shock. As we see from the quotes in the introductory section, candidates withdraw when they believe that their probability of winning the nomination has become smaller than some self-determined acceptable level. During the primary season, this is likely to come as the result of performing below expectations in some very public event, like a primary or caucus, that simultaneously influence the remaining candidates’ chances of winning. During the pre-primary season, however, candidates usually withdraw because they have not met fund-raising goals or payroll. How such problems influence a candidate’s willingness to withdraw, particularly months before the real campaign tests, are much less public.\(^ {15}\) In these cases, it is rare that

\(^{12}\)The two-lag specification was determined using Akaike’s information criteria (AIC). In 1995, the straw polls were held in Iowa and Florida. In 1999, there was only an Iowa straw poll.

\(^{13}\)These dates are listed in the appendix.

\(^{14}\)Note, however, that we would not avoid any of these problems by using poll data.

\(^{15}\)While rumors about a campaign’s struggles may receive some attention in the press, candidates usually
the specific date of announcement is dependent on any other event that systematically affects the other candidates' chances of winning the nomination. Rather, a candidate who has been struggling for many months suddenly withdraws and the other candidates' probabilities react in some fashion.\(^{16}\) To the best of our knowledge, no one has proposed, much less demonstrated, a systematic means of predicting when candidates will exit during the primary season, and for this and the above reasons, we believe it is appropriate to treat candidate exit as an exogenous intervention.\(^{17}\)

The next problem is that all of the series violate the assumption of stationarity that is key for many estimation procedures in time series. To address this problem, we estimate autoregressive distributed lag models, which are shown by DeBoef and Granato (1997) to control for the problems of over-rejection of false null hypotheses in integrated data.\(^{18}\) Estimating the models with two lags also removes problems with serially-correlated errors.

A final problem is that because the contract prices must sum to a number close to 1, an increase in one contract implies a decrease in the price of at least one other contract. In this sense, the contract prices are not independent of each other. If some event that influenced one of the other candidate's chances of winning the nomination also influenced a candidate's decision to withdraw, then the effect of exit upon a remaining candidate's chances would be biased. One way to estimate the effects of integrated data without implying any causal relations between the endogenous variables is to run a vector error correction model (VECM), which uses, in our cases, a single cointegrating equation to control for the

\(^{16}\)One exception to this pattern is Lamar Alexander's withdrawal from the 2000 campaign just days following his performance in the Iowa Straw Poll. And even here, the straw poll did not represent a reversal of fortunes that led him to withdraw, but a failure to jumpstart a moribund candidacy. Nonetheless, we are aware that some of the effects of Alexander's withdrawal are related to other candidates' performance in the Iowa Straw Poll.

\(^{17}\)See Norrander (1999) for an examination of when the last remaining candidates should withdraw during the primary season.

\(^{18}\)Using Augmented Dickey-Fuller tests, the data were determined to be \(I(1)\).
effects of non-stationarity (Hamilton 1994). A disadvantage of this method is that we wish to estimate parameters for \( k \) covariates, each with \( p \) lags, for each of the \( j \) candidate contracts, VECM estimates a model with \( kpj \) parameters, which for some of our models eats up a tremendous number of degrees of freedom and reduces the efficiency of the parameter estimates. Because our concern is with bias in parameter estimates on our “exit” interventions, we estimated the VECM models, but noting only trivial differences in the parameter estimates for the interventions, we report only results from single-equation models.\(^{19}\)

3 Results

The results for 1996 (Table 1, Part A) provide mixed support for the paper’s primary hypotheses. Certainly, the remaining candidates benefit when there are fewer candidates in the race, and while the greatest benefit goes to the front-runner, Bob Dole, the benefit from other candidates’ withdrawal is not statistically discernible from zero. Because Dole’s contract is the highest priced, we should expect greater variation from day-to-day, such that we cannot tell if exit is truly affecting his perceived probability of winning the nomination. Instead, it appears as though Phil Gramm, Dole’s primary challenger at this point in the race, is the main beneficiary of other candidates’ decisions to withdraw, and the big loser is Pat Buchanan. While Dole receives a great initial benefit, those gains appear to be redistributed to Gramm as traders have time to assess the effect of each candidate’s exits. Similarly, while Buchanan is not hurt initially, he becomes viewed as the major loser.

We can gain further understanding of the process by examining how each candidate’s exit affected the remaining candidate’s chances of winning (Table 1, Part B.). First, it seems pretty clear that Arlen Specter’s exit had, with the exception of Buchanan, very little effect upon the other candidates.\(^{20}\) This makes sense in that Specter withdrew relatively late

\(^{19}\)VECM results are available from the authors upon request.

\(^{20}\)We could not find any other event that explained Buchanan’s lower price, but we can speculate that the absence of Specter, the only pro-choice candidate in the field, removed an opportunity for Buchanan to
and with the least prospects of the candidates who withdrew early. On the other end, both Powell’s and Wilson’s exits had a great effect upon the remaining candidates. First, Powell’s exit had very large effects upon Dole’s and Gramm’s chances of winning, and Wilson’s exit also helped Gramm. By contrast, Alexander received, at most, modest gains from the other candidates’ withdrawals. Finally, Buchanan was hurt slightly by Wilson’s withdrawal and received virtually no gain from Powell’s. The lack of gain, however, should really be viewed as a net loss, in that Buchanan fell further behind the other remaining candidates after Powell decided not to run.

These results suggest two conclusions. First, while the front-runner is not hurt by candidate exit, the relatively larger gain goes to the front-runner’s most viable competitor. Second, there is mixed support for the hypothesis that the benefits from withdrawal are distributed according to the remaining candidates’ ideological proximity to the candidates leaving the race. The first conclusion is supported in that Gramm gains nearly as much as Dole and more than Alexander, despite the fact that, as a candidate trying to win support from the conservative wing of the Republican party, he had not eliminated any of his ideological competitors. It is probably the case that Gramm, and other first-tier underdogs, gained this benefit because the withdrawal of these other candidates was expected to lead the media to focus more upon a Gramm-Dole race, without the other distractions of Wilson or Powell emerging as a serious competitor. As Powell was clearly receiving a great deal of media coverage, Gramm was not receiving the coverage that he needed to keep his campaign rolling. With Powell out of the race, more attention would once again be focused on Gramm.

The second conclusion, the effect of ideological proximity, appears to receive support from the fact that Buchanan lost ground, absolutely or relative to the other candidates, each time another candidate withdrew from the race. As Wilson, Powell, and Specter could all be considered as moderate Republicans, this means that it would be harder for a conservative, score points with Christian right voters.
like Buchanan, to emerge from out of the pack while the moderate wing was splitting votes among several candidates. The problems for Buchanan could also be seen in that, with the withdrawal of these other candidates, Gramm could receive the attention that would make it easier for him to unite conservatives behind him against a more unified moderate bloc. On the other hand, we have to temper our belief in this conclusion with the observation that the departure of moderates should have given Dole a clearer advantage over Gramm, as Dole would become less vulnerable from other moderates, while Gramm would still have to contend with Buchanan for conservative support.

The results from the 2000 campaign (Table 2) generally corroborate the conclusions reached from the 1996 data. Once again, the front-runner, George W. Bush, gets a boost from other candidates' withdrawals, but the largest gains go to his primary challengers, early in the race, Dole and Forbes, later on John McCain; although, we interpret the benefits to Forbes and Dole cautiously. First, while we could not find any other explanation for the highly significant effects of John Kasich and Robert Smith's exits, it is possible that the market, at this point in operation for only a month, when there were fewer traders and relatively few traders' actions could dramatically influence prices. Second, the Alexander withdrawal, whose effect can be seen clearly in the drop in price for the RCROF contract, is almost surely tied up with the results of the Iowa Straw Poll, where both Forbes and Dole did well.\(^\text{21}\) So even though we have controlled for the effects of the Straw Poll, we are hesitant to say that their gains are entirely a product of Alexander's exit.

We are more confident, however, that the withdrawal of Quayle, Dole, and Buchanan really reflect the effect of exit upon the remaining candidates' contract prices. Because McCain did not have his own contract for most of the period of our analysis, we can only infer that the RCROF contract at these times represents McCain's chances of winning. There are several reasons why we believe the results support this argument. First, when the

\(^{21}\) The drop in the RCROF contract suggests that McCain was probably not the only component of that contract at that time.
McCain contract was finally spun-off from the RCROF contract, the value of that contract fell from over $20 to less than $0.01, indicating that the other candidates were responsible for very little of that contract's value. Second, the results in Part B of Table 2 indicate the most of the effects to the RCROF contract came once McCain had moved into the front-tier of the challengers. By the time that Quayle withdrew from the race, the only other widely recognized candidate in the field without a contract was Buchanan, but as his exit, unlike Alexander's earlier exit, actually caused the RCROF price to increase, it is reasonable to infer that the movement represents an increase in McCain's chances of winning.\footnote{We would expect the RCROF contract's price to decline when one of the candidates covered by that contract withdraws. The parameter in this case probably represents the net effect upon the loss of viability of that contract from Buchanan's withdrawal plus the gain in viability for McCain.}

The results for 2000 are also mixed with respect to the hypothesis that the benefits of exit are contingent upon the ideological proximity of the remaining candidates to the departing candidate. In support of the hypothesis, both Bush and McCain were seen as being helped most when Elizabeth Dole withdrew. Despite their differences, these candidates all appealed to generally moderate Republican voters. There is also evidence that does not support this hypothesis. While Forbes is targeting socially conservative Republicans in the 2000 race, he did not benefit when other social conservatives, Quayle and Buchanan, withdrew. In fact, his greatest gains occurred when the relatively more moderate Elizabeth Dole withdrew. Similarly, John McCain got a great boost when both Quayle and Buchanan withdrew, even though their conservative supporters are not likely to help increase McCain's chances of winning. If the ideological proximity hypothesis were supported, we should have seen the chances of the most viable of the social conservatives, Steve Forbes, increase.

In light of these results, we would like to argue that while candidate exit does not help front-runners more than other candidates, it does not hurt their chances. Rather, the effects of early candidate withdrawal appear to accrue to the most viable underdogs remaining in the race. While it was possible to attribute the effects of exit on Buchanan's contract
to ideological considerations, it is more difficult to do that for Forbes in 1999, and so we are hesitant to suggest that the effect of exit is necessarily contingent upon the remaining candidates' ideological proximity to the withdrawing candidate. The results also suggest a greater effect for the elimination of all potential rivals over one that is strictly conditional upon the ideological proximity of the exiting to the remaining candidates. While McCain appears to be drawing support from more moderate Republicans, his chances of winning were seen as helped greatly by the withdrawal of two conservative candidates, Quayle and Buchanan. Again, it seems that the effect of an early winnowing of the field is greatest for the more competitive underdog because of the greater exposure and attention that such a candidate can be expected to receive as fewer candidates remain in the race.

4 Discussion

The results in this paper indicate that candidate exit does change the competitive structure of the race. The data presented are consistent with our hypothesis that front-running candidates benefit from other candidates leaving the field, but to our surprise an even greater benefit goes to the underdogs who are best positioned to challenge the front-runner. Even more to our surprise is that the data do not provide clear support for the hypothesis that the benefits of exit are contingent upon the ideological proximity of the remaining candidates to the candidates withdrawing. Overall, our findings suggest that the effect of early candidate exit upon the nomination process is one that helps define the field and promote a more competitive race between the front-runner and the most viable underdogs in the field. It is this subject to which we now turn.

While providing a greater range of choices to voters, the effects of a large field, especially in a heavily front-loaded primary process, allows for a greater division of resources among the challengers to a front-runner. This division, in turn, may make it more difficult for a credible alternative to the front-runner to gain the resources and attention necessary to
mount a competitive challenge after the Iowa and New Hampshire contests. Paradoxically, this finding indicates that a front-runner, by gaining such an early advantage over the rest of the field that a large number of candidates are encouraged to quit the race, can make it easier for a credible alternative to emerge.

Obviously, this finding is not going to lead future front-runners to hesitate to raise funds as fast as they can or subsidize competitors to remain in the race. The fact that they receive a benefit and still remain the odds-on favorites to win indicates that it is better to be a front-runner than an underdog. But such prodigious fund raising does represent a mixed blessing to successful front-runners. We can see this in the current race. As long as Elizabeth Dole could remain in the race, John McCain’s ability to move up was limited by the attention that she received. Simply put, the media have some obligation to cover all credible candidates (Robinson and Sheehan 1983), and her standing in the polls made it harder for McCain to claim sole position as the remaining credible challenger to Bush. As such, his attempts to get his message out to voters were not be as productive as they were once Dole left the race. Along similar lines, McCain was able to raise twice as much money in the quarter when Dole withdrew as in the previous quarter.

The consequence of this activity is that McCain has more time to prepare his campaign to challenge Bush in South Carolina and some of the states beyond. As a result, McCain may be better positioned to reap the benefits of any momentum that he can gain from early successes in Iowa, where he’s not running, and New Hampshire, where he currently leads. Without this advance time to prepare, any momentum that McCain gained could easily be lost, as in past races, as the upstart does not have time to accumulate sufficient resources to succeed in later states. Instead, McCain has been able to build a strong foothold in New Hampshire and can already think about using current financial resources to develop organizations in the states holding their primaries in mid and late February. If he can get a string of successes in New Hampshire, South Carolina, and Michigan, the
kind of momentum that Morris Udall bemoaned becomes more easily available to McCain and might be sufficient to overcome Bush’s enormous resource advantages in California, New York, and the other states holding their primaries in early March. In a heavily front-loaded primary season, underdogs might need strong showings in more than one or two states before they receive the benefits of momentum. With the ability to emerge as the viable challenger to the front-runner earlier, credible underdogs reap the benefits of early withdrawals because they now have the time and opportunity to make a series of early wins more likely.

Again, our findings do not indicate that large-scale candidate withdrawal produces a large problem for front-runners. Even though a credible underdog may gain an advantage from competitors’ exit, the underdog still faces a daunting task. Any front-runner who has been able to raise so much money and drive out a large number of candidates is clearly a formidable foe whose success remains likely, even if he is not as strong a candidate as his early supporters first thought. Many Republicans, for example, were quite worried that Bob Dole could not beat Bill Clinton, but Dole still won the nomination despite these reservations.

This is because there are other factors to consider in looking back at how candidates’ withdrawals helped shape a campaign. First, the candidates who benefit from other candidates’ withdrawals have to take advantage. These candidates cannot make the kind of foolish mistakes that can derail their campaign. In 1996, Phil Gramm received greater benefits from candidate exit than Lamar Alexander, but Gramm unwisely gambled his campaign on a relatively meaningless two-candidate race in Louisiana, where he had built up high expectations. And while Gramm was able to build support among political elites, he was never able to make himself appear as an attractive candidate to voters. As a result, the primary beneficiary of the early candidate withdrawals did not remain in the race long enough to see these benefits materialize, all the while depriving a more attractive challenger, Lamar
Alexander, of the resources that he needed to mount a better early challenge to Dole. In this sense, the early exits may have helped Dole by building up the expectations of a flawed challenger.

One last issue we wish to address is the lack of clear support for our hypothesis concerning the effects of ideological proximity upon the benefits from early withdrawal. We had expected to find that ideology would matter, but upon reflection it is not clear that ideology has mattered in nomination elections since the mid-80s. If we think about the races since 1988, the standard of extremism has been carried primarily by outsider candidate without any previous electoral experience. Clearly, there have been well-qualified candidates who have sought support from the conservative and liberal factions within the Republican and Democratic parties, respectively. But to the extent that any candidates have successfully attracted support from these factions, it has come from people following liberals, such as Jesse Jackson and Jerry Brown, and conservatives, like Pat Robertson, Pat Buchanan, and Steve Forbes — all candidates who simply were not credible challengers for the White House.

Instead, the recent pattern has been strength through moderation as the parties, even members of the more extreme factions within each party, have become more concerned with electability, which requires a more nationally mainstream candidate. As a result, the contests have really boiled down to a question of which moderate will win the nomination; Clinton or Tsongas in 1992, Dole or Alexander in 1996, and Bush or McCain, Gore or Bradley in 2000. Even Phil Gramm was not sufficiently conservative socially to garner much support from the Christian Coalition, who actually had many members who saw Dole as the best way to end the Clinton presidency.

Normatively, we can conclude from these results that early candidate exit is not necessarily the choice-limiting phenomenon of which we were initially afraid. While the number of well-qualified candidates voters can choose from is diminished, there is reason to believe
that early candidate withdrawal may thin the field enough that an early favorite of political
elites, and winner of the money primary, may face a more viable challenger than would be
ture without pre-primary winnowing. This is not to say that elites haven't taken back much
of the influence over the nomination process that they had appeared to relinquished in the
1970s, but suggests that early withdrawal may reduce some of the resource advantages that
an early front-runner gains from a heavily front-loaded field. Whether those advantages
have been reduced enough for an early front-runner to actually lose the nomination remains
to be seen.

There may be a little more reason to be concerned with the lack of ideological choice
between the candidates who end up being the most viable candidates for the nomination,
but we do not think that early exit has necessarily exacerbated this situation. Instead, the
problem may lie more in the reluctance of attractive, high-quality candidates to enter the
process in the first place. This, of course, might be tied into the willingness of party elites
and financial contributors to express support for a “chosen” candidate, thereby scaring
other candidates from entering, but this is more a problem with the initial field than the
candidates who end up leaving. In the two races that we examine, former Vice President
Dan Quayle was the only high-quality candidate seeking conservative support who was
forced to exit the race. For early withdrawal to be depriving voters of ideologically clear
choices, it would have to be clear that the departing candidates were predominantly from a
faction of the party different from those remaining in the race. This is simply not the case.

Finally, we do want to take our own counsel and reiterate that these findings speak to a
recent phenomenon, early candidate exit amid heavy front-loading. Over the past 30 years,
the nomination process has changed continually and we expect that there will be still further
change in the future. For this reason, we want to state strongly our belief that candidate
exit, if it continues to be a prevalent aspect of the nomination process, is something that
deserves continued attention. Given a return to greater ideological competition within the
parties, the effects of exit may be distributed according to ideological proximity. Or given
more changes in the primary calendar, the benefits of exit may accrue more strongly to
front-runners or candidates other than the primary challenger to the front-runner at the
time of a candidate's withdrawal. Simply put, this is an important aspect of our presidential
selection process that bears watching.

A Appendix

A.1 Dates of Candidate Exit

1. Candidate Exit is a dummy variable coded 0 over most of the period, and coded 1
on the following dates:

- September 29, 1995 (Pete Wilson),
- November 8, 1995 (Colin Powell),
- November 21, 1995 (Arlen Specter),
- July 13, 1999 (Robert Smith and John Kasich),
- August 16, 1999 (Lamar Alexander),
- September 27, 1999 (Dan Quayle),
- October 20, 1999 (Elizabeth Dole), and
- October 25, 1999 (Pat Buchanan)

References


28


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<th>ALEX</th>
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<td>(0.011)</td>
<td>(0.009)</td>
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**Note:** Data from the 1996 Iowa Political Stock Market, Republican Convention Market (2/16/95-2/05/96). Newey-West standard errors in parentheses. Estimates are significant at * * $p < .05$, * $p < .1$. The combined results are the sum of the parameters on the exit intervention.
Table 2: Candidate Exit — 2000

A. Overall Estimates

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<th>DOLE</th>
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B. Combined Exit-Specific Estimates

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Note: Data from the 2000 Iowa Political Stock Market, Republican Convention Market (6/14/99-11/28/99). Newey-West standard errors in parentheses. Estimates are significant at * * $p < .05$, * $p < .1$. The combined results are the sum of the parameters on the exit intervention.