Electoral Studies 30 (2011) 756–770

Contents lists available at ScienceDirect

Electoral Studies

journal homepage: www.elsevier.com/locate/electstud

Is the Democratic Party's superdelegate system unfair to voters?

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ARTICLE INFO

Article history:
Received 17 August 2010
Received in revised form 1 June 2011
Accepted 18 July 2011

Keywords:
2008 Primary election
Superdelegate
Presidential campaign
Democratic Party
Hazard model
Formal model

ABSTRACT

Among the reasons for the historic nature of the 2008 Democratic primary race was the attention paid to the "superdelegates". The competitiveness of the primary and the important role the superdelegates played has led to calls for reform. This paper develops a formal model that explains why superdelegates selected one candidate over the other and why some superdelegates committed early in the primary season while others waited. Hypotheses are tested using an original dataset collected during the 2008 Democratic primary. The results suggest that although some superdelegates made their decision based on personal, idiosyncratic factors, for many superdelegates, Democratic voters played the most important role in their commitment process.

1. Introduction

When Hillary Clinton won the Pennsylvania primary on April 22nd, 2008, she proclaimed, "the tide is turning" and vowed to continue campaigning. Unfortunately for her, the remaining primaries, with the exception of Indiana, were expected to provide large vote margins for Barack Obama. Despite these long odds, Clinton remained in the race, continued to raise money, and continued to fight hard for votes and delegates. She did this despite the growing sense that the long primary battle was hurting the party, and by extension, the eventual nominee. A debate scheduled to take place between the Pennsylvania and North Carolina primaries was canceled, ostensibly due to scheduling conflicts. However, media reports suggested party leaders believed the debate would only serve as another opportunity for the two candidates to continue their verbal attacks against each other and "hurt party unity".[1]

Although Clinton claimed she could still win the popular vote or the pledged delegate count, most observers realized she could not catch Obama in either category.[2] However, if Clinton could have convinced enough superdelegates to support her, their votes along with her pledged delegates could have been enough to give her the nomination at the convention vote in August.[3]

In the wake of the 2008 primary campaign, calls for reforming the superdelegates' role in the nominating process came quickly.[4] During the 2008 Democratic Convention, a reform commission was established to review and potentially recommend changes. Suggestions included removing superdelegates from the process altogether, reducing their number, or increasing the clarity of

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[1] Staff Reports, "Presidential debate in Raleigh canceled.: Fayetteville Observer, May 21, 2008.

[2] Although it was mathematically still possible, realistically Clinton would not win enough votes in the remaining states to capture enough pledged delegates.

[3] The "superdelegate" is an informal term widely used by the media and other observers but one that is not used by the Democratic Party. Instead, the Party breaks down all delegates into pledged and unpledged categories. In this paper, the terms unpledged delegate and superdelegate will be used interchangeably.

[4] Criticism of the superdelegates is not new. In 1988, Jesse Jackson complained that the superdelegates provided an unfair advantage to Michael Dukakis. His campaign manager, speaking about Jackson's position said, "What he's saying is, `If I get the most popular votes or most delegate votes and superdelegates are not voting as a reflection of those votes, that's unfair,'" (Oreskes, 1988).

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doi:10.1016/j.electstud.2011.07.002

the system and the accountability of the superdelegates. These reform efforts are designed to confront chargers of elitism and unfairness that were leveled at the system by unhappy party officials, the media, and the public in 2008.[5]

Political scientists are also increasingly worried about the state of the nominating process. There is a growing sense that the structure and timing of the state primaries, the money required, and the role of the superdelegates have led to an erosion of public influence on the selection of the nominee (Steger, 2000; Tolbert et al., 2009). Public opinion polls indicate that voters feel they have relatively little say in the nomination process as compared to party leaders (Tolbert and Squire, 2009). Aldrich (2009, p. 33) claims,

> "The balance of influence, however, has altered sufficiently that it has changed from a case in which the public generally rules to one in which their role is secondary to the roles of those whom we might call the `nomination elite' (officeholders, activists, resource providers, campaign specialists, media personnel and the like)."

Superdelegates may be part of the problem. They are, in essence, *the* nomination elite—individuals who appear to be minimally accountable to Democratic voters during the primary process, and have, given certain circumstances, a disproportionate influence on the selection of the nominee. In 2008, out of 4630 total delegates, a candidate needed 2024 delegates to win the nomination. Not counting the Michigan and Florida delegations[6], there were 794 unpledged delegates, comprising approximately 39% of the total number of delegates needed to win the nomination.[7]

While the 2008 primary election seems unique, highly contentious nomination fights have occurred both before and after the Democratic Party reformed the process in 1984. Prior to the creation of the unpledged delegate, Jimmy Carter, running for a second term, beat Sen. Edward Kennedy, but only after a particularly rancorous primary fight. It was the 1980 primary process that led to the creation of the Hunt Commission which proposed the unpledged delegate as a way of better representing the party rank-and-file during the nominating process.[8]

Advocates of the reforms publicly claimed that the two-tiered delegate system would improve the process by combining the best aspects of representation and popular consent by allowing unpledged delegates, individuals automatically seated at the Democratic Convention, to make a decision with input from the voters but without being beholden to them. Additionally, the party claimed that because unpledged delegates can make their candidate choice clear at any time, long, divisive fights over the nomination could be ended more quickly. Or, in the event a candidate became untenable as a nominee due to scandal, health or some other reason, the superdelegates could quickly rally behind another candidate.

Despite the claims by the Democratic Party, some evidence suggests delegate reforms were implemented to give more power to the party elite and avoid "unelectable" nominees (Epstein, 1986; Price, 1984). And though there is some evidence that superdelegate attitudes are very similar to those of pledged delegates and the Democratic electorate on most issues (Herrera, 1994), the tension between elite control and voter influence over the nomination is at the center of the controversy of the role of superdelegates.

I pose two questions about superdelegate commitment in 2008. First, how did superdelegates select a candidate? Second, why did superdelegates commit at different times during the primary season? I use a formal model to develop a theory which addresses both questions. The theory is tested with an original dataset using logit models to explain early endorsement and both Cox proportional hazards models and competing risks models to explain commitment timing.[9]

The results demonstrate that a large number of superdelegates are not insulated from Democratic primary voters and that the system is not as "unfair" as it appeared in 2008. Most commitment behavior can be explained by a superdelegate's desire to select the same candidate as her constituents. Importantly, this not only explains who the superdelegate committed to, but also when the superdelegate committed. Voters, rather than elites, were the most important actors during the 2008 primary. This finding contrasts with much of the literature on campaigns and elections which suggests presidential nominations are a function of elite preferences rather than public participation.

2. A formal model of delegate choice and timing

A theory of the commitment process of superdelegates in 2008 requires two components—it requires an explanation of why a superdelegate selected one of the two candidates, and when a superdelegate made her choice by publicly committing. Superdelegate commitment behavior closely mirrors other studies of decisions made over time by political actors (Box-Steffensmeier and Sokhey, 2010; Box-Steffensmeier et al., 1997; Caldeira and Zorn, 2004; Glazer et al., 1995).

In situations such as these, political actors must behave strategically to maximize the benefits from their choice. There can be advantages to being a "first-mover"—one may be able to accrue a disproportionate share of the benefits or

[5] A USA Today survey found that 55% of Democratic voters and independents who lean Democratic would characterize an outcome in which Clinton lost the nomination to Barack Obama despite winning more primary and caucus votes than him as "flawed" and "unfair." (Page, March 3, 2008). Sen. Tom Harkin was quoted as saying the superdelegate process was "profoundly unfair," (Krogstad, 2008).

[6] The Democratic Party refused to seat delegates from these states.

[7] The number is approximate because delegate membership, both pledged and unpledged, is unstable during the primary season. For example, the resignation of Eliot Spitzer meant one less superdelegate because his replacement, David Paterson, was already a superdelegate.

[8] It should be noted that in 1984, the first election after unpledged delegates were added, Walter Mondale did not secure the nomination until June, when he achieved victories in some of the larger remaining states. Both Gary Hart and Jesse Jackson proved troublesome for Mondale, who had difficulty capturing enough delegates to secure the nomination despite being the early favorite in terms of both popular support and resources.

[9] Data available from the author.

may be able to influence the decisions of actors who follow. For example, during the superdelegate commitment process an individual delegate may have expected some reward from one of the two candidates or from the party itself. Superdelegates seek the spoils from a successful candidate who rewards her friends (Collat et al., 1981), and endorsing a candidate early is more likely to earn these goods for the delegate. The party, because it wanted to end the nomination fight, may also distribute goods to the delegate during the primaries or at some future time. For example, members of Congress often depend on the party to provide fundraising help, visits by popular party leaders, and other electoral help (Aldrich, 1995). "First-movers" are more likely to receive these benefits than those who wait.

Superdelegates, as members of the party elite, may also commit early in order to increase the chances their preferred candidate wins the nomination. During the "invisible primary" elites may increase support among voters through their endorsement. For example, Cohen et al. (2008) find substantial evidence that elites, through endorsements, narrow the field and produce support among voters. They say, "…party insiders are the most important influence on voter decision-making in primaries." Steger (2007) also finds that elites matter, though "momentum" effects are still substantial and Democratic elites send less clear signals than their Republican counterparts. If elites do seek to influence voters, then endorsements are more important earlier in the race, before Democratic voters go to the polls.

Sometimes, waiting is a more attractive strategy. For example, in Congress members often wait to vote because the outcome is uncertain and the member faces conflicting pressure from different sources (Glazer et al., 1995) In 2008, unpledged delegates may have had little information about who their constituents or other influential figures supported or they may have been genuinely conflicted. Or, a superdelegate may have chosen to wait with the hope of becoming pivotal, allowing her to extract more concessions from the party or candidate in exchange for her commitment (Boehmke, 2006).

While I do not address another possible manner in which elites may influence nominations, by narrowing down the field of candidates voters may choose from, the substantive differences between committing early and committing late are important. Early commitment implies, consistent with much of the recent literature on the presidential nominating process, that elites influence voters. Conversely, late commitment implies that superdelegates and other party elites wait for a signal from voters; rather than following elites, voters actually drive superdelegate commitment.

Because of the complicated considerations of superdelegates, I use a formal model to disentangle these competing factors and develop a theory of superdelegate commitment. The game has two players: a superdelegate and the Democratic median voter within the superdelegate's district. The superdelegate has imperfect information about which candidate her own median voter prefers, but the superdelegate also accurately observes her district median voter's preference, after a period of time, with some probability. The superdelegate also has a private, non-systematic preference for one candidate for which she receives an additional payoff if she selects that candidate.

2.1. Player moves and payoffs

The game is structured such that a superdelegate has two periods in which she can commit, and between the two periods, the voter selects a candidate. The superdelegate moves first and must decide whether to select a candidate or whether to wait and imperfectly observe her median voter's preferred candidate. In the first period, if the superdelegate chooses to select a candidate, the superdelegate also has the next move and must decide which candidate to support. The voter observes the superdelegate's action, selects his candidate, and the game ends. If the superdelegate chooses to wait in period 1, the voter selects a candidate and the superdelegate, now in period 2, also selects a candidate. By waiting, the superdelegate learns about her voter's preference, and may also derive benefits by being more pivotal in the race.[10]

While waiting and observing allows the superdelegate to update her beliefs about her voter's preference, the superdelegate in many cases does not perfectly observe the voter's selection. The delegate's observation may based on a number of things including public opinion polls, feedback from constituents or the occurrence of a primary election. But even after an election occurs, for most superdelegates, their district median voter's candidate preference is still unclear. Public opinion polls have margins of error, constituent feedback may be biased in favor of one candidate, and vote totals from a primary are reported at the state and county levels but may not be reported at the House district level or the local level for superdelegates who are mayors, city council members or state legislators.

To capture these dynamics, the model includes a noisy signal from the district median voter. Let the superdelegate's observation, α, be the probability an observation accurately represents the district median voter's actual preference, and call the observation of the voter d, where $d \in \{1,2\}$. After this message is received, the superdelegate believes with probability α the message accurately reflects the voter's preference where $\alpha \in [.5{:}1]$. If $\alpha = 1$ the superdelegate knows with certainty she accurately observed her district median's candidate preference.[11]

2.2. Payoffs

If the superdelegate waits to commit until the noisy signal is received from the voter, the superdelegate's

[10] For clarity and simplicity, the game is limited to two candidates and no switching between candidates is allowed. Most primaries develop into two candidate races quickly, and 2008 was no exception. John Edwards was the only other candidate to receive any other pledged delegates (four) and superdelegates (15, or about 1.8% of the total). He dropped out of the race on January 30th, after only four primaries. Additional candidates could be added to the game, but the substantive results will be similar. Similarly, switching was observed by only seven superdelegates during the 2008 primary season. While there may be some incentive to switch under certain conditions, the process is tangential to the main theoretical insights from the game.

[11] The range of α between.5 and 1 captures all possible information it can provide to the superdelegate. If $\alpha = .5$, the state median provides no useful information for the superdelegate. If $\alpha < .5$, the superdelegate would still derive useful information from the signal about who not to support.

payoffs are discounted by δ. By waiting, the superdelegate may miss out on distributive benefits provided by the candidates. Each candidate has an incentive to distribute benefits because superdelegate commitment may cause bandwagoning given specific conditions (see Straffin (1977)), or it may serve as an important cue to voters about which candidate has momentum and which candidate is more popular, each of which positively affects the likelihood a voter casts a ballot for that candidate (Abramowitz, 1989; Rickershauser and Aldrich, 2007). Targeting delegates by distributing benefits to them can be a successful strategy for candidates because of the feedback it produces in encouraging other unpledged delegates to commit and because it is a more efficient resource allocation strategy (Gurian, 1986). Further, as a candidate builds momentum, it may lead to an increase in vote share (Steger, 2007), which increases a superdelegate's impatience as she does not want to miss out on the benefits associated with siding with a likely winner.[12] It should also be noted, however, that if a superdelegate derives additional benefits from being pivotal in the race, she is relatively patient, so her discount factor approaches one.

The second parameter which affects superdelegate decision-making is the benefit a superdelegate receives for committing to the same candidate as her constituents. Call this benefit b, which is only received if the superdelegate and the district median voter select the same candidate. If the two select different candidates, the delegate receives $b = 0$, otherwise, $b > 0$. While the superdelegate may receive some benefits from other constituents by selecting another candidate, I assume the superdelegate only values coordinating with her district median voter because the median is, by definition, the pivotal voter in party races within the district.

Theories of congressional behavior have long been based on the idea that members seek reelection (Mayhew, 1974). As members of Congress diverge from constituent preferences on roll call votes, they are at an increasing risk of losing their office (Bovitz and Carson, 2006; Canes-Wrone et al., 2002). If elected officials follow constituent preferences when governing, then it seems likely this should also be the case when selecting presidential nominees. After all, commitments were not obscure votes in the halls of Congress; they were often announced publicly through press releases issued by the candidates, press conferences, and local news stories.[13]

The final component of the payoff to a superdelegate is the benefit received if they select the candidate they prefer for personal or idiosyncratic reasons, s. Superdelegates may have committed based on one candidate's race, gender, personality, ideology, issue-position, their private beliefs about each candidate's "electability" or some other non-constituent based factor. This basis for selection is often assumed to be the primary motive for commitment or endorsement in most Democratic primaries. In *The Party Decides*, Cohen et al. (2008) claim candidate support is driven largely by their ability to capture elite endorsements. Candidates do this by satisfying "key party interest groups on the issues they care most about" (Cohen et al., 2008, 198). For example, a candidate may have to appease different labor groups, influential donors, or other elites who are motivated by one particular issue or set of issues.

While these highly specific and personalized issues among elites are at least partially a function of constituent concerns for some superdelegates, I separate the terms in the model because it best captures what most observers thought was driving commitment, and what most observers find normatively problematic. The criticism of the superdelegate system is that superdelegates were making their decision based on personal biases, demographic reasons, long-standing dispositions for or against one of the candidates, or some other highly personal reason not based on broad representational factors. By allowing this term to capture all these possible factors, one can determine the conditions under which these types of reasons affected superdelegate commitment behavior, even if the other parameters also exert some influence on behavior.

The other player in the game is the Democratic median voter within a given superdelegate's district. The voter receives a utility equal to x if he votes for candidate 1, and y if he votes for candidate 2. Each of these benefits is realized with probability p or $1 - p$, where p is the probability candidate 1 becomes the nominee, while $1 - p$ is the probability candidate 2 becomes the nominee. However, because support by the median voter within a given geographic district increases the probability a candidate wins the nomination, a candidate receives a "bonus" to their probability of winning if chosen by the voter. The bonus is the effect to which that particular median voter, by definition decisive within their district, is also decisive in the national nomination campaign. Additionally, because of the positive effects of superdelegate commitment to a candidate's campaign, the candidate also receives a bonus for their commitment. If the superdelegate and the median voter within the superdelegate's district commit to the same candidate, the effect of this bonus, γ is larger than if the two select different candidates. Put differently, selection of a candidate by a superdelegate and the district median has a greater positive effect on the probability the candidate wins the nomination than does a split selection where the superdelegate selects candidate 1 and the voter selects candidate 2 (or vice versa). If both select candidate 1, the probability of candidate 1 winning is now $p + \overline{\gamma}$ and if they both select candidate 2, the probability of candidate 2 winning is now $1 - p + \overline{\gamma}$. If the two select different candidates, the probability of candidate 1 and 2 winning

[12] Candidates who develop momentum may see an increase in financial resources, though it is usually not enough to propel a candidate ahead of a frontrunner. See Norrander, 2000.

[13] For example, Brad Ellsworth, a Democratic congressman from Indiana, told the local NBC affiliate in Evansville, Indiana that he planned on supporting whomever the voters selected (Samson, March 3, 2008). Politico.com ran a story on April 4th, 2008 about the fear of junior House members experiencing "blowback" from backing the wrong candidate. The article quotes Representative Jason Altmire, a freshman House member from Pennsylvania saying, "Three months ago, everyone in the district was saying how great it was to have these strong candidates. Now, whenever I'm at a rally or somewhere else, I hear people saying, `I used to like Jason, but if he endorses the one I don't like, I'm not going to vote for him,'"(Hearn, April 4, 2008).

are $p+\underline{\gamma}$ and $1-p+\underline{\gamma}$. Assume that $\overline{\gamma}$ is greater than $\underline{\gamma}$, and that neither can increase the chance a superdelegate wins to greater than 1.

This term also allows a voter to be influenced by the commitment of a superdelegate. Voters may learn one candidate has a better chance of winning the primary than the other—a factor that along with personal ideology, and policy preferences, increases the voter's likelihood of supporting a candidate (Stone et al., 1992). Voters want to know their candidate can win (Rickershauser and Aldrich, 2007), and superdelegate commitment was a clear signal to the voter that the candidate was supported by party elites and actually had a chance of capturing the nomination.

To summarize, the payoffs for each actor for a particular strategy set are as follows. For the superdelegate, the payoffs are b if she commits prior to observing the voter's selection and if her choice matches that of the median voter but the candidate is not the superdelegate's personally preferred candidate. If the superdelegate does not match the median voter's preference and does not select her privately preferred candidate, she receives 0, while if she commits to her personally preferred candidate but does not coordinate with the voter she receives s. If the superdelegate matches the median voter and commits to her personally preferred candidate she receives $s+b$. The payoffs are the same if the superdelegate observes the signal except because the superdelegate waits, each payoff is discounted by δ.

The district median voter receives $(p+\overline{\gamma})x$ for coordinating with the superdelegate and selecting candidate 1, $(1-p+\overline{\gamma})y$ for coordinating with the superdelegate and selecting candidate 2, or $(p+\underline{\gamma})x$ and $(1-p+\underline{\gamma})y$ for selecting candidates 1 or 2 respectively, but not coordinating with the district superdelegate.[14]

Note that if the superdelegate waits and commits in period 2, she updates her beliefs about which candidate her median voter supported in her district based on Bayes' Rule. q is the superdelegate's prior belief that her district median voter will choose candidate 1, while $1-q$ is her prior belief her district median voter will choose candidate 2. If she sees an observation of $d=1$, she updates her beliefs that the district voter selected candidate 1 such that:

$$Pr(v=1|d=1) = \frac{q\alpha}{q\alpha+(1-q)(1-\alpha)} \quad (1)$$

and if she observes $d=2$, the superdelegate updates her beliefs such that:

$$Pr(v=2|d=2) = \frac{(1-q)(\alpha)}{(1-q)(\alpha)+(q)(1-\alpha)} \quad (2)$$

where α is the probability of an accurate signal, while $1-\alpha$ is the probability of an inaccurate signal.

2.3. Equilibria

The appropriate solution concept is perfect Bayesian equilibrium which requires sequentially rational strategies and weak consistency of beliefs.[15] Although the voter's sequentially rational strategies are described, given the aim of the paper I focus on explaining the behavior of the superdelegates and using their strategies to derive empirical hypotheses. In the solution below, the superdelegate has a personal preference, s, for candidate 1.

In the last stage of the game after the superdelegate has observed the voter and updated her beliefs, there are two cutpoints over the superdelegate's priors that define her optimal choices. Given a signal of $d=2$, the superdelegate commits to candidate 2 if $q \le ((b-s)\alpha)/(b+s-2s\alpha)$. Let this cutpoint equal $\overline{q}$. When this constraint on the superdelegate's beliefs is met, the superdelegate prefers to commit to candidate 2 given an observation of candidate 2 by the voter; above this cutpoint, the superdelegate always commits to candidate 1, even when she imperfectly observes the voter select candidate 2, because her priors are sufficiently strong that the voter prefers candidate 1 that even a signal of candidate 2 cannot change her mind.

Given $d=1$, the superdelegate selects candidate 1 if her beliefs are sufficiently high the voter selected candidate 1, or if $q \ge ((s-b)(1-\alpha))/((-b-s)(1-2\alpha))$. Call this lower cutpoint $\underline{q}$. When the $q<\underline{q}$ conditions is met, the superdelegate always commits to candidate 2, even when she imperfectly observes the voter select candidate 1, because her priors are sufficiently strong the voter prefers candidate 2 that even a signal of candidate 1 cannot change her mind.

Proposition 1: The superdelegate selects $2|d=2$ if $q \le ((b-s)\alpha)/(b+s-2s\alpha) = \overline{q}$, otherwise 1. The superdelegate selects $1|d=1$ if $q \ge ((s-b)(1-\alpha))/((-b-s)(1-2\alpha)) = \underline{q}$, otherwise 2.

Proposition 1 shows the conditions under which a superdelegate's observation has no effect on her choice, even if she receives values for b, coordinating with her constituents. Further, the superdelegate never waits to commit in the second period of the game if $q>\overline{q}$ or if $q<\underline{q}$ because the observation of the voter is irrelevant to the superdelegate. However, if $\underline{q} \le q \le \overline{q}$, then the superdelegate may wait and observe the voter's choice given certain conditions. b increases the values for q which support waiting if the clarity of the signal is sufficient. Fig. 1 illustrates how an increase in the superdelegate's value for coordinating with her constituents, b affects early commitment under two conditions—when the signal is not very clear ($\alpha=.75$) and when the signal is clear, ($\alpha=.95$).

[14] While the model allows voters to affect the outcome of the race through their commitment, possible cross-delegate signaling may also occur. Superdelegates may have based their commitment on the observation of other superdelegates in addition to other considerations. While this complication is partially built into the game through the discount factor which allows the superdelegate to wait to become more pivotal, it is not explicitly addressed for two reasons. First, superdelegates were so evenly divided during the 2008 campaign, the signal sent by other superdelegates was extremely muddled and at no point in time did one candidate develop "delegate commitment momentum." 2008 did not see superdelegates suddenly committing to one superdelegate, nor are there patterns of commitment after influential superdelegates committed. This claim is explained further in the empirical results. Further, for the sake of clarity and simplicity, the game ignores this potential complication and instead focuses on establishing the conditions under which voters could have affected delegate behavior through their signaling behavior.

[15] Proofs of the propositions are presented in Appendix B.

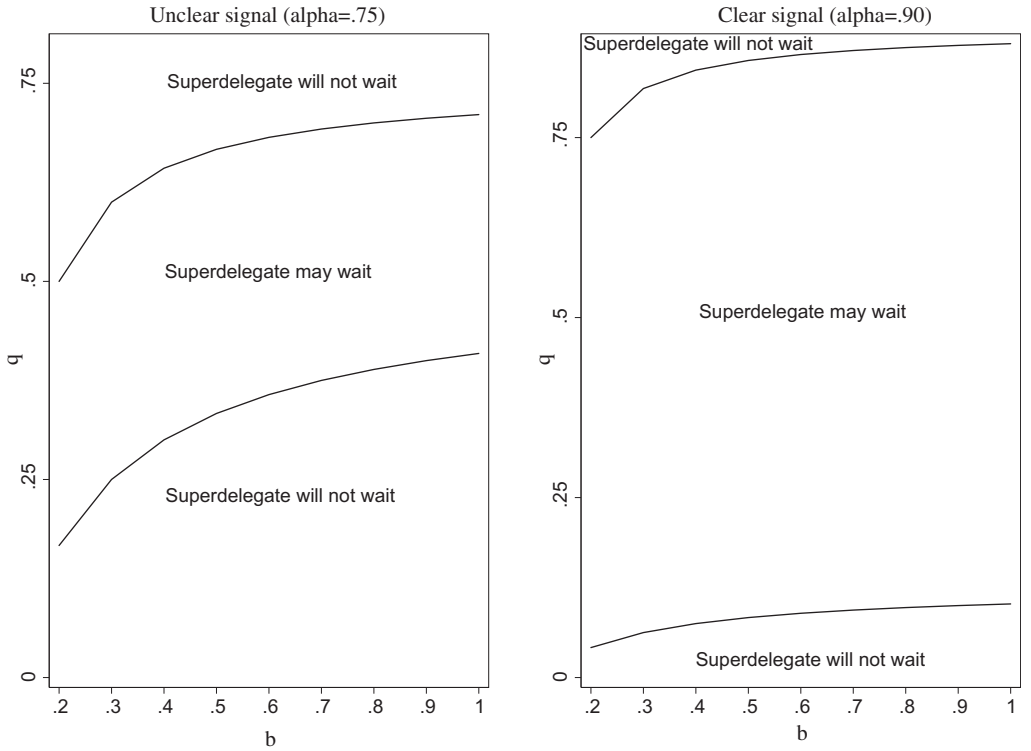

Fig. 1. The Effect of Constituent Benefits on Early Commitment.

The *y*-axis shows the superdelegate's prior beliefs which support the possibility of waiting conditional on the value of b.[16]

2.4. Early commitment

Propositions 2 and 3 describe equilibria where the superdelegate commits to candidate 1 (Proposition 1) and candidate 2 (Proposition 2) prior to observing the voter (when $q > \overline{q}$ or $q < \underline{q}$ is true.) In these equilibria, the superdelegate selects the candidate in the first period, the voter observes the superdelegate's selection, and then both types of voters coordinate with the superdelegate.

Proposition 2: Given $q > \overline{q}$, the superdelegate selects candidate 1 prior to observing the voter if $q \geq (1/2) + (s/b)(1/2)$. The median voter matches the superdelegate's selection if $x > ((1 - p + \underline{\gamma})y)/(p + \overline{\gamma})$, otherwise the voter selects candidate 2.

Proposition 3: Given $q < \underline{q}$, the superdelegate selects candidate 2 prior to observing the voter if $q < (1/2) + (s/b)(1/2)$. The median voter matches the superdelegate's selection if $y \geq ((p + \underline{\gamma})x)/(1 - p + \overline{\gamma})$, otherwise the voter selects candidate 1.

The propositions show the conditions of candidate selection, but they also offer clear empirical predictions. First, as $\overline{\gamma}$ increases, the constraint on x is more likely to be satisfied, while as $\underline{\gamma}$ increases the constraint on x becomes harder to satisfy. In either case, the constraint implies that the extent to which a voter is decisive for each candidate makes it more likely he will commit to that candidate, though selecting the same candidate as the superdelegate always yields a higher probability of winning for the candidate.

In the equilibria, q represents the superdelegate's prior beliefs about which candidate the voter prefers. Recall that $\overline{q} = ((b - s)\alpha)/(b + s - 2s\alpha)$ and $\underline{q} = ((s - b)(1 - \alpha))/((-b - s)(1 - 2\alpha))$. As the values of b and α increase, the greater the range of priors which satisfy the constraints $q \leq \overline{q}$ and $q \geq \underline{q}$. Conversely, an increase in s shrinks the range of priors which satisfy those two constraints. When the signal clarity is sufficiently strong, increasing values of b expand the range of values of q which satisfy $q \geq \underline{q}$ and larger values of q satisfy the $q \leq \overline{q}$ condition.

Superdelegates with values of b such that the waiting constraints on q are met will commit in period 2 rather than period 1. Superdelegates with values of s such that the waiting constraints on q are not met will commit in period 1 rather than waiting. Empirically, it should be the case that superdelegates who receive a relatively high utility for coordinating with their constituents are more likely to wait if they receive a sufficiently clear signal from their voters, while superdelegates who receive a relatively high utility for selecting their own preferred candidate without the voter's input are less likely to wait.

For example, in 2008 there were a number of superdelegates who committed very early in the process, prior to the start of the primary season. According to the model's

[16] The value of s is fixed at .1.

predictions, these individuals likely did not value coordinating with their constituents and would not receive a clear signal, so their prior beliefs about which candidate was going to win were less relevant in their decision. They simply committed to the candidate they preferred for any number of reasons. I expect those superdelegates who wanted to ensure their candidate selection matched their voters' preference to be more willing to wait; otherwise they would need very strong prior beliefs about which candidate was likely to win their district. Hypothesis 1 expresses this empirical expectation.

Hypothesis 1: An increase in constituent benefits will decrease the likelihood of early commitment, ceteris paribus.

2.5. Waiting

When the constraint on the superdelegate's prior beliefs for waiting is met, when $\underline{q} \leq q \leq \overline{q}$, the superdelegate has three possible moves: she may commit to 1 immediately, commit to 2 immediately, or wait and imperfectly observe her median voter's selection and then commit to candidate 1 or 2 in period 2.

Proposition 4 describes the conditions under which the superdelegate waits rather than commits to candidate 1 immediately.

Proposition 4: If $\underline{q} \leq q \leq \overline{q}$, the superdelegate waits to view the voter's selection then commits to candidate 1 if $\delta \geq (b(-1+2q)+s)/(q(b+s))$, and $\alpha \geq (q(b+s))/(b(1+q(-1+\delta))+s(-1+q+q\delta))$ if the voter is imperfectly observed committing to candidate 1, $d=1$. If $\underline{q} \leq q \leq \overline{q}$, the superdelegate waits to view the voter's selection then commits to candidate 2 if $\delta \geq s/(b+s)$, and $\alpha \geq (b-bq+(-1+2q)s)/(b(1+q(-1+\delta))+s(-1+q+q\delta))$ if the voter is imperfectly observed committing to candidate 2, $d=2$. The voter selects candidate 1 if $x > ((1-p+\underline{\gamma})y)/(p+\overline{\gamma})$ given a commitment to candidate 1 by the superdelegate, and candidate 2 if $y \geq ((p+\underline{\gamma})x)/(1-p+\overline{\gamma})$ given a commitment to candidate 2 by the superdelegate.

Under what conditions does the proposition support waiting? First, as before, the clarity of the signal must be sufficiently high. This constraint is partially a function of the superdelegate's benefits for coordinating with her constituents. An increase in b allows lower values of α to support waiting.

The empirical implications of the proposition are that a superdelegate will wait if the signal is sufficiently accurate to provide good information about which candidate the district median prefers. The signal from the voter needs to be sufficiently clear, but this is a function of the superdelegate's value for coordinating with her constituents. If the superdelegate does not value coordination, the signal becomes irrelevant and the superdelegate prefers to commit early rather than waiting. Put differently, superdelegates who do not care about their constituents have no reason to wait no matter how clear voters make their preference. Those superdelegates that did not wait had nothing to gain from it, either because they did not care about coordinating with their constituents or because they believed receiving the signal would not provide them with any useful information.

Hypothesis 2: As the accuracy with which the superdelegate views the district median voter's candidate selection increases, the more likely the superdelegate is to commit later in the primary, ceteris paribus.

Propositions 1 through 4 also demonstrate that superdelegates who receive a very clear signal about the voter's preferences and place a lot of value on coordinating with their constituents will be the most likely to wait of all superdelegates. Put differently the interactive effect between constituent benefits and signal clarity will have an independent, negative effect on the hazard of commitment.

Hypothesis 3: As constituent benefits and the clarity of the signal increase, the more likely a superdelegate is to commit later in the primary, ceteris paribus.

Proposition 5 shows that superdelegates will select the candidate she believes her median voter prefers if the conditions for waiting do not hold.

Proposition 5: If $\underline{q} < q < \overline{q}$, then the superdelegate does not wait if $\delta < (b(-1+2q)+s)/(q(b+s))$, or $\alpha < (q(b+s))/(b(1+q(-1+\delta))+s(-1+q+q\delta))$ and commits early to candidate 1 if $q \geq 1-(s/b)(1/2)$, while she commits to candidate 1 if $q < 1-(s/b)(1/2)$. See Proposition 4 for the voter's behavior.

Proposition 5 simply claims that for those superdelegates not sufficiently patient or who do not receive a clear enough observation of the voter, they will commit to a candidate based on their constituent benefits, b, and their personal benefits, s. Higher values of b sustain coordinating behavior as long as the superdelegate's prior beliefs are also sufficiently high. Higher values of s support candidate selection based on the superdelegate's own preference, even as the superdelegate becomes more certain about the voter's preference. These superdelegates are still unwilling to wait if they do not value coordination with their median voter, or if they more highly value their own personal preferences.

The formal model offers a number of clear predictions about commitment behavior. Superdelegates wait because they expect to receive a clear signal about the candidate their constituents support, and because they place value in selecting the same candidate as their constituents. Further, whether the superdelegate waits or commits early, she is always more likely to match her constituents as the benefits she receives from coordinating increase. Likewise, regardless of whether a superdelegate waits or commits early, if a superdelegate has a strong personal preference for one of the candidates, she is more likely to commit to that person and ignore her constituents.

The next two sections describe the data and the empirical tests developed to evaluate the claims made by the propositions. The tests focus on commitment behavior through candidate selection and commitment timing.

3. Data sources and collection

The empirical analysis proceeds in three parts. Logit models are used to examine the basis for early commitment (commitment prior to the start of the 2008 primary season), Cox proportional hazards models are used to examine the timing of commitment, and competing risks models are used to examine both candidate selection and

timing. The empirical tests examine different possible motivations behind superdelegate commitment—most notably whether superdelegates committed independently of voter preferences, or whether their decisions were influenced at least in part by the Democratic electorate. Distinctions between types of superdelegates are used to achieve variation on important concepts, including the value a particular superdelegate places on coordinating with her constituents. All superdelegates are classified as DNC members (most of whom are elected at state nominating conventions, though exact selection rules vary by state), members-at-large (appointed on a state basis by the party chairman or through a state or national committee election), Representatives, Senators, Governors, distinguished party leaders, officers, or other party representatives of national conferences.[17]

An original dataset of candidate choice and commitment timing was collected by the author from two sources: a website dedicated to the Democratic National Convention called Demconwatch.com, and a list compiled by PBS and published online. A list of commitments and commitment dates was matched to a list of all unpledged delegates obtained from the final official Democratic list published on May 15th, 2008 by the Democratic Party.

Demconwatch.com had the most comprehensive list of superdelegate commitments (with dates), and often had links to the stories or press releases announcing commitment. A common practice among most media outlets was to update their lists only once a week in January and February of 2008, then to increase the rate of updates as the superdelegate story gained interest throughout the primary season. Unfortunately, these lists are not precise enough to use in a model of commitment timing. To the author's knowledge, Demconwatch.com was the only list which was updated with commitment and endorsement announcements every day beginning in January of 2008.[18]

The media kept close track of well-known superdelegates, such as governors and senators, but many others, especially local, unelected party activists, could declare their allegiance without attracting much attention. In fact, in many cases, the public commitment of the lesser known delegates was reported only in a local newspaper or television station. Demconwatch.com was also useful in tracking these lesser known superdelegates.

The Demconwatch.com list was supplemented first by searching media releases from the candidates, and then by cross-referencing it with an online list published by PBS. The commitment date coded for an individual superdelegate was the earliest date on either the Demconwatch.com or PBS list; this was almost always the Demconwatch.com date. There were only a few instances in which the PBS date was the earlier of the two, and these instances were the result of Demconwatch.com missing the commitment announcement.

The final data complication was that Demconwatch.com began recording commitments on a daily basis on January 11, 2008. All delegates who committed prior to that date (mostly Hillary Clinton supporters) were missed. In order to capture these early commitments, I used a list published by DailyKos.com which listed known public commitments as of January 3, 2008. Unfortunately, there is no data available which lists the exact commitment or endorsement date if it occurred in 2007. This poses some additional methodological complications that will be discussed in the following sections. Some other individuals were also coded as early committers if a specific date was not found and they were either a longtime Clinton or Obama fundraiser/supporter, were on the campaign staffs of one of the candidates, or they were appointed to a state steering committee by one of the candidates. Michigan and Florida were not coded because their delegates were not seated at the convention.

The dataset includes the name, commitment date, candidate selection of the superdelegate, their classification type, as well as state-level data such as the state primary date, the type of state election (e.g. primary or caucus), and the competitiveness of the state. Each superdelegate was coded as a publicly elected official or not. The gender of Representatives and Senators was coded by using membership in the Congressional Women's Issues Caucus and African-American members of the House were coded using the membership of the Congressional Black Caucus. Unfortunately, it is impossible to code race for other superdelegates, many of whom are not public officials. The competitiveness measure is taken from Huckfeldt et al. (2007) who suggest the formula $4\,p(1-p)$, where p is the proportion of the two-party vote for one candidate. The variable ranges from zero to one, with one being most competitive. Ideally, some measure of constituent preferences would be available at the district level, but because of the variation in district size and type (recall that many superdelegates are locally elected officials), this data does not exist. While competitiveness is calculated at the state level it is at least somewhat indicative of support at the local level, on the aggregate, for most superdelegates within a state.

There were seven superdelegates that switched candidates during the primary season.[19] Because there is no easy way to deal with these individuals in the logit models of candidate selection or the hazard models of commitment timing, and because there were so few of them, they are excluded from the dataset. Although such individuals could simply be included in hazard models as different failures, this approach treats them as separate observations. There are other superdelegates in the dataset who the media reported as switching from one candidate to the other, but for which no record of initial commitment was found; these individuals were included in the dataset. Bill and Hillary Clinton were excluded from the data, as was Barack Obama.

[17] These include the National Democratic State Treasurers Association, National Democratic Municipal Officials Conference, etc. These categories are not mutually exclusive. For example DNC members may also be elected members of state legislatures, big city mayors, and other elected state officials such as attorneys general and state treasurers.

[18] It should be noted that a privately held preference for one candidate is irrelevant. It cannot change the dynamics of the race until the superdelegate's position is announced.

[19] Those delegates who changed their commitment in June immediately before or after Clinton's concession were not coded as switching.

Two other groups of superdelegates merit note. The superdelegates who committed prior to January 11th, 2008 and those who did not publicly commit have to be treated differently in the hazard and logit models. The 58 superdelegates that did not commit to a candidate are right-censored and do not have a failure time; a hazard model has no difficulty dealing with them as they are simply treated as non-failures. However, these individuals are excluded from the logit models of early commitment.

In 2008, a number of superdelegates committed very early, probably because they expected Clinton to win the nomination. By January 11th, eight days after the Iowa Caucus, 210 superdelegates in the dataset had committed to one of the two candidates, with 139 supporting Clinton.[20] Although Obama finished with more superdelegate commitments, it took much longer, on average, for his superdelegates to commit. From January 10th, 2008, the median commitment time was 105 days for Obama committers and 26 days for Clinton supporters. Clinton received half of her commitments by February 10th, while Obama received half his commitments on April 23rd; Obama received 391 total superdelegate commitments while Clinton received 268.

The 210 early committers (those who committed prior to January 11th, 2008) are more problematic for the analysis. Because these individuals fall outside the study period, the data is left-truncated. Currently, there is no easy solution to left-truncated data in Cox proportional hazards models. These observations can be estimated in a program such as Stata (used here) if they can be treated as having non-overlapping intervals (Cleves et al., 2008), and if the order of commitment is known by using a parametric modeling technique. To the author's knowledge, this data does not exist. Further, the theoretical process operating on these superdelegates is much different than those who committed later. The candidate selection and timing concerns critical to the decision process of the superdelegates who committed during the primary season did not yet exist. For this reason, and the inability to include them in a Cox model, these individuals are excluded from the hazards models. Early commitment was estimated in a separate logit model.

The final dataset has 717 superdelegates (after excluding the Florida and Michigan delegates and the seven who switched). There are 659 individuals who committed prior to Clinton's concession on June 8th, 2008; of these, 210 committed prior to January 11th, 2008, before the study period. The study period is 151 days, ranging from January 11th to June 8th, 2008. Cox proportional hazards models are used to estimate commitment times because they impose minimal assumptions on the data (Box-Steffensmeier and Jones, 2004). The Cox model is semi-parametric and makes no assumptions about duration dependence (e.g. monotonicity.) All Cox proportional hazards models presented in this paper use the Efron Method for ties and the number of failures or the number of superdelegates who committed during the study period is 449.[21] The competing risks models, which is also semi-parametric, use commitment to Obama as the failure, and commitment to Clinton as the competing event. There are 320 Obama commitments and 129 Clinton commitments.

4. Empirical results

4.1. Early commitment

Logit models are used to describe the behavior of the 210 superdelegates (about 32% of the total) who committed prior to January 11, 2008. Most of these superdelegates publicly announced their candidate preference in 2007, and most were supporters of Clinton. Table 1 presents the results. The dependent variable is whether or not a superdelegate committed prior to the start of the study period on January 10, 2008.

Other variables included are "candidate selection" (where Obama = 1), the "type of election" variable which measures whether the superdelegate's state election was a primary, or not (i.e. caucus or mix of the two),[22], whether the superdelegate was a state-chair or vice-chair ("party leader"), was running for reelection, and whether the superdelegate was a member-at-large. Party leader is included to determine whether state party officials had a preferred candidate and committed earlier in order to influence other superdelegates or voters.

The first column are the results for all superdelegates while the second are those for members of Congress. In both, the candidate choice variable is negative and statistically significant, consistent with the claim that most of those who committed early were Clinton supporters. In fact, supporting Clinton increased the probability of committing early by .351 (95% CI: .241–.461) for all superdelegates and by .459 (95% CI: .308–.611) for members of Congress.[23] The other significant result in both models is the date of the primary or caucus. The variable is equal to the number of days from January 10th the superdelegate's state election occurred. A one day increase in the date of the primary results in a .003 (95% CI: .001–.005) decrease in the probability of commitment for all superdelegates. A one month increase in the date of the primary reduces the probability of commitment by .085 (95% CI: .036–.134). For members of Congress, the substantive effect is equal to a reduction in the probability of commitment by .005 (95% CI: .002–.009) for one day, and .142 (.062–.223) for one month. The probability of state officials who were also members of Congress, Senators and House members from single-district states, of committing early was about .092 (95% CI: .034–.219) less than other superdelegates, as the theory would predict. These members value coordinating with their constituents

[20] A comparison of the commitment behavior for each candidate's superdelegates is given in the Appendix.

[21] The Efron Method calculates the marginal probability more accurately than the Breslow method, but it is also more computationally inefficient (Cleves et al., 2008). Computational inefficiency is irrelevant given the relatively small size of the dataset, therefore the Efron Method is used.

[22] Texas and Washington use a combination of a primary and caucus, though in Washington the primary is non-binding.

[23] All variables are held at their means.

Table 1
Logit Model of Commitment Prior to Jan. 10, 2008 (Early Commitment = 1).

	All Superdelegates	Members of Congress
Candidate Choice	−1.70**	−2.00**
(Obama = 1)	(.285)	(.381)
Obama State Win	−.496	−.345
	(.324)	(.451)
Party Leader	−.160	−.112
	(.297)	(.483)
Type of Election	.079	.489
(Primary = 1)	(.379)	(.395)
State Official	.432	−1.77**
	(.286)	(.813)
State Competitiveness	−.266	−3.63**
(1 = most competitive)	(1.54)	(1.83)
Date of Primary/Caucus	−.016**	−.022**
	(.005)	(.007)
Member-at-large	−.027	–
	(.491)	
Running for Reelection	5.64**	−.917
	(1.68)	(1.01)
Reelection × Competitiveness	−5.01**	–
	(1.81)	
Constant	.889	6.12**
	(1.49)	(2.21)
(N)	659	249
(Log likelihood)	−340.62	−128.64
(Wald χ^2; Prob > χ^2)	76.48; .00	35.33; .00
(Pseudo R^2)	.174	.241

**$p < .05$. Robust standard errors, clustered on states.

and receive a clear signal from their constituents. This result is further investigated in the Cox models.

Early committers seemed to be those who supported Clinton or had a primary early in the electoral season. None of the variables which measure whether a superdelegate was a state official, a party leader, or a member-at-large are significant in the full model. Superdelegates who had an early primary were more likely to commit, indicating they may have been anticipating voter preferences. State competitiveness is not significant in the model for all superdelegates, though it is for members of Congress. Additionally, the substantive effect is meaningful—an increase in competitiveness from its mean to its maximum reduces the likelihood of early commitment by .06 (95% CI: .001–.112). To determine the effect of electoral conditions in the state on early commitment, an interaction term between superdelegates running for reelection and state competitiveness is included in the first model. The effect is negative and significant as would be expected, and for superdelegates running for reelection, an increase of competitiveness from its mean to its maximum decreases the probability of commitment by .563 (95% CI: .142–.983).

The negative effect of the interaction term and the election date broadly support the notion that those who committed early were relatively confident in their ability to predict the winner of their state or district, while those who received a higher benefit from coordinating with their constituents and were unsure about who the voters were likely to favor, waited. These results provide support for Hypothesis 1.

The results also support the claim that early commitment was a process distinct from commitment behavior during the primary season. Recall that these individuals committed months, in many cases, in advance of the first primaries and caucuses. Most were not expecting the process to become as contentious as it was, and most it seems, believed Clinton would be the nominee. What does not appear to be driving commitment is the rush to a candidate by the party elites. If superdelegates, acting as party elites wanted to influence voters, there is no reason to commit later when the state has a late primary or caucus.

4.2. The timing of decisions

During the 2008 primary season, one of the most puzzling aspects of superdelegate behavior was the variation in the timing of their endorsement. Hypothesis 2 claims superdelegates are more likely to wait as the clarity of the voter's choice increases, while Hypothesis 3 predicts an interaction effect between constituent benefits and the clarity of the signal. I test each of these claims using Cox proportional hazards models, which measure the effect of a variable on time to failure (in this context, commitment to a candidate), and competing risks models which measure the effect of a variable on time to one failure, controlling for other possible failures.[24]

Whether or not a superdelegate is elected at the state level (e.g. governors, senators, attorneys general) is used as a proxy to measure the clarity of the signal. Because such individuals' constituency is the entire state, the information they receive from their district median voter is clear—state-level polling measures their districts perfectly, elections are tabulated at the state level (they may not be at the district level), and media attention is focused on the state primary race rather than at the local level. The expectation is that state elected officials should have been more likely to wait because they received the clearest signal from their district median voter.[25]

The model specifications are very similar to the logit models run previously. The Cox models however, include a time-varying covariate that measures whether or not an election has occurred in the state. The model also includes different categorical variables for different types of unpledged delegates. Superdelegates who were running for reelection, and members of Congress all receive large

[24] The Cox proportional hazards model is one approach to measuring the failure of an observation, but it is by no means the only possible estimator. Its important advantage is that it does not require a specification of the duration time a *priori*, thus it is usually the preferred model (Box-Steffensmeier and Jones, 2004). A split population model is useful if the assumption that every observation could theoretically experience failure does not hold. In this case, nearly all superdelegates committed to one of the candidates, and theoretically, all superdelegates have to commit to a candidate across a long enough time period because they vote for a candidate at the party's convention.

[25] There are five states where electoral returns are measured at the congressional district level: Kansas, Nebraska, New Mexico, Virginia, and Kentucky. I also tested Cox models where members from these states are included as a separate variable because these individuals also could have received a clear signal from voters after an election. The variable is not significantly different from other members of Congress in different iterations of the model tested. This is not surprising because there are only eight Democratic House members who reside in states with congressional district-level tabulated results.

benefits from coordinating with their constituents and should have lower hazards. Conversely, members-at-large, because they are appointed by the party chair and by state committees, should have higher hazards of commitment.

The critical assumption of the Cox model is that a variable's effect on the hazard rate is constant over time. That is, the effect of a variable does not change at different times within the sample. The assumption was tested with Schoenfeld residuals using the Grambsch and Therneau test. If a covariate violated the assumption, the variable was interacted with a function of time variable as advocated by Box-Steffensmeier and Jones (2004). For this reason, each of the models includes variables interacted with the logged value of time if that variable violated the proportional hazards assumption.[26]

The models also includes a shared frailty term for states; the frailty term is included to capture unexplained variance in timing considerations—the variance may be due to political culture, state party or government institutions or other unobserved, state-level factors related to the timing of superdelegate behavior. The inclusion of the shared frailty term means the hazard coefficients reported in Table 2 must be interpreted as conditional on a given level of frailty because the term is non-zero in each of the models.

Table 2 reports hazard coefficients and their associated standard errors. Negative hazard coefficients indicate the variable reduces the risk of commitment while positive signs indicate the opposite. For example, superdelegates who committed to Obama have a negative coefficient. As compared to Clinton supporters, committing to Obama reduced the hazard of commitment. Three models are shown: the first model includes superdelegate characteristics and positions, the second and third models include other superdelegate characteristics interacted with personal and electoral situations to capture the relationship between voter signals and constituent concerns.

In the first two models, being a state official reduces the hazard of commitment. This provides strong support of Hypothesis 2 because these individuals were much more likely to wait—an action that becomes more valuable as the clarity of the voter's decision increases. In the first model the hazard of state officials is 39% less than other superdelegates. In the second model, being a state official reduces a superdelegate's hazard of commitment by 42% (the state official variable in both models is interacted with the log of time because it violates the proportional hazards assumption). It should be noted that state officials, if they are trying to influence voters rather than being influenced by them, have no incentive to wait longer than other delegates. Because they are the superdelegates likely to be most influential, they actually have strong incentives to commit early if their goal is to influence voters.

Alternatively, members-at-large, who do not have constituents and have little incentive to wait, have a higher hazard than other superdelegates. In the first model, their hazard, when interacted with time, increases by almost 52%, while in the second model, the hazard for members-at-large is 36% greater (both results are significant at the .1 level). In the third model, the member-at-large variable just misses the standard level of statistical significance ($p = .11$), and the substantive effect is an increase in the hazard of 38%.

Did superdelegates who placed a high value on coordinating with their constituents wait? Yes, based on the negative effects of the Congress variable and the interaction terms which test different conditions for superdelegates running for reelection. In the second model (column 2), the hazard for members of Congress is 29% less than for other superdelegates, while in model 3, it is 50% less, all else equal. These results combined with those for members-at-large and state elected officials, support Hypothesis 1 and 2, which claim constituent concerns and signal clarity reduce the probability of candidate commitment.

Other variables, designed to test for elite influence, have no statistically significant effects. For all superdelegates, the occurrence of an election does not affect the hazard. Whether the state held a primary or caucus also has no effect on the timing of commitment. Additionally, the "party leader" variables have no statistically significant effect on the hazard. There is little evidence commitment timing was an attempt by party elites to systematically influence voters.

Table 2
Cox Proportional Hazard Model of Superdelegate Commitment Time (for Superdelegates Who Committed After Jan. 10, 2008).

Candidate Selection	−1.06**	−1.03**	−1.00**
(Obama = 1)	(.122)	(.123)	(.122)
Occurrence of	−.229	−.230	−.214
Primary/Caucus	(.150)	(.150)	(.150)
(Time-varying)			
State Official	1.72	2.00	.182
	(.666)	(.670)	(.217)
State Official ×	−.499**	−.539**	–
Time (Logged)	(.159)	(.159)	
Party Leader	−.077	.099	−.062
	(.140)	(.138)	(.141)
Type of Election	−.040	−.203	−.049
(Primary = 1)	(.146)	(.123)	(.145)
State Competitiveness	−1.04	−.887	−.875
(1 = most competitive)	(.662)	(.680)	(.665)
Member-at-large	−1.20	.311	.323**
	(.932)	(.195)	(.194)
Member-at-large ×	.415*	–	–
Time (Logged)	(.234)		
Member of Congress	–	−.341*	−.684**
		(.190)	(.215)
Running for Reelection	–	.415	.483**
		(.267)	(.225)
Reelection × State	–	−.456*	–
Competitiveness		(.260)	
(After Primary)			
Reelection × State	–	–	−1.23**
Official			(.433)
Frailty LR Test of θ	3.23; .036	3.33.034	2.66.051
(Number of Failures)	449	449	449
(Number of Subjects)	507	507	507
(Log likelihood)	−2244.37	−2241.45	−2243.83
(Wald) χ^2; Prob > χ^2)	108.55; .00	112.16; .00	105.62; .00
(AIC)	4506.73	4504.90	4507.66

*$p < .1$, **$p < .05$. Efron method used for ties. Gamma distribution was used for the conditional frailty estimated for states.

[26] The Akaike Information Criterion is included as a measure of model fit. Other specifications of the time interaction variable were tested, but the natural log function fit the data the best.

The second and third columns of the table are hazards models which include interaction terms intended as a test of Hypothesis 3, which suggests that constituent benefits and signal clarity will interact to reduce the hazard of commitment as constituent benefits increase and signal clarity decreases.

The interaction terms support Hypothesis 3. First, though competitiveness is not statistically significant by itself, the variable was interacted with members running for reelection and the occurrence of a primary to capture the effect of superdelegates who care about coordinating with their constituents, and wait for the voters' signal, but have a difficult time discerning their preferences. As expected, the variable is negative, statistically significant, and substantively interesting. After a primary election, an increase in the competitiveness of the state primary or caucus from its mean to maximum reduces the hazard of those running for reelection by about 2.59% (significant at the .08 level).

Column 3 displays the results from a model where state officials are interacted with running for reelection. As suggested above, elected superdelegates who were running for reelection in 2008 may have been particularly sensitive to their constituent's preferences. State officials running for reelection have a hazard almost 71% less than their state counterparts who were not running for reelection. The positive coefficient on the reelection component term shows that those superdelegates running for reelection who did not have a state constituency were more likely to commit than those who did. These superdelegates had no incentive to wait because they anticipated the lack of a clear signal, so they did not commit as late as state officials who were also running for reelection.

The shared frailty term in each of the models is significant or nearly significant at the .05 level. The term measures whether states have distinct risks, or unobserved factors that caused superdelegates within separate states to have different hazards. As discussed above, this unobserved heterogeneity may be the result of unique political culture within the state, state political institutions, or some other unobserved factor. The frailty term indicates there is within state heterogeneity, even after controlling for the electoral institutions of the state, the timing of the state election, and the political conditions in the state during the 2008 primary campaign (e.g. competitiveness of the state).

4.3. Competing risks of candidate selection

The last set of empirical tests use a competing risks model to determine whether the commitment process differed for each of the two candidates. That is, were the underlying mechanisms which drove commitment specific to each candidate? The interpretation of the coefficients is similar to Cox models, but the failure is now commitment to Obama, controlling for commitment to Clinton as well as the other covariates. Standard errors are clustered on states. In Table 3, the number of failures are the number of commitments to Obama, and the number of competing risks are the number of commitments to Clinton.

The models also provide additional tests of whether superdelegates had their own candidate preference and whether the party elite attempted to drive voter preferences.

Table 3
Competing Risks Model of Superdelegate Commitment (for Superdelegates Who Committed After Jan. 10, 2008). Competing Risk = Clinton Commitment.

	All Superdelegates		Members of Congress
Obama State Win	.330**	−.107	.198
	(.157)	(.241)	(.202)
Occurrence of Primary/ Caucus	.867**	.468**	.564**
	(.232)	(.177)	(.248)
(Time-varying)			
State Official	.072	.064	−.262
	(.184)	(.187)	(.187)
Party Leader	.131	.117	−.064
	(.158)	(.220)	
Type of Election	−.399**	−.378**	.039
(Primary = 1)	(.125)	(.130)	(.215)
State Competitiveness	.464	.551	1.18
(1 = most competitive)	(.570)	(.565)	(1.61)
Member-at-large	−.145	.225	–
	(.206)	(.204)	
Member of Congress	.044	.054	–
	(.191)	(.190)	
Running for Reelection	.120	.099	–
	(.199)	(.198)	
Obama State Win × Occurrence of Primary		.631**	
		(.252)	
Women's Caucus	–	–	−.170
			(.213)
Black Caucus	–	–	.707*
			(.373)
(Number of Failures)	320	320	118
(Number of Competing Risks)	129	129	26
Log-pseudolikelihood	−1833.50	−1830.63	−511.12
(Wald χ^2; Prob > χ^2)	54.77; .00	66.69; .00	20.74; .01
(AIC)	3681.12	3681.26	1038.241

*$p < .1$, **$p < .05$. Standard errors clustered on state.

There are a few important results to note. If party leaders supported one candidate it would provide evidence that party elites, rather than voters, were the primary factor behind Obama winning the nomination. However, the variable is not significant in any of the models indicating neither candidate was favored by state-chairs or vice-chairs. During the primary season, it was widely reported that Obama did better in caucus states while Clinton performed better in primary states—an observation the results seem to bear out as the variable has a significant, negative effect on the hazard of committing to Obama. The substantive effect for a primary state is a 33% decrease in the hazard. Among members of Congress, the variable is not significant.

If Obama won the superdelegate's state, the hazard of commitment to Obama increased by 39%. Furthermore, the occurrence of a primary (a time-varying covariate), increases the hazard of commitment to Obama by 137%. The second column of the table includes a variable which interacts the occurrence of a primary with an Obama win in the state. The expectation is that this variable will increase the hazard of committing to Obama because superdelegates in these states observe an election and observe Obama winning the state. The variable increases the hazard of committing to Obama by 88% as compared to states where Clinton won.

The competing risks model for members of Congress is included to test whether personal preferences, as measured through gender or racial identification with a candidate,

made selection of a particular candidate more likely. The results partially support the identification conclusion as members of the Congressional Black Caucus have a higher hazard of selecting Obama (significant at the .1 level). The substantive effect is large—being a member of the Congressional Black Caucus increases the hazard of Obama commitment by 102%. Women supported Clinton at greater rates in the Iowa caucus (Redlawsk et al., 2008), but this support did not carry over to superdelegates. Consistent with the model for all superdelegates, the occurrence of a primary increased the hazard of commitment to Obama by 76%.

The competing risks models are most notable for what they do not show. There is little evidence that all Democratic elites overwhelmingly favored one candidate. Different types of delegates preferred different candidates. Further, there is no evidence for strategic or sophisticated actions by the party elite to favor one candidate and drive the other out of the race. Nor does there appear to be much evidence that superdelegates of one type influenced other types. In general, elected officials behaved differently than members-at-large, and neither members-at-large nor state party chairs or vice-chairs coordinated their commitment actions.

5. Discussion

The main normative complaint leveled against the superdelegate system is that candidate selection was based on own personal preferences, or based on an attempt to coordinate with other party elites to the detriment of the voting public. The results provide strong evidence that superdelegates who had constituency concerns looked to voters for cues about who to support. Although some Democrats and the media accused (most) superdelegates of being out-of-touch or willfully ignoring Democratic voters, this does not appear to be the case. The process dragged on because many superdelegates were uncertain about the preferences of their constituents and were trying to obtain more information about who voters supported.

There is some evidence that superdelegates who did not have constituent concerns in 2008 committed based on their own preferences, just as they were expected to do when the system was first established. There is, however, no evidence from the pooled or competing risks hazards model that there was a concerted effort by unpledged delegates to systematically commit to one candidate at one particular point in time along with other party elites. In each of the models, variables measuring different types of superdelegates have different effects on the hazard of committing. The invisible primary appears to have had little effect on voter's choices during the 2008 primary system.

Those superdelegates who were not meaningfully connected to voters, such as members-at-large, did not directly prolong the process because these individuals actually made up their minds earlier on average during the primary season, though it may have led to increased support for the losing candidate which may have had the indirect effect of encouraging Clinton to stay in the race.[27]

[27] See Makse and Sokhey (2010) for evidence the long, divisive primary hurt Obama in the general election.

Is the Democratic primary system unfair to Democratic voters? 2008 was an unusual year, but as discussed above, it was not unprecedented. The superdelegates also played an important role in the 1984 and 1988 contests. In each case, they may not have been pivotal or as influential as they were in 2008, but they were certainly relevant. And, candidates running for the nomination have frequently voiced concerns about the unfairness of the process. The formal and empirical assessments suggest the superdelegate process represents Democratic voters, but elites also play an important role. The Democratic primary is largely based on public consent, but the rules also attempt to ensure minority views or preferences are incorporated into the selection process.

Traditionally, Democratic nomination rules have been designed to protect minority groups. According to Mayer, "…the Democrats are more likely to adopt rules that provide special recognition and representation to minority groups and factions" (Mayer, 1996, 160). In most ways, the process worked the way the Democratic Party hoped when it first created the unpledged delegate. Those who should have reflected Democratic voters likely did, while those superdelegates who had no reason to account for Democratic voters did not. On these grounds, the system can hardly be called "profoundly unfair" as Sen. Harkin said and as the media portrayed it in 2008, and it is likely no more unfair than other nominating rules used by the Democrats (e.g. decisions about how to allocate to pledged delegates within states to candidates (Mayer, 1996)). The Democratic Party—like other institutions—must decide how it wants to balance voter and elite preferences for populism with its non-majoritarian goal of minority representation.

Acknowledgments

I wish to thank Anand Sokhey and Scott Wolford, both of whom provided immeasurable help by reading numerous drafts of the manuscript. I also thank Chris Markl, Vanessa Baird and participants at the 2009 Southern Political Science Conference as well as Laron Williams and Robert McGrath who participated in numerous conversations about the paper at the 2009 EITM Summer Institute at the University of Michigan.

Appendix A.

Table A1
Summary of Clinton and Obama Superdelegate Commitment Times.

Candidate	Incidence Rate	No. of Superdelegates	Survival Time (in days)		
			25%	50%	75%
Clinton	.02	129	26	32	61
Obama	.011	320	37	105	146
Total	.013	449	32	57	131

Appendix B.

Proof of Proposition 1. Begin by considering the superdelegate's decision in the last stage of the game. Assume beliefs are updated according to Bayes' Rule on path.

Off-path, when the superdelegate moves first and the voter sends a signal, the superdelegate does not update her prior beliefs.

In equilibrium, the superdelegate updates her beliefs as defined in Eqs. (1) and (2) in the text. The expected utility to the superdelegate for committing to candidate 2 given $d = 2$ compared to commitment to candidate 1:

$$\begin{aligned} EU_s(2|d=2) &= Pr(2|d=2)(b) + (1 - Pr(2|d=2))(0) \\ &\geq EU_s(1|d=2) = Pr(2|d=2)(s) + (1 - Pr(2|d=2))(s+b) \end{aligned} \tag{3}$$

or

$$q \leq \frac{(b-s)\alpha}{b+s-2s\alpha} = \overline{q} \tag{4}$$

and the superdelegate selects 1 otherwise. The expected utility to the superdelegate for committing to candidate 1 given $d = 1$ compared to commitment to candidate 2:

$$\begin{aligned} EU_s(1|d=1) &= Pr(1|d=1)(s+b) + (1 - Pr(1|d=1))(s) \\ &\geq EU_s(2|d=1) = Pr(1|d=1)(0) + (1 - Pr(1|d=1))(b) \end{aligned} \tag{5}$$

$$q \geq \frac{(s-b)(1-\alpha)}{(-b-s)(1-2\alpha)} = \underline{q} \tag{6}$$

and the superdelegate selects 2 otherwise. If $q > \overline{q}$, superdelegate selects 1 regardless of signal, if $q < \underline{q}$, superdelegate selects 2 regardless of signal, if $\underline{q} \leq q \leq \overline{q}$ she commits based on the signal if she waits.

Proof of Proposition 2. If $q > \overline{q}$, then

$EU_s(1) \geq \max\{EU_s(\text{wait}), EU_s(2)\}$ conditional on the voter's actions.

$$\begin{aligned} EU_s(1) \geq EU_s(wait) \leftrightarrow q(s+b) + (1-q)(s) \geq \delta[q(\alpha(s+b) \\ + (1-\alpha)(s+b)) + (1-q)(\alpha(s) + (1-\alpha)(s))] \end{aligned} \tag{9}$$

This always holds. Therefore, if $q > \overline{q}$ then $EU_s(\text{wait}) < EU_s(1)$ is always true.

$EU_s(1) \geq EU_s(2)$:

$$q(s+b) + (1-q)(s) \geq q(0) + (1-q)(b) \tag{8}$$

or when $q \geq ((1/2) + (s/b)(1/2))$ and the superdelegate selects 2 otherwise.

If the voter observers the superdelegate selecting candidate 1, the voter coordinates with the superdelegate if:

$$\begin{aligned} &U_v(1) \geq U_v(2) \\ &(p + \overline{\gamma})x \geq \left(1 - p + \underline{\gamma}\right) y \\ &x > \frac{\left(1 - p + \underline{\gamma}\right) y}{(p + \overline{\gamma})} \end{aligned} \tag{9}$$

And otherwise, the voter selects candidate 2 given a choice of 1 by the superdelegate.

Proof of Proposition 3. If $q < \underline{q}$, then

$EU_s(2) \geq \max\{EU_s(\text{wait}), EU_s(1)\}$ conditional on the voter's actions.

$$\begin{aligned} EU_s(2) \geq EU_s(wait) \leftrightarrow q(0) + (1-q)(b) \geq \delta[q(\alpha(0) \\ + (1-\alpha)(0)) + (1-q)(\alpha(b) + (1-\alpha)(b))] \end{aligned} \tag{10}$$

This always holds. Therefore, if $q < \underline{q}$ then $EU_s(2) > EU_s(\text{wait})$ is always true. $EU_s(2) > EU_s(1)$ when $q < (1/2) + (s/b)(1/2)$. See Proposition 2.

If the voter observers the superdelegate selecting candidate 2, the voter coordinates with the superdelegate if:

$$\begin{aligned} &U_v(2) \geq U_v(1) \\ &\left(p + \underline{\gamma}\right) x \leq (1 - p + \overline{\gamma}) y \\ &y \geq \frac{\left(p + \underline{\gamma}\right) x}{1 - p + \overline{\gamma}} \end{aligned} \tag{11}$$

And otherwise, the selects candidate 1, given a choice of 2 by the superdelegate.

Proof of Proposition 4. If $\underline{q} < q < \overline{q}$, then

$EU_s(\text{wait}) \geq \max\{EU_s(1), EU_s(2)\}$ conditional on the voter's actions given the voter's signal.

$$\begin{aligned} EU_s(wait) \geq EU_s(1) \leftrightarrow \delta[q(\alpha(s+b) + (1-\alpha)(0)) \\ + (1-q)(\alpha(b) + (1-\alpha)(s))] \geq q(s+b) \\ + (1-q)(s) \end{aligned} \tag{12}$$

or, the superdelegate waits if $\delta \geq (b(-1+2q)+s)/(q(b+s))$, and $\alpha \geq (q(b+s))/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$ and selects 1 otherwise.

$$\begin{aligned} EU_s(wait) \geq EU_s(2) = \delta[q(\alpha(s+b) + (1-\alpha)(0)) \\ + (1-q)(\alpha(b) + (1-\alpha)(s))] \geq q(s) + (1-q)(b) \end{aligned} \tag{13}$$

or, the superdelegate waits if: $\delta \geq s/(b+s)$, and $\alpha \geq (b - bq + (-1+2q)s)/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$ and selects 2 otherwise.

See Propositions 2 and 3 for the voter's behavior.

If $\underline{q} < q < \overline{q}$, the superdelegate waits if $\delta \geq (b(-1+2q)+s)/(q(b+s))$, and $\alpha > (q(b+s))/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$ and selects 1 otherwise or waits if $\delta \geq s/(b+s)$, and $\alpha \geq (b - bq + (-1+2q)s)/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$ and selects 2 otherwise.

Proof of Proposition 5. If $\underline{q} < q < \overline{q}$ and if $\delta < (b(-1+2q)+s)/(q(b+s))$ or $\alpha < (q(b+s))/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$, or if $\delta < s/(b+s)$, or $\alpha < (b - bq + (-1+2q)s)/(b(1+q(-1+\delta)) + s(-1+q+q\delta))$ then the $EU_s(1) \geq EU_s(2)$ if:

$$q(s+b) + (1-q)(s) \geq q(0) + (1-q)(b) \tag{14}$$

or when $q \geq 1 - (s/b)(1/2)$. The superdelegate selects 2 otherwise. See Propositions 2 and 3 for the voter's behavior.

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