

Why Women Win When They Run: The Strategic Calculations of Female Candidates

Heather L. Ondercin
hondercin@gmail.com

Abstract

I argue the gender neutrality of election results reported in the existing literature is a function of *where and when* female candidate choose to run for elected office. Specifically, female candidates act strategically by emerging in locations where they are more likely to win the primary and general elections. Using a two-stage probit model on all regularly scheduled congressional elections between 1992 and 2014, I demonstrate that the expectations of winning the primary and general elections are significant predictors of candidate emergence. The findings demonstrate that female candidate emergence is non-random. These results imply that studies focusing on potential obstacles to female candidate success need to pay attention to how the process of emergence influences election outcomes.

For over two decades, observers of the U.S. Congress have noted that “When women run, they win” (for examples, see Burrell 2014, Darcy, Welch & Clark 1994, Seltzer, Newman & Leighton 1997). Women have made modest gains in representation over the last twenty years: moving from 11% to 19% of the U.S. Congress and from 22% to 25% of state legislatures (Center for American Women and Politics 2017). Consistent with these gains, many recent studies conclude that women do not face a disadvantage at the ballot box on Election Day (Burrell 2014, Dolan 2014).

Despite the increase in the number of women in elected office, thirteen states do not have a woman currently serving in Congress. Further, two states have never sent a woman to Congress. Iowa recently sent its first women to the U.S. Senate in 2016, but has never elected a woman to the House of Representatives. The uneven geography of where women run and win suggests that the electoral map may not be as gender neutral as recent scholarship suggests (Palmer & Simon 2010). Indeed, research continues to find that voters hold and employ gender stereotypes when evaluating candidates (Ditonto 2016, Bauer 2015, Schneider & Bos 2014, Holman, Merolla & Zechmeister 2011, Holman, Merolla & Zechmeister 2016, Holman, Merolla & Zechmeister 2017). Moreover, the process of candidate emergence is highly gendered (Schneider et al. 2015, Preece & Stoddard 2015*b*, Kanthak & Woon 2015, Fulton et al. 2006). Motivated by these observations, this paper investigates whether the reason women win when they run is because women disproportionately run for office *where* they will win.

Drawing on research regarding the strategic calculations of candidates, (Lazarus 2008, Stone & Maisel 2003, Rohde 1979, Black 1972) and the observations that some districts may be more friendly towards female candidate (Palmer & Simon 2010), I argue female candidates are strategic and more likely to enter races where are more likely to win. This strategic behavior in choosing where to run should result in female candidates having an advantage in the primary and general elections compared to men. I build on pervious research

showing female candidates are strategic in their electoral calculations (Crowder-Meyer & Smith 2015, Burrell 2014, Fulton et al. 2006, Ondercin & Welch 2009) and scholarship that challenges the gender neutrality of elections (Thomsen & Swers 2017, Barnes, Branton & Cassese 2016, Pearson & McGhee 2013, Fulton 2012).

This project makes several unique and important theoretical and empirical contributions to the study of women and electoral politics. Existing research commonly treats different stages of the electoral process as independent of each other; examining candidate emergence, success in the primary, and success in the general as separate processes. I argue that, due to the strategic behavior of female candidates, candidate emergence and candidate success are linked in an endogenous relationship. Using a two-stage probit model, I directly model this hypothesized, reciprocal relationship between female candidate success and emergence for elections to the United States House of Representatives between 1992 and 2014. I expect that female candidates will choose to run in districts where female candidates are most likely to win. Additionally, all else being equal, I expect that this strategic behavior should provide female candidates with an electoral advantage and they should be more likely to win the elections when they emerge. I find that the expectation of success is a significant predictor of female candidate emergence. However, there is mixed evidence that this strategic behavior provides female candidates with an additional electoral advantaged when it comes to winning the primary and general elections.

My analysis of the processes the process of candidate emergence and success for female Democrats and female Republicans seperately highlights how party continues to shape the elecotral fortunes of female candidates (Palmer & Simon 2010, Sanbonmatsu 2003, Thomsen 2015, Crowder-Meyer & Lauderdale 2014). While both Democratic women and Republican women are strategic in where they emerge, only Democratic women are rewarded with an electoral advantage for their strategic behavior. Republican women then have to be “better” than an equally situated male to achieve electoral success.

This research has important implications for our understanding of gender in the U.S. electoral system. In particular, the findings highlight that female candidates still face many obstacles when running for elected office. These obstacles help explain why the levels of women's representation have only marginally increased over the past several decades. First, increases in the representation of women in elected office are dependent on the emergence of female candidates. However, potential female candidates are aware that their chances of winning are not equal everywhere in the United States. A low likelihood of winning in a district means that female candidates are simply less likely to emerge in these locations. This implies there are still substantial electoral obstacles faced by female candidates. Second, the non-random process of female candidate emergences has important implications for our study of gender and electoral behavior. Some recent scholarship suggests that gender plays a diminishing or insignificant role in shaping elections (Dolan 2014, Hayes & Lawless 2015, Burrell 2014). My findings suggest this is due to the non-random nature of candidate emergences. Female candidates are successful because they carefully select where to run. Additionally, a growing body of research indicates that female candidates, regardless of whether they win, act as important role models and change our understanding of who runs for elected office (Campbell & Wolbrecht 2006). If candidate emergence is contained mostly to places where women will win, the role model effects of female candidates will be geographically limited. Understanding how candidate success and candidate emergence are linked is critical for understanding women's representation in elected office.

Strategic Candidate Emergence

The path to elected office for any candidate consists of three stages: emergence in a primary, winning a primary, and winning the general election. Different factors may influence each stage of this process (Windett 2011, Ondercin & Welch 2009). Focusing on the end-stage

of the electoral process, all else equal, women do not seem to be disadvantaged on Election Day (e.g., Burrell 2014, Dolan 2014). However, these findings do not mean that gender fails to influence the electoral process (Dittmar 2015). Extensive research demonstrates that during the first stage of the electoral process, candidate emergence, gender influences the decision and interest in running for office (Schneider et al. 2015, Preece & Stoddard 2015*b*, Kanthak & Woon 2015). I argue that emerging and winning are not independent processes; rather, the likelihood of emerging as a candidate will depend on the likelihood of winning the election. If female candidates act strategically by selecting races where gender will not have a negative effect, analyses of general election outcomes will find no difference in the success of male and female candidates.

Why do women act strategically in selecting races where they are more likely to win? The basic calculus underlying strategic candidate emergence is that a potential candidate will run for elected office when the benefit of the candidate running and winning outweighs the cost (Rohde 1979, Lazarus 2008, Stone & Maisel 2003). This holds for both male and female candidates. The extensive literature on gender and candidate emergence documents many reasons why women may see running for election as more costly than men. This implies women require either a larger benefit or a greater probability of winning than men to emerge as a candidate in the first place.

Previous research illustrates the psychological underpinnings of why women view running for office as more costly than do men. First, women tend to express lower levels of ambition than similarly situated men (Holman & Schneider 2016, Lawless & Fox 2010, Fulton et al. 2006). Part of the reason for women's lower levels of ambition is the personal costs associated with familial responsibilities (Fulton et al. 2006). Additionally, women tend to see themselves as less qualified to run for elected office than men, translating into fewer women running (Lawless & Fox 2005, Fox & Lawless 2004). Evaluating one's qualifications for office suggests that you have both the strategic resources and personal skills necessary for a successful bid

(Stone, Maisel & Maestas 2004). If potential candidates view themselves as lacking these skills and resources, then they are likely to see a higher cost of running for elected office because they have to develop these skills and resources. As a result, women who run for office often are more qualified than male candidates (Fulton 2012, Burrell 2014, Lawless & Pearson 2008).

Potential candidates' self-assessments may make elections more costly in other ways as well. Lower levels of perceived qualifications influence how political elites view potential female candidates, leading to lower rates of recruitment of female candidates by the political parties (Fox & Lawless 2004). Interestingly, potential female candidates also do not respond at the same rate to party recruitment messages (Butler & Preece 2016, Stoddard, Preece & Fisher 2015, Preece & Stoddard 2015*a*), indicating that female candidates view their electoral chances differently than male candidates.

Second, women tend to be more risk-averse (Schneider et al. 2015, Sweet-Cushman 2016). The psychological predisposition to risk aversion makes it less likely that women will want to enter the electoral environment. Women tend to be turned off by the electoral environment and are more sensitive to the opportunity structure and electoral considerations (Fulton et al. 2006). Women are more likely to express interest in serving on legislative bodies when the selection is made by lottery than when it requires running in elections (Kanthak & Woon 2015, Preece & Stoddard 2015*b*). The ambition gap is partially a function of women viewing politics as conflictual and women's lower desire to engage in conflict. The ambition gap shrinks when the role of the politician is reframed to focus on communal qualities (Schneider et al. 2015).

Female candidates are more likely to take advantage of electoral opportunities that are lower cost by running in open seats, Democratic-leaning districts, and districts with other women-friendly characteristics (Wilcox 1994, Ondercin & Welch 2009, Palmer & Simon 2010, Hoffman, Palmer & Gaddie 2001). A notable exception in the gender and politics literature,

Windett (2011) explicitly recognizes that the stages of the electoral process are linked. He uses a three-stage selection model and finds that expression of political ambition for governorships is structured by the states' gendered political subculture. Taken together, this research suggests female candidates see the electoral environment differently than male candidates.

Finally, female incumbents are more likely to face quality challengers, and more candidates are likely to emerge along with other women in primary elections (Lawless & Pearson 2008, Pearson & McGhee 2013). Due to this increased competition, female incumbents may face more costly elections. This heightened competition places many female candidates at an electoral disadvantage relative to men (Pearson & McGhee 2013, Barnes, Branton & Cassese 2016). Additionally, female candidates may not receive the same return on their campaign spending as male candidates (Herrick 1996). As a result, female candidates may not only perceive the cost of elections differently than male candidates, but the actual financial cost of running in elections may be higher for women.

Much of the literature on women candidate emergence follows from the basic idea that strategic politicians are “calculating and rational. The chances of securing their party’s nomination are carefully considered, and entry into a race is based on the likelihood of success” (Gertzog 2002, p. 103). This literature is “gender blind,” treating all candidates as having the same evaluations or calculations. While examining the circumstances surrounding where and when women chose to run for elected office, their analyses do not directly test whether or how the probability of winning influences the emergence of female candidates.¹ Additionally, existing research typically analyzes the emergence and success of female candidates as independent processes. The preceding discussion, though, strongly suggests the emergence of female candidates and their success are endogenous. Specifically, if women are more likely

¹Fulton et al. (2006) do use a perceived chance of winning in their models. However, perceptions of the chance of winning are likely to incorporate the differences in both the cost and the benefit, which would explain why they find no significant influence. Moreover, a variable measuring perceptions of the chance of winning does not allow us to assess whether female candidates have an actual advantage or disadvantage on election day.

to emerge as candidates where they are likely to win, then female candidates are more likely to be observed in races in which they are likely to win. I, therefore, offer the following hypotheses:

- H1: The probability that a woman will emerge as a candidate in a primary election will be positively related to the probability that a female candidate can win her party's nomination.

After winning the party nomination, candidates advance onto the general election. The success in the primary elections is only the first step, female candidates should also take into consideration their chances of winning the general election. I expect that female candidates also are more likely to emerge as candidates in elections when they are relatively likely to win the general election.

- H2: The probability that a woman will emerge as a candidate in a primary election will be positively related to the probability that a female candidate can win in the general election.

As noted in the introduction, some scholars have demonstrated that all else equal, women are not disadvantaged on Election Day (e.g., Burrell 2014, Dolan 2014). Given that female candidates are more likely to emerge in races where they are going to win, then, all else equal, female candidates should be more likely to win where they emerge.

- H3: The expectation of a female candidate emerging should be positively related to a female candidate winning primary or general election.

A positive relationship between the expectation of female candidate emergence and female candidate success indicates that female candidates experience an electoral advantage because they are selecting into races where they will be successful.

Many have challenged the gender neutral findings associated with women’s electoral chances. Female candidates that emerge tend to be higher quality candidates. After controlling for candidate quality, female candidates appear to be electorally disadvantaged compared to equivalent male candidates (Fulton 2012, Pearson & McGhee 2013, Barnes, Branton & Cassese 2016). However, Milyo & Schosberg (2000) argue that female incumbents are more likely to be challenged by higher quality challengers and, after taking challenger quality into consideration, concludes that female candidates have an electoral advantage. After accounting for the non-random nature of candidate emergence, all else being equal, we would expect that strategic behavior at the candidate emergence stage should provide an electoral advantage to female candidates. If the expectation of emergence has no effect or is negatively related to the success of female candidates, then the strategic behavior of female candidates fails to result in an electoral advantage. A neutral finding means that female candidates have to be “better” than male candidates to reach the same outcomes. If the coefficient on the expectation is negative, then female candidates will be less likely to win the election despite being “better.” This suggests electoral advantages observed in the existing literature would be a function of female candidates’ strategic emergence.

Estimating Then Endogenous Relationships: Two-Stage Probit and Measures

I analyze the relationship between female candidate emergence and success with data on all regularly scheduled elections for the U.S. House of Representatives between 1992 and 2014. The unit of analysis is the congressional district. There are three main dependent variables. The first is a dummy variable identifying female candidate emergence, coded 1 if a woman ran in a primary election and 0 if no woman ran in a primary election. It is possible that some primary elections had multiple female candidates. Here I only focus on whether

at least one woman ran in the election. The second dependent variable identifies whether a female candidate was successful in the primary election. It is coded 1 if a woman won the primary election and 0 if a woman did not win the primary election. The third dependent variable measures the success of a female candidate in the general election. It is coded 1 if a woman won in the general election and 0 if a woman did not win in the general election.

Testing these hypotheses requires an estimator that can simultaneously assess the likelihood of a female candidate emerging and the likelihood of a female candidate winning. I use a two-stage probit model (see Chiozza & Goemans 2003). I start by estimating three reduced-form probit models that treat the processes of female candidate emergence in a primary election, female candidate success in a primary election, and female candidate success in a general election as exogenous to one another. These models include a set of regressors known to be related to either the emergence of female candidates or their electoral success. I then use the parameter estimates from these models to calculate the linear expectation of female candidate emergence, female candidate success in the primary, and female candidate success in the general, respectively. Finally, I estimate a simultaneous equations model via bootstrap to estimate jointly 1) the probability of a female candidate emerging as a function of the linear expectation of a female candidate winning and set of controls and 2) the probability of a female candidate winning as a function of the linear expectation of a female candidate emerging and a set of controls. This allows us to assess if the expectation of winning influences the likelihood of a female candidate emerging and if female candidates are electorally advantaged or disadvantaged in the primary and general elections.

For identification purposes, each equation contains some variables that are not in the other equations. Ideally, theory would guide the selection of variables in each equation. Unfortunately, our understanding of the conditions that lead to the emergence and success of female candidates is not that well developed. Instead, models that treat emergence and success as independent processes often include the same sets of predictors (Ondercin &

Welch 2009). I based the model specifications on theory when it provided clear guidance, but also tested to see whether variables were significant predictors at each stage.

All model specifications include controls for incumbency, district partisanship, a woman friendly index, and the proportion of women serving in the state legislature. *Incumbency* is a dummy variable coded 1 if there is an incumbent and 0 if the seat is open. *District Partisanship* is measured as the percent of the two-party vote share captured by the Democratic presidential candidate in the most recent presidential election. *Women Friendly* is an index similar to Palmer & Simon's (2010) measure of women friendly districts. The index is based on nine district demographics (non-south, district size, percent foreign born, relative median income, percent over 25 with 4 or more years of college, percent employed in blue collar occupations, percent Hispanic, percent black, and percent urban). A district was awarded one point for each characteristic that made it similar to where women previously had been elected. To account for changes due to redistricting, this measure corresponds to each redistricting period in the data set (1992-2000, 2002-2010, 2012-2014). *State Legislature* is the proportion of women serving in the state legislature obtained from Center for American Women in Politics. The state legislature measure proxies the eligibility pool of potential candidates. Additionally, all models include dummy variables for the election year, with 1992 serving as the omitted year. These dummy variables control for any election-specific effects that may influence the emergence and success of female candidates.

Recent scholarship highlights that women tend to be competition-averse, face greater competition by quality challengers, and do not fare as well electorally when facing quality competition (Sweet-Cushman 2016, Barnes, Branton & Cassese 2016, Pearson & McGhee 2013). It is therefore important to control for conditions that might produce greater levels of competition and/or attract quality challengers. The equations predicting candidate emergence contain measures of campaign expenditures from the previous election, Democratic vote in the last election, changed party control, and district competitiveness. *Incumbent*

$Spending_{t-1}$ and $Challenger\ Spending_{t-1}$ measure campaign expenditures in the previous election. I use the previous election at the primary stage because it is the best information potential candidates have about the competitiveness of the elections. The spending data were obtained from Gary Jacobson and specified in log form.² $Democratic\ Vote_{t-1}$ is the percent vote for the Democratic candidate in that congressional district in the last election.³ $Change\ in\ Party\ Control$ is a dummy variable indicating that control of the district shifted parties in the previous election. $District\ Competitiveness$ is a dummy variable where 1 indicates that the Democratic candidate received between 45% and 55% of the vote total in the previous election. The equation predicting candidate success in the general election uses the logged amount spent by the incumbent and challenger, $Incumbent\ Spending_t$ and $Challenger\ Spending_t$, during the current election cycle. The equation predicting if a woman won the general election does not include the measures of district competitiveness or change in party control.

To control for any additional influence women in higher levels of elected office may have, I use indicators of whether women are serving in the U.S. Senate or as Governor in equations predicting candidate success in the primary and general election.⁴ $Women\ Governor$ is coded 1 if a state has a female governor and 0 otherwise. $Women\ Senators$ is a variable indicating the number of women serving as U.S. Senators in the state, taking on values between 0 and 2.

In the second stage of the estimates, I use the linear expectations generated from the reduced-form equations as endogenous explanatory variables. The quality of these estimates

²One dollar is added to all values of campaign spending before taking the log to prevent observations with 0 campaign expenditures dropping from the analysis. Adding 1 dollar to all observations perseveres the distribution of the data.

³Missing values on this variable were filled in based on the average for the redistricting period. For example, if the observation for 1994 was missing, the average of 1992, 1996, 1998, and 2000 was used for the 1994 observation.

⁴These variables did not have a relationship with female candidate emergence and were excluded from that equation.

or instruments depends on how well the reduced form equation predicted the outcome variables. The R-squared statistic from an ordinary least squares (OLS) estimate is commonly used to determine the quality of the instruments, with adequate estimates having an R-square of 0.10 or higher. Estimating an R-square to measure the goodness-of-fit is not possible with probit models. Instead, the Nagelkerke / Cragg & Uhler's, and McKelvey & Zavoina pseudo R-square measures are used to assess the quality of the instruments derived from the reduced-form models.⁵ The measures are reported in the Appendix in Table 3. Overall, the fit of the models is adequate. The measures of goodness-of-fit for the reduced form models for candidate emergence and general election success are all greater than 0.10. The fit of candidate success in the primary is below ideal values, and thus we should interpret these results with caution.

Results

To understand the uneven geography of candidate emergence and success, Figures 1 through 3 plot the probability of a female candidate emerging, winning a primary election, and winning the general election by congressional district during 2012. The predicted probabilities are based on the reduced form models reported in Table 3 in the Appendix. Darker areas on the map indicate congressional districts where women have a higher probability of emerging (Figure 1) or winning (Figures 2 and 3). Three things stand out when one considers the three maps. First, the probability of women running and winning is not random; rather, there are some specific geographical patterns. Not surprisingly, there is a low probability of women emerging or winning in congressional districts in the South. On average there is a higher probability of women emerging and winning in districts on the west coast

⁵McKelvey & Zavoina follow the same logic of OLS R-squared estimates and provide assessments of the amount of variance explained by the equations. The Nagelkerke / Cragg & Uhler's pseudo R-square represents the improvement between the null and fitted models.

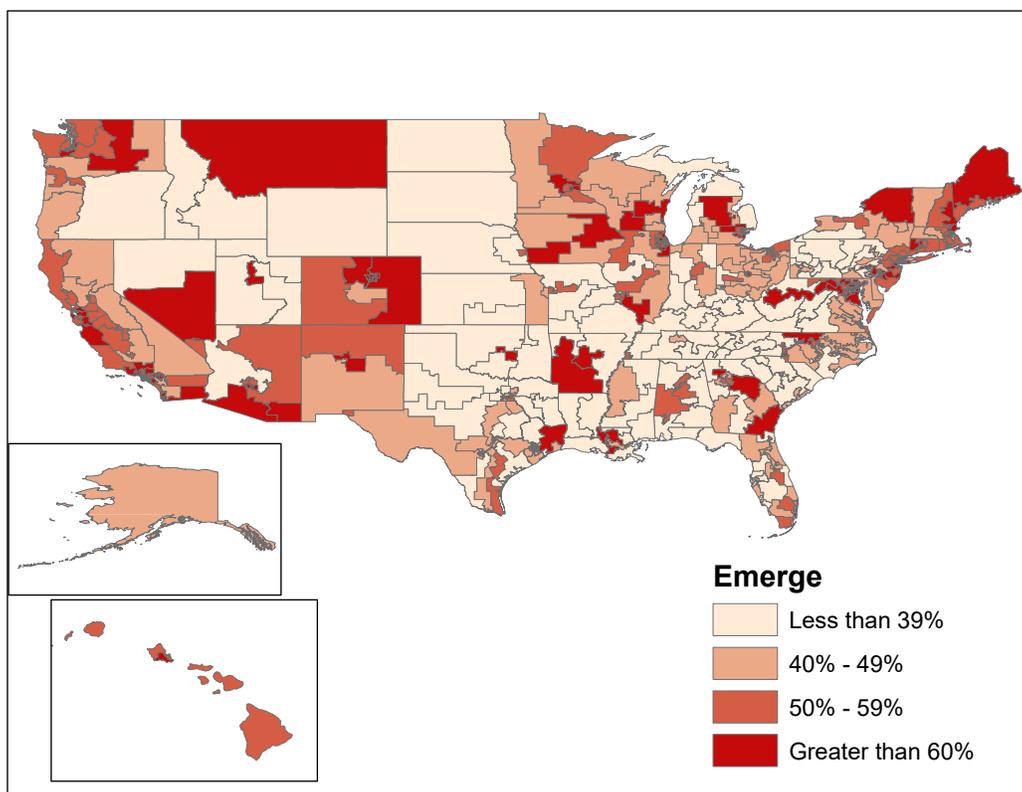


Figure 1: Predicted Probabilities of a Woman Candidate Emerging in the 2012 Primary By Congressional District

and northeast than elsewhere. Second, beyond regional variation, there is also considerable variation within states. For example, congressional districts in Florida range from electoral environments hostile to female candidate emergence and success to districts representing the best opportunities for female candidates' emergence and success. Third, the congressional districts with a higher probability of a woman winning the general and primary elections are the same places where women have a higher probability of emerging as candidates. These figures suggest that the process of candidate emergence is tied to where women are successful. I now turn my attention to directly modeling this endogenous relationship.

Table 1 reports the simultaneous equations (second-stage) estimates of the relationship between emerging in and winning the primary election. The results of the reduced-form models (first-stage) can be found in Table 3 in the Appendix. Column 1 of Table 1 reports

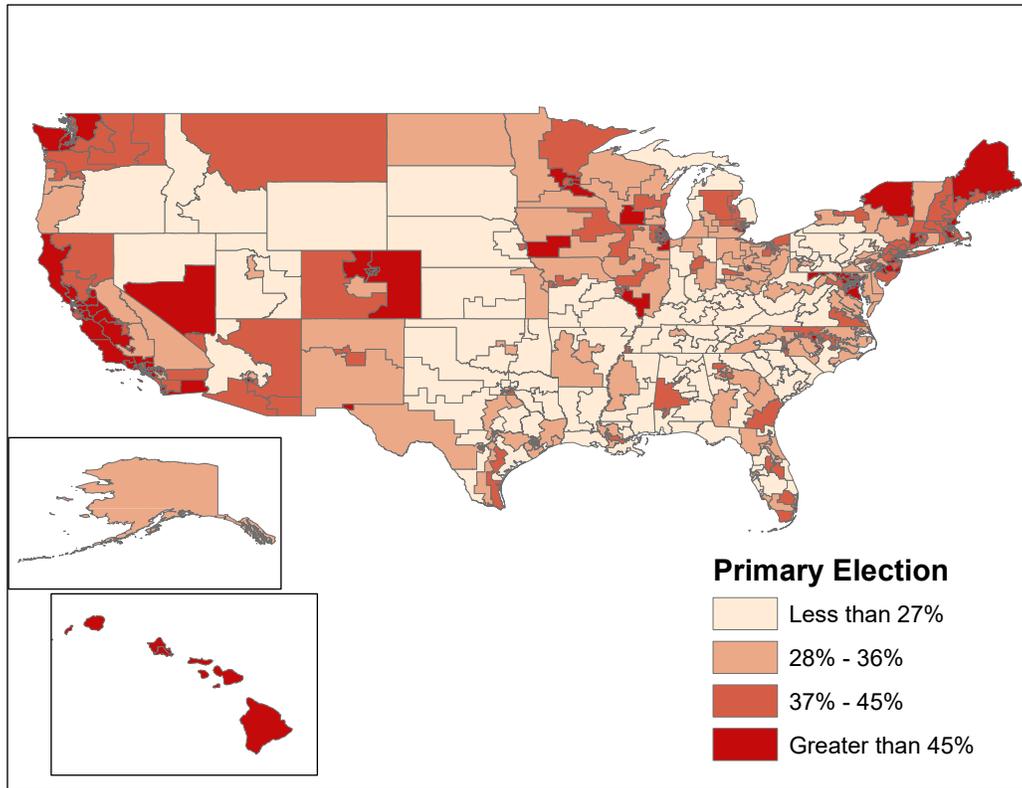


Figure 2: Predicted Probabilities of a Woman Candidate Winning a Primary Election in the 2012 Primary By Congressional District

the effects of the expectation of a female candidate winning on the likelihood of a female candidate emerging. The expectation of winning is a positive and significant predictor of candidate emergence, supporting Hypothesis 1. To illustrate this relationship, Panel A in Figure 4 plots the probability of a female candidate emerging across the range of values for the expectation of a female candidate winning the primary.⁶ The probability of a woman candidate emerging moves from 0.31 when the expectation of winning the primary is at the lowest to 0.88 when the expectation of winning the primary is at their highest. Framed differently, the chances of a woman emerging as a candidate is more that 2.5 times greater when a female is most likely to win the primary election than when a female candidate is

⁶Each tick mark in the rug plot represents the linear expectation of winning for a particular congressional district in a given election.

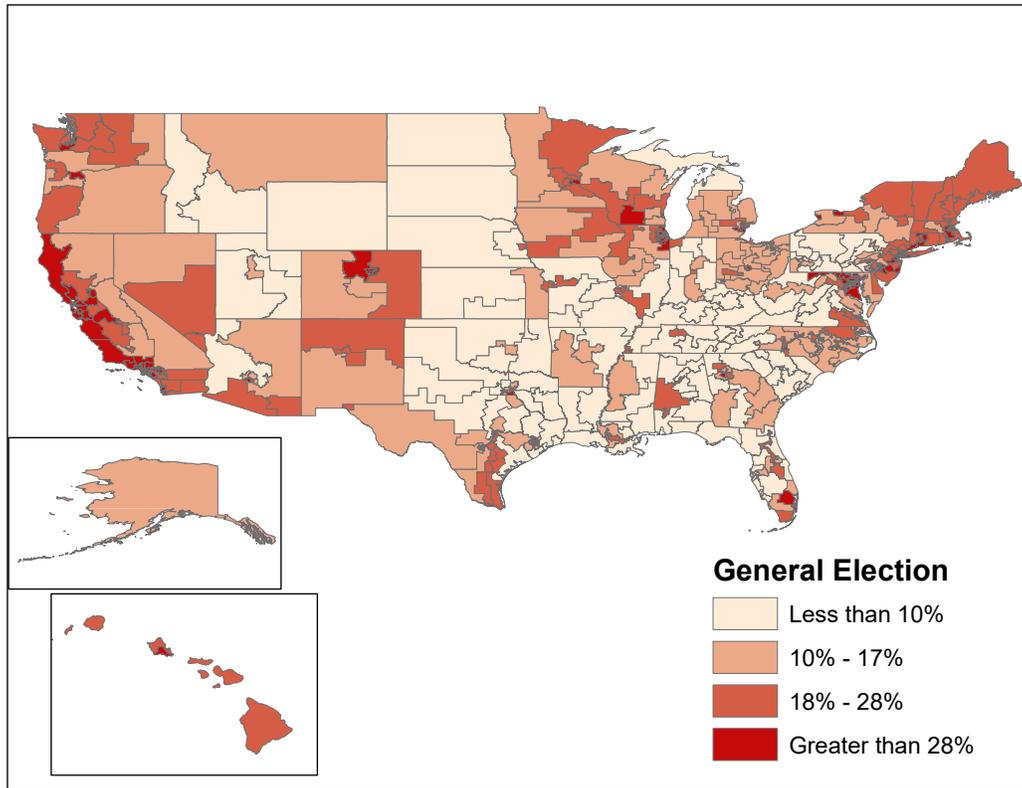


Figure 3: Predicted Probabilities of a Woman Candidate Winning a General Election in the 2012 Primary By Congressional District

least likely to win the primary election.

The equation estimating examining the influence of candidate success in the general election on female candidate emergence is reported in Column 3 of Table 1. The expectation of a woman winning the general election increases the probability of a female candidate emerging in the primary election, supporting Hypothesis 2. Panel C in Figure 4 illustrates this relationship. As the expectation of winning the general election moves from the lowest to the highest values, the probability of a woman emerging as a candidate nearly doubles, increasing from 0.44 to 0.81.

The second and fourth columns in Table 1 reports the results for the probability of a female candidate winning the primary and general elections. As expected, women are more likely to win the primary as the expectation of emerging increases. Panel B in Figure 4 reports the predicted probabilities of a female candidate winning the primary election given the expectation of emerging, illustrating that the probability of a woman winning the primary is strongest in districts where a woman is most likely to emerge. The expectation of a female candidate emerging is also positive and significantly related to a women winning the general election (Panel D). This implies that, all else being equal, female candidates experience an electoral advantage because of their strategic behavior, supporting Hypothesis 3.

My discussion of the results centers around on the influence of the endogenous predictors of candidate emergence and success because this is the substantive focus of the paper. Interpreting the effects of the exogenous explanatory variables is a bit more complicated. The exogenous explanatory variables in the simultaneous equations represent the direct effects of these variables after taking into account any indirect effects they have through the endogenous variables. Looking at the first simultaneous equations model reported in Columns 1 and 2 in Table 1, incumbency, Democratic vote_{t-1} , the presence of a female Senator, and a female governor have a direct influence on the likelihood of a woman emerging or winning the primary elections. Having an incumbent in the district deters the emergence of female candidates, but increases the likelihood of a female candidate winning. Women are less

likely to win the primary election in districts with a higher percent of the vote going to the Democratic candidate in the previous election and districts located in states with a female governor. In the second simultaneous equation model (Table 1 Columns 3 and 4), after taking the expectation of winning the general election into consideration, women are more likely to emerge in districts that cast a higher share of their vote for Democratic presidential candidates, have recently changed party control, and are competitive. Women are also more likely to emerge in districts located in states with higher levels of women's representation in the state legislature. Having an incumbent representing the district and an incumbent who spent more in the previous election lowers the likelihood of a woman emerging in the primary. After taking into account the expectation of emerging, female candidates are more likely to win in general elections when there is an incumbent, in more Democratic districts, in women friendly districts, and in districts with higher values of incumbent spending. Women are also more likely to win the general election in districts located in states that are represented by women in the Senate.

Summing up my primary analysis, I find support for Hypotheses 1 and 2 among all races: the expectations of success in the primary election and general election increase the probability of female candidates emerging in primary elections. Put succinctly, women are more likely to run in the races where they are more likely to win the primary election and more likely to win the general election. Moreover, I find support for Hypothesis 3: this strategic behavior makes female candidates more likely to win the primary and general elections.

Table 1: Two-Stage Probit Model of Female Candidate Emergence in Primary, Success in Primary, and Success in General Elections (Second Stage)

	Primary/Primary		Primary/General	
	Emergence	Success	Emergence	Success
	(se)	(se)	(se)	(se)
Expectation of Primary Success	0.84† (0.39)	–	–	–
Expectation of General Success	–	–	0.43* (0.18)	–
Expectation of Primary Emergence	–	1.29** (0.31)	–	0.63** (0.22)
Incumbent	-0.62** (0.12)	0.82** (0.26)	-0.70** (0.08)	0.15 (0.24)
District Partisanship	0.002 (0.67)	-0.17 (0.50)	0.92* (0.40)	1.07** (0.30)
Democratic Vote _{t-1}	-0.0003 (0.003)	-0.005** (0.002)	– (0.001)	
Women Friendly	0.01 (0.02)	-0.03 (0.02)	0.02 (0.02)	0.04* (0.02)
State Legislature	0.002 (0.01)	-0.003 (0.01)	0.01† (0.004)	0.01 (0.01)
Senate	–	0.04† (0.02)	–	0.05† (0.03)
Governor	–	-0.12* (0.06)	–	-0.11 (0.09)
Incumbent Spending _{t-1}	-0.001 (0.01)	0.003 (0.01)	-0.01* (0.005)	–
Challenger Spending _{t-1}	0.002 (0.01)	-0.004 (0.01)	0.005 (0.004)	–
Incumbent Spending _t	–	–	–	0.02** (0.01)
Challenger Spending _t	–	–	–	0.01 (0.01)
Change in Party Control	0.04 (0.07)	-0.08 (0.07)	0.11 † (0.06)	–
District Competitiveness	0.06 (0.07)	-0.07 (0.07)	0.10 † (0.05)	–
Constant	0.74 (0.59)	-0.78** (0.18)	0.41 (0.48)	-2.16** (0.21)
N	5168		4853	
χ^2	284.56**		303.95**	
ρ	8.17**		1.60**	
log-likelihood	-4247.02		-4217.38	

Two-tailed Significance Tests: † p≤0.1; * p≤0.05; ** p≤0.01
 Bootstrapped, robust standard errors for structural model (500 Replications).
 Temporal Domain: 1992-2014.

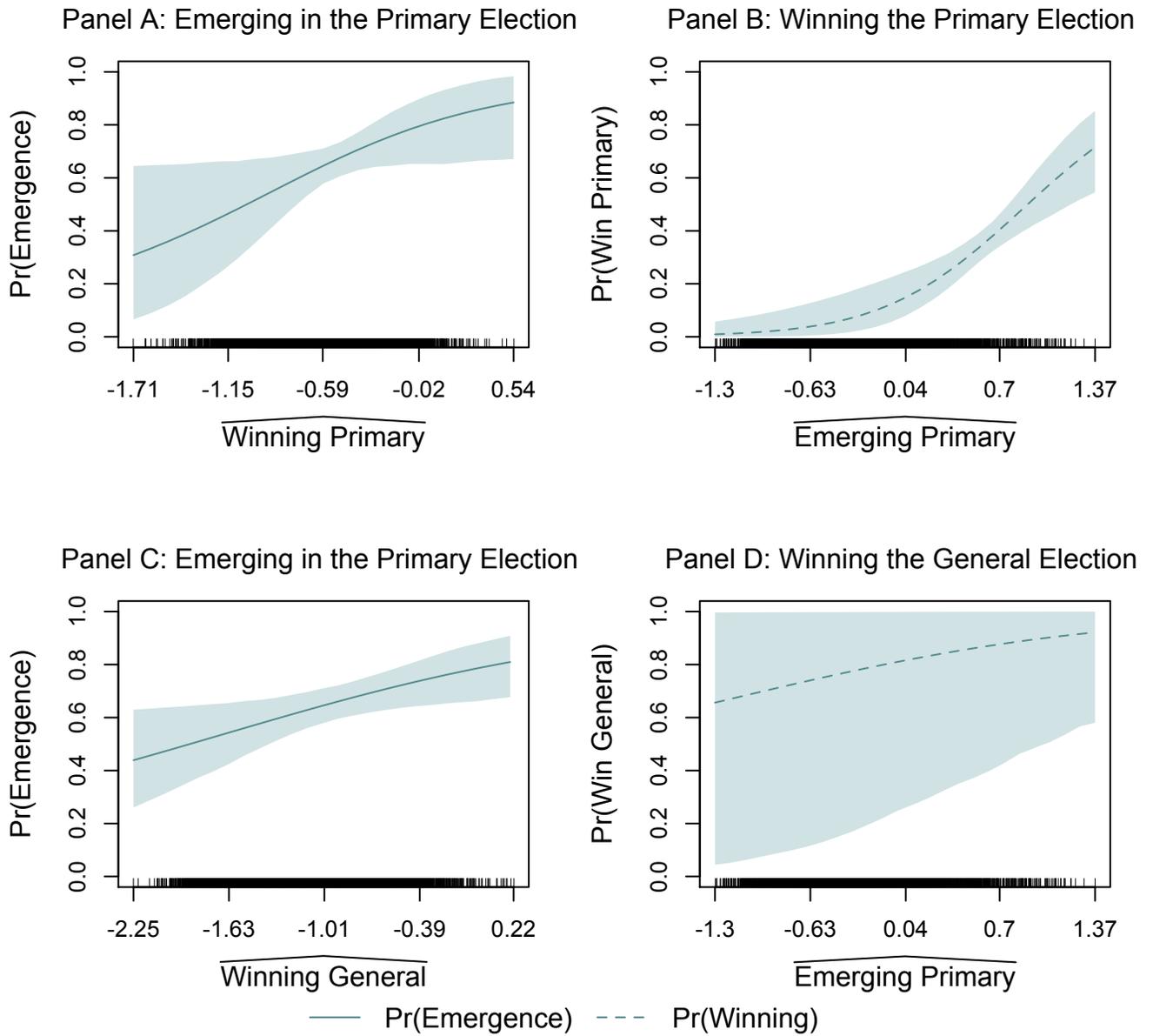


Figure 4: Predicted Probabilities of a Woman Candidate Emerging in the Primary, Woman Winning the Primary, and Woman Winning General Accounting for Endogeneity Across Stages

Democratic and Republican Women's Pathways to Elected Office

Congressional elections have become more partisan over time (Abramowitz 2010, Bartels 2000). This relationship is especially important for contests involving women. Since the 1980s, the majority of women candidates and women elected to office were members of the Democratic Party (Thomsen 2015, Sanbonmatsu 2010, Sanbonmatsu 2002, Sanbonmatsu 2003). Pathways to elected office for Republican women and Democratic women differ and this has resulted in different election rates across parties (Sanbonmatsu 2003). Smaller eligibility pools have resulted in women's under-representation in the Republican Party (Crowder-Meyer & Lauderdale 2014). Moreover, Republican women are less likely to emerge as candidates because their electoral opportunity structure is more constrained in the current polarized electoral environment (Thomsen 2015).

The intersection of gender and party suggests a more narrow opportunity structure for female Republican candidates than female Democratic candidates. Additionally, analysis of recent elections suggests that female Republicans fail to act strategically, running when the political context is unfavorable and not running when the context is favorable (Burrell 2014). As a result it is important to explore patterns of female candidate emergence of Democrats and Republicans separately. Table 2 reports the second-stage of the models estimating the emergence and success of Democratic and Republican female candidates. The reduced-form and the full results for each of these models are reported in Tables 4 and 5 in the Appendix.

Column 1 of Table 2 reports that women Democratic candidates are more likely to emerge in districts where they are likely to win the party's nomination. Panel A in Figure 5 presents the predicted probability of a Democratic woman emerging across the expectation of winning the primary. As the expectation of winning the primary increases, the probability of a woman emerging in the district increases from 0.12 to 0.80. Column 5 in Table 2 indicates a Republican woman winning the party's nomination is positively and significantly related to a Republican woman emerging in a district. From Panel C in Figure 5, there is only a 0.19

Table 2: Two-Stage Probit Estimates: Second Stage Primary Emergence and Primary Success for Democrats and Republicans

	Democrat		Democrat		Republican		Republican	
	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation of Primary Success	0.91** (0.21)	-	-	-	0.77† (0.43)	-	-	-
Expectation of General Success	-	-	-0.14* (0.07)	-	-	-	-0.35** (0.08)	-
Expectation of Emerging	-	1.49* (0.62)	-	0.65** (0.17)	-	0.02 (0.02)	-	0.78* (0.39)
Incumbent	-0.49** (0.09)	0.82† (0.46)	-0.81** (0.08)	0.40* (0.17)	-0.49** (0.08)	-0.09 (0.09)	-0.68** (0.08)	0.04 (0.39)
District Partisanship	0.51** (0.50)	-1.51 (1.45)	3.08** (0.33)	1.44** (0.34)	-0.76† (0.31)	0.28 (0.30)	-0.95* (0.32)	-1.26** (0.34)
Democratic Vote _{t-1}	-0.001 (0.002)	0.01 (0.01)	-0.01**	-	0.0003 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-
Women Friendly	0.01 (0.01)	-0.04 (0.04)	0.08** (0.02)	0.08** (0.02)	0.02 (0.01)	0.03† (0.01)	0.05** (0.01)	-0.01 (0.02)
Senate	-	-0.06**	-	-0.02 (0.03)	-	-0.08† (0.03)	-	-0.01 (0.04)
Governor	-	-0.33** (0.07)	-	0.07 (0.10)	-	0.06 (0.06)	-	0.01 (0.08)
State Legislature	0.002 (0.005)	-0.002 (0.01)	0.01* (0.004)	0.01** (0.004)	0.00 (0.01)	0.01** (0.004)	0.02** (0.004)	0.01 (0.01)
Incumbent Spending _{t-1}	-0.01 (0.01)	0.02 (0.01)	-0.02 ** (0.01)	-	-0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-
Challenger Spending _{t-1}	0.01** (0.003)	-0.01 (0.01)	-	0.01** (0.004)	0.01 (0.01)	-	0.01 (0.01)	0.01† (0.004)
Incumbent Spending _t	-	-	-	0.01* (0.01)	-	-	-	-0.03 (0.02)
Challenger Spending _t	-	-	-	-0.06** (0.01)	-	-	-	0.04 (0.02)
Change in Party Control	0.09 (0.08)	0.03 (0.07)	0.09 (0.08)	-	0.03 (0.08)	0.02 (0.09)	0.06 (0.07)	-
District Competitiveness	0.07 (0.06)	0.02 (0.06)	0.07 (0.06)	-	-0.01 (0.08)	0.08 (0.08)	0.04 (0.06)	-
Constant	0.54 (0.40)	-0.12 (0.66)	-1.80** (0.33)	-2.60 ** (0.29)	0.58 (0.80)	-1.84** (0.17)	-1.14** (0.15)	-0.75 (0.42)
ρ	3.32		2.06**		7.61**		1.92	
N	5168		4853		5168		4853	

Two-tailed Significance Tests: † p≤0.1; * p≤0.05; ** p≤.01

Bootstrapped, robust standard errors for structural model (500 Replications).

Estimates include fixed effects for year, full models included in appendix.

Temporal Domain: 1992-2014.

chance of a Republican woman emerging as a candidate in the primary election in districts where Republican women have the lowest expectation of winning. In the district where Republican women have the highest expectation of winning the party's nomination, the

probability of a women Republican emerging increases to 0.44. Interestingly, the probability of a Republican woman emerging in districts where they are most likely to win is less than 0.50, suggesting that Republican women’s lower level of representation is at least partially a function of their failure to emerge in the primary contests that offer favorable circumstances or simply there are not contests that offer favorable electoral circumstances.

Turning to the influence of the expectation of emergence on Democratic women winning the party nomination, Column 2 of Table 2 reports that the probability of winning the primary significantly increases as the expectation of a female Democratic candidate emerging in the primary election. Panel B of Figure 5 illustrates a remarkable increase from only a 0.01 chance of a woman winning in locations that are least likely to have female Democrats emerge to a 0.70 chance of a female Democrat winning the primary in the location where they are most likely to emerge as candidates. As reported in Column 4 of Table 2, the expectation of a female Republican emerging as a candidate does not have a significant influence on the probability of a Republican woman winning the primary. The lack of a significant relationship here indicates that even though Republican women demonstrate strategic behavior in terms of emergence, they do not receive any electoral benefit from where they emerge. All else equal, female Republicans have to be “better” candidates than male Republicans to achieve the same likelihood of winning the primary election.

Column 3 of Table 2 reports the results of Democratic candidate emergence given the expectation of success in the general election. Surprisingly, this relationship is negative and statistically significant; however the magnitude of the effect is on the smaller side when compared to other results. Panel A of Figure 6 illustrates that female Democrats have a 0.63 probability of emerging in primaries where they have the lowest chance of winning the general election. The probability of emerging declines to 0.40 when they are most likely to win the general election. Column 7 of Table 2 reports that the probability of a Republican woman emerging is negative and significantly related to the expectation of a Republican

woman winning the general election. Panel C of Figure 6 illustrates this relationship. In the district where the expectation of winning the general election is highest, the probability of a Republican woman emerging is only 0.14. When the expectation of winning the general election is lowest, the probability of a female Republican emerging is 0.48. My results therefore suggest Republican women are doubly disadvantaged. First, they are fail to emerge at a high rate in circumstances where they are most likely to win their party's nominations. Second, they are more likely to emerge where their chances of winning the general election are the lowest.

Column 4 of Table 2 reports the results of the probability of a female Democratic candidate winning given the expectation of a female candidate emerging. The expectation of emerging is positively and significant. Panel B of Figure 6 nicely illustrates the change in the probability of a female candidate winning the general election as a function of candidate emergence. Specifically, the probability of winning moves from 0.22 for the district where the expectation of emerging is the lowest to a probability of a female candidate winning of 0.72 in the district with the highest expectation of emergence. Column 8 in Table 2 indicates there is not a significant relationship between a Republican woman emerging as a candidate and a Republican woman winning the general election.

Some interesting dynamics emerge when Democrats and Republicans are analyzed separately. Female Democratic and Republican candidates are acting strategically by emerging in primary elections where they are more likely to win their party's nomination. This finding provides continued support for Hypothesis 1. Surprisingly, both female Democrats and Republicans are less likely to emerge in general elections where they are more likely to win, which is counter to the expectation in Hypothesis 2. This finding suggests that Democratic and Republican female candidates need to negotiate different electoral environments at the primary and general stages to be successful. Hypothesis 3 is only supported for female Democrats, who are more likely to win in races where they are more likely to emerge. This

suggests that their strategic behavior at the primary stage pays off with an electoral advantage. Republican women do not experience this electoral advantage at either the primary or general election stage, indicating that Republican women face greater electoral barriers than female Democrats when running for elected office.

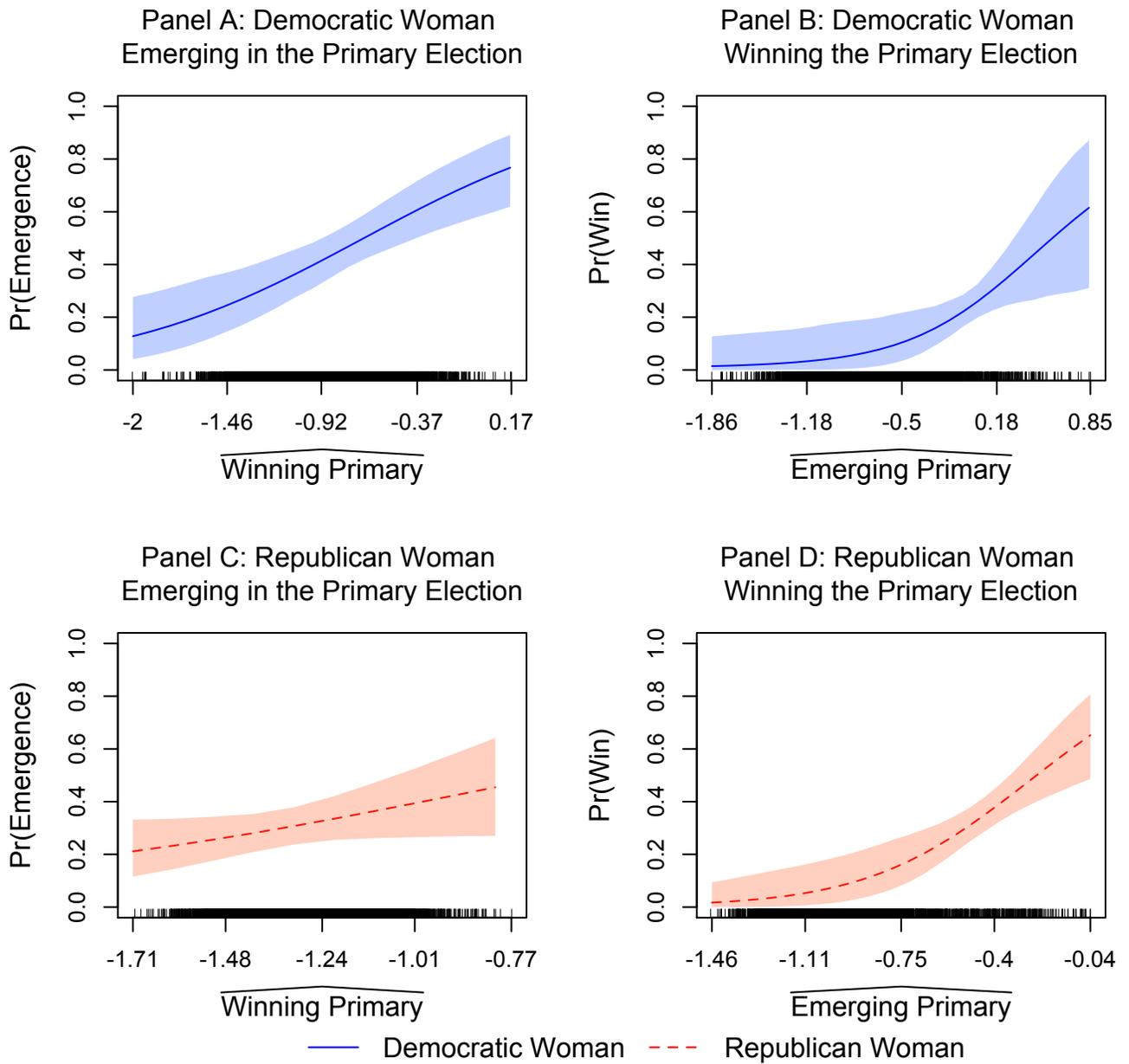


Figure 5: Predicted Probabilities of a Woman Candidate Emerging in the Primary and a Woman Winning the Primary Accounting for Endogeneity Across Stages by Party

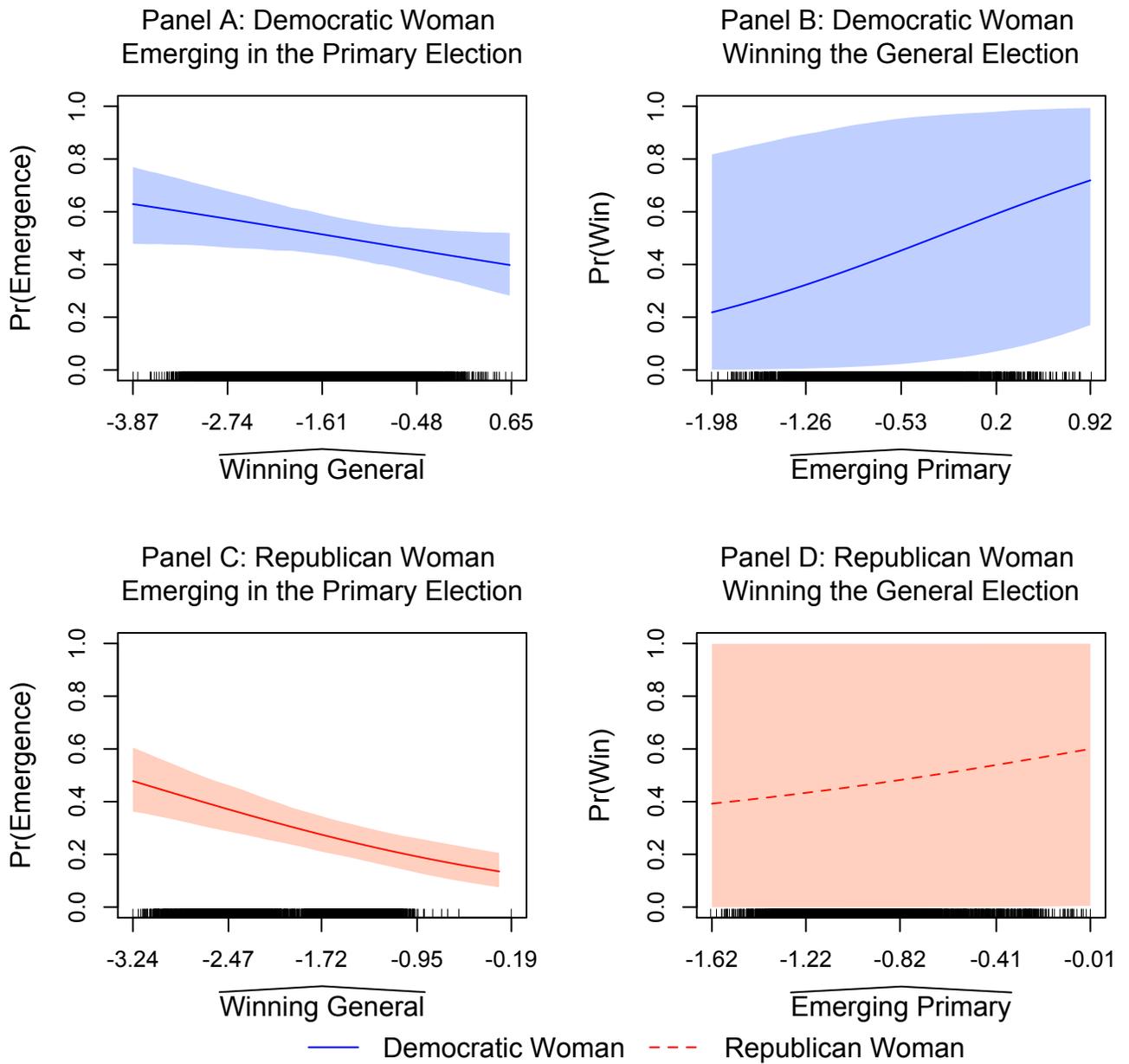


Figure 6: Predicted Probabilities of a Woman Candidate Emerging in the Primary and a Woman Winning the General Accounting for Endogeneity Across Stages by Party

Open Seat Only Analysis

It is well established that the best opportunity to increase women's representation is in open seat elections (Gaddie & Bullock 2000). While the above models do control for the presence of incumbents, I also estimated models limited to open seat elections. Table 6 in the appendix reports these results. Because of the limited sample sizes there were some convergence errors during the bootstrapping procedure. However, a large percentage of the bootstrapping runs were successful, providing reasonable estimates of the standard errors. Looking only at open seat races, success in the primary and general elections are significant predictors of candidate emergence. Figure 7 illustrates this relationship. The likelihood of a female candidate emerging increases from 0.13 to 0.97 when we move from districts with the lowest expectations of winning the primary to the districts with the highest expectation of winning the primary (Panel A). Similarly, the probability of emerging increases from 0.19 in districts where women are least likely to win the general election to 0.89 in elections where women are most likely to win the general election (Panel B). Hypotheses 1 and 2 therefore find support when looking at only open seats. The expectation of a female candidate emerging is not a significant predictor of a female candidate winning the primary or general election in open seats (Table 6, columns 5 & 7). Despite their strategic behavior about where and when to emerge as candidates in open seat elections, female candidates do not experience an electoral advantage when they choose to run. All else being equal, female candidates in open seats would have to be "better" than a male candidate to achieve the same outcome.

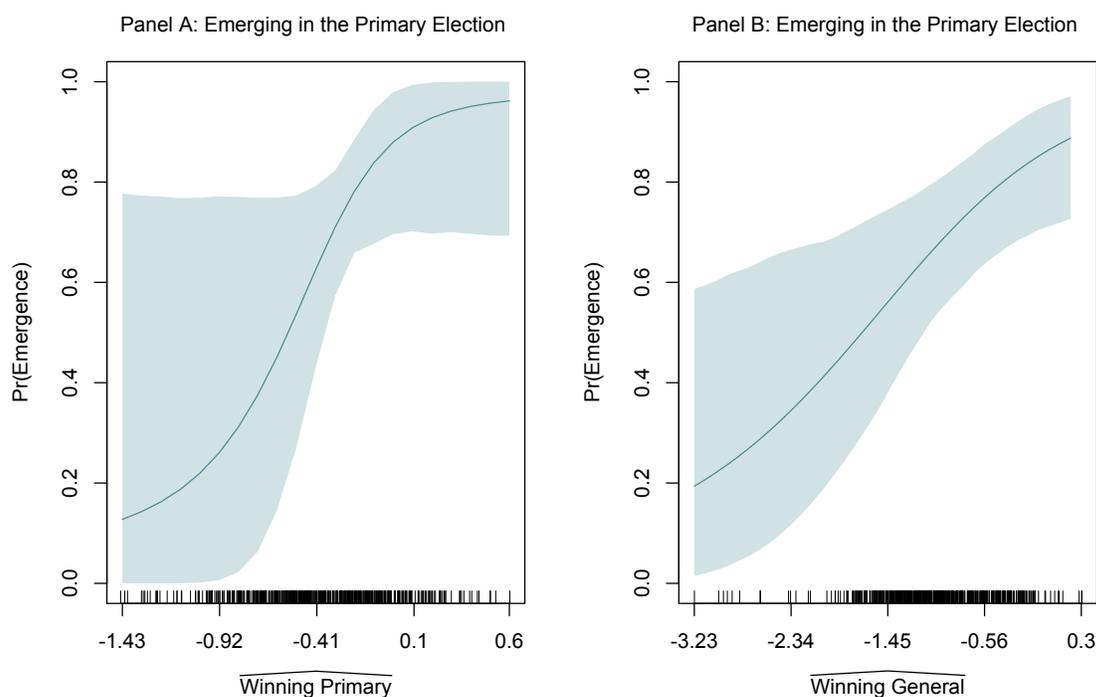


Figure 7: Predicted Probabilities of a Woman Candidate Emerging in the Primary General Accounting for Endogeneity Across Stages in Open Seats

Conclusion

The advancement of women in elected office is a multi-stage process. First, female candidates must emerge. Second, female candidates must then secure a party’s nomination in the primary election. Finally, female candidates must win the general election. Existing research treats each stage of the process as independent of the other stages. I argue that these stages are inherently interdependent due to the strategic behavior of female candidates. Consistent with this, I find that the probability of a female candidate emerging in an election is driven by the probability that a female candidate will win the primary. This strategic behavior of when and where to emerge translates into an electoral advantage for female candidates, on average. Further analyses, though, reveal that this electoral advantage is limited to Demo-

cratic women. Republican women act strategically in choosing where to emerge, but they are not rewarded for this behavior.

There are mixed results regarding how the expectation of a female candidate emerging influences the chance of a woman winning either the primary or general election. The expectation of a woman emerging is positively and significantly related to a woman winning for Democratic women. All else being equal, this suggests that the gendered process of emergence provides Democratic female candidates with an electoral advantage. The expectation of emergence is not related to Republican female candidate success. These findings suggest that female candidates have to be “better” than the average male candidate to achieve electoral success. The variation in these results indicates that electoral opportunities for female candidates are complex. My findings reiterate the importance of the parties in shaping the electoral fortunes of female candidates. In particular, my findings highlight the narrow electoral opportunity structure and additional obstacles for Republican women.

While many scholars have argued female candidates make careful calculations about where and when to run for elected office, these studies reach this conclusion by examining a variety of indirect indicators of strategic behavior. This study directly tests the assumption that female candidates act strategically by entering into races where they have a higher probability of winning. My findings suggest that where women run and win is non-random. This implies the findings that underlie the claim “when women run, they win” are most likely driven by *when* and *where* women choose to run.

These findings have important implications for the study of female candidate success. The increasing number of female candidates led to more extensive research on the barriers that women may face in electoral settings versus laboratory settings (Dolan 2014, Hayes & Lawless 2015). We should be cautious not to over-interpret the findings that gender stereotypes are diminishing and have a limited impact on electoral outcomes. Where and when female candidates emerge is not random. Specifically, women are most likely to emerge

in locations where they are most likely to win. Framed differently, female candidates are selecting to run only in places where gender and gender stereotypes are not a liability. This implies the female candidates we observe did not face traditional impediments to elected office, but it does not mean these obstacles have been removed from female candidates' paths.

The slow progress of the United States has made toward electoral parity results from the uneven geography of female candidate success. The hurdles female candidates face not only vary by location but also by the stage of the election and by party. Most likely, these obstacles are a complex interaction between voters' attitudes and party gatekeepers that shape the expression of political ambition among female candidates. While research has examined both voters' attitudes towards female candidates (Ditonto 2016, Schneider & Bos 2014, Holman, Merolla & Zechmeister 2016) and the role of party gatekeepers (Butler & Preece 2016, Crowder-Meyer 2013), further research is needed to understand how their interaction conditions the expression of political ambition and success of female candidates.

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Appendix: Full Results Tables

Table 3: Two-Stage Probit Model of Female Candidate Emergence in Primary, Success in Primary, and Success in General Elections

	Reduced Form Models			Second Stage			
	Emergence (se)	Primary Success (se)	General Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation Primary Success	-	-	-	0.84† (0.39)	-	-	-
Expectation of General Success	-	-	-	-	-	0.43* (0.18)	-
Expectation of Primary Emergence	-	-	-	-	1.29** (0.31)	-	0.63** (0.22)
Incumbent	-0.85** (0.07)	-0.27** (0.07)	-0.52** (0.11)	-0.62** (0.12)	0.82** (0.26)	-0.70** (0.08)	0.15 (0.24)
District Partisanship	1.42** (0.24)	1.67** (0.25)	1.79** (0.25)	0.002 (0.67)	-0.17 (0.50)	0.92* (0.40)	1.07** (0.30)
Democratic Vote _{t-1}	-0.01** (0.002)	-0.01** (0.002)	-	0.001 (0.003)	-0.0003 (0.002)	-0.005** (0.001)	-
Women Friendly	0.06** (0.01)	0.04** (0.01)	0.08** (0.01)	0.01 (0.02)	-0.03 (0.02)	0.02 (0.02)	0.04* (0.02)
State Legislature	0.02** (0.003)	0.02** (0.003)	0.02** (0.004)	0.002 (0.01)	-0.003 (0.01)	0.01† (0.004)	0.01 (0.01)
Senate	-	0.05† (0.03)	0.06† (0.03)	-	0.04† (0.02)	-	0.05† (0.03)
Governor	-	-0.12† (0.07)	-0.17† (0.09)	-	-0.12* (0.06)	-	-0.11 (0.09)
Incumbent Spending _{t-1}	-0.02** (0.01)	-0.02** (0.01)	-	-0.001 (0.01)	0.003 (0.01)	-0.01* (0.005)	-
Challenger Spending _{t-1}	0.01** (0.004)	0.01** (0.004)	-	0.002 (0.01)	-0.004 (0.01)	0.005 (0.004)	-
Incumbent Spending _t	-	-	0.02** (0.01)	-	-	-	0.02** (0.01)
Challenger Spending _t	-	-	0.02* (0.01)	-	-	-	0.01 (0.01)
Change in Party Control	0.11† (0.07)	0.09 (0.07)	-	0.04 (0.07)	-0.08 (0.07)	0.11 † (0.06)	-
District Competitiveness	0.11† (0.06)	0.08 (0.06)	-	0.06 (0.07)	-0.07 (0.07)	0.10 † (0.05)	-
1994	-0.06 (0.09)	-0.02 (0.10)	-0.04 (0.12)	-0.06 (0.09)	0.06 (0.11)	-0.04 (0.10)	-0.03 (0.12)
1996	-0.04 (0.09)	0.08 (0.10)	-0.05 (0.12)	-0.13 (0.10)	0.14 (0.11)	-0.04 (0.09)	-0.03 (0.11)
1998	-0.18* (0.09)	0.04 (0.10)	0.04 (0.12)	-0.24** (0.09)	0.30* (0.14)	-0.19† (0.10)	0.15 (0.12)
2000	-0.12 (0.09)	0.14 (0.10)	0.12 (0.12)	-0.26* (0.11)	0.32** (0.12)	-0.16 † (0.10)	0.21 † (0.11)
2002	-0.09 (0.09)	0.19 (0.10)	0.10 (0.12)	-0.26* (0.12)	0.29* (0.12)	-0.12 (0.09)	0.16 (0.12)
2004	0.05 (0.09)	0.29** (0.10)	0.27* (0.12)	-0.21 (0.14)	0.25** (0.09)	-0.08 (0.10)	0.32** (0.11)
2006	0.12 (0.09)	0.31** (0.10)	0.30* (0.12)	-0.14 (0.16)	0.16† (0.09)	0.03 (0.11)	0.26* (0.12)
2008	0.02 (0.09)	0.18† (0.10)	0.20† (0.12)	-0.16 (.12)	0.16† (0.10)	-0.08 (0.10)	0.23* (0.11)
2010	0.21* (0.09)	0.26** (0.10)	0.13 (0.12)	-0.02 (0.13)	0.001 (0.08)	0.12 (0.09)	0.04 (0.12)
2012	0.28* (0.09)	0.33** (0.10)	0.22* (0.12)	-0.02 (0.16)	-0.02 (0.09)	0.19† (0.11)	0.09 (0.13)
2014	0.31** (0.09)	0.40** (0.10)	0.29* (0.12)	-0.06 (0.18)	0.02 (0.01)	0.23* (0.11)	0.12 (0.13)
Constant	-0.56** (0.13)	-1.47** (0.13)	-2.61** (0.16)	0.74 (0.59)	-0.78** (0.18)	0.41 (.48)	-2.16** (0.21)
N	5168	5168	4886	5168	4853		
χ^2	479.67**	289.51**	349.24**	284.56**	303.95**		
ρ	-	-	-	8.17**	1.60**		
log-likelihood	-3192.13	-2912.00	-1850.59	-4247.02	-4217.38		
Nagelkerke / Cragg & Uhler's	0.121	0.079	0.122	-	-	-	-
McKelvey & Zavoina	0.141	0.096	0.151	-	-	-	-

Two-tailed Significance Tests: † p≤0.1;* p≤0.05;** p≤0.01
 Bootstrapped, robust standard errors for structural model (500 Replications).
 Temporal Domain: 1992-2014.

Table 4: Two-Stage Probit Model of Female Democratic Candidate Emergence in Primary, Success in Primary, and Success in General Elections

	Reduced Form Models			Second Stage			
	Emergence (se)	Primary Success (se)	General Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation Primary Success	-	-	-	0.91** (0.21)	-	-	-
Expectation General Success	-	-	-	-	-	-0.14* (0.07)	-
Expectation of Emerging	-	-	-	-	1.49* (0.62)	-	0.65** (0.17)
Incumbent	-0.74** (0.06)	-0.28** (0.07)	-0.47** (0.12)	-0.49** (0.09)	0.82† (0.46)	-0.81** (0.08)	0.40* (0.17)
District Partisanship	2.32** (0.26)	2.00** (0.28)	2.82** (0.30)	0.51** (0.50)	-1.51 (1.45)	3.08** (0.33)	1.44** (0.34)
Democratic Vote _{t-1}	-0.01** (0.002)	-0.01** (0.002)	-	-0.001	0.01 (0.002)	-0.01** (0.002)	-
Women Friendly	0.07** (0.02)	0.05** (0.02)	0.11** (0.02)	0.01 (0.01)	-0.04 (0.04)	0.08** (0.02)	0.08** (0.02)
Senate	-	0.08* (0.03)	0.07 (0.04)	-	-0.06** (0.02)	-	-0.02 (0.03)
Governor	-	-0.28** (0.08)	-0.27† (0.12)	-	-0.33** (0.07)	-	0.07 (0.10)
State Legislature	0.01** (0.003)	0.01** (0.004)	0.02** (0.01)	0.002 (0.005)	-0.002 (0.01)	0.01** (0.004)	0.01* (0.004)
Incumbent Spending _{t-1}	-0.02** (0.01)	-0.02** (0.01)	-	-0.01 (0.01)	0.02 (0.01)	-0.02** (0.01)	-
Challenger Spending _{t-1}	0.02** (0.004)	0.02** (0.005)	-	0.01** (0.003)	-0.01 (0.01)	0.01** (0.004)	-
Incumbent Spending _t	-	-	0.04** (0.01)	-	-	-	0.01* (0.01)
Challenger Spending _t	-	-	-0.03** (0.01)	-	-	-	-0.06** (0.01)
Change in Party Control	0.09 (0.07)	0.03 (0.07)	-	0.09 (0.08)	0.03 (0.07)	0.09 (0.08)	-
District Competitiveness	0.09 (0.06)	0.08 (0.06)	-	0.07 (0.06)	0.02 (0.06)	0.07 (0.06)	-
1994	-0.09 (0.10)	-0.03 (0.11)	-0.22 (0.15)	-0.10 (0.10)	0.16 (0.15)	-0.14 (0.10)	-0.13 (0.13)
1996	-0.10 (0.10)	-0.02 (0.11)	-0.08 (0.14)	-0.15 (0.10)	0.14 (0.15)	-0.16 (0.11)	0.02 (0.13)
1998	-0.14 (0.10)	-0.01 (0.11)	-0.04 (0.15)	-0.15 (0.10)	0.22 (0.17)	-0.19† (0.11)	0.11 (0.13)
2000	-0.04 (0.10)	0.12 (0.11)	0.05 (0.15)	-0.17† (0.10)	0.19 (0.12)	-0.06 (0.10)	0.13 (0.12)
2002	-0.12 (0.10)	0.04 (0.11)	-0.07 (0.15)	-0.19† (0.10)	0.22 (0.17)	-0.18† (0.10)	0.02 (0.14)
2004	0.05 (0.10)	0.19† (0.11)	0.11 (0.15)	-0.14 (0.11)	0.13 (0.10)	0.03 (0.10)	0.12 (0.13)
2006	0.18 (0.10)	0.26* (0.11)	0.27† (0.15)	-0.06 (0.11)	0.002 (0.10)	0.21* (0.11)	0.15 (0.13)
2008	0.13 (0.10)	0.21† (0.11)	0.13 (0.14)	-0.07 (0.11)	0.02 (0.10)	0.11 (0.10)	0.16 (0.13)
2010	0.00 (0.10)	0.13 (0.11)	-0.18 (0.15)	-0.12 (0.12)	0.14 (0.11)	-0.06 (0.10)	-0.10 (0.12)
2012	0.22* (0.10)	0.30** (0.11)	0.12 (0.12)	-0.07 (0.12)	-0.03 (0.11)	0.22* (0.14)	0.04 (0.11)
2014	0.18† (0.10)	0.27* (0.11)	0.16 (0.15)	-0.09 (0.11)	0.01 (0.02)	0.19 † (0.10)	0.11 (0.13)
Constant	-1.13** (0.13)	-1.75** (0.15)	-3.65** (0.21)	0.54 (0.40)	-0.12 (0.66)	-1.80** (0.33)	-2.60** (0.29)
N	5168.00	5168.00	4886.00	5168		4853	
χ^2	451.41**	294.0**	795.70**	281.23**		553.15**	
ρ	-	-	-	3.32		2.06**	
log-likelihood	-2732.00	-2371.70	-1149.24	-3457.59		-3110.91	
Nagelkerke / Cragg & Uhler's	0.123	0.089	0.320	-	-	-	-
McKelvey & Zavoina	0.148	0.114	0.431	-	-	-	-

Two-tailed Significance Tests: † p≤0.1;* p≤0.05;** p≤0.01
 Bootstrapped, robust standard errors for structural model (500 Replications).
 Temporal Domain: 1992-2014.

Table 5: Two-Stage Probit Model of Female Republican Candidate Emergence in Primary, Success in Primary, and Success in General Elections

	Reduced Form Models			Second Stage			
	Emergence (se)	Primary Success (se)	General Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation Primary Success	-	-	-	0.77 (0.43)	-	-	-
Expectation General Success	-	-	-	-	-	-0.35** (0.08)	-
Expectation of Emerging	-	-	-	-	0.02 (0.02)	-	0.78* (0.39)
Incumbent	-0.58** (0.07)	-0.11 (0.08)	-0.94** (0.21)	-0.49** (0.08)	-0.09 (0.09)	-0.68** (0.08)	0.04 (0.39)
District Partisanship	-0.51 (0.28)	0.29 (0.32)	-1.34** (0.40)	-0.76† (0.31)	0.28 (0.30)	-0.95* (0.32)	-1.26** (0.34)
Democratic Vote _{t-1}	0.003 (0.002)	0.001 (0.002)	-	0.0003 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-
Woman Friendly	0.04* (0.01)	0.03 (0.02)	0.02 (0.02)	0.02 (0.01)	0.03† (0.01)	0.05** (0.01)	-0.01 (0.02)
Senate	-	-0.07 (0.04)	-0.03 (0.05)	-	-0.08† (0.03)	-	-0.01 (0.04)
Governor	-	0.07 (0.09)	0.03 (0.12)	-	0.06 (0.06)	-	0.01 (0.08)
State Legislature	0.01** (0.004)	0.01* (0.004)	0.02* (0.01)	0.00 (0.01)	0.01** (0.004)	0.02** (0.004)	0.01 (0.01)
Incumbent Spending _{t-1}	-0.01† (0.01)	-0.01 (0.01)	-	-0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-
Challenger Spending _{t-1}	0.01† (0.005)	0.01 (0.01)	-	0.01 (0.01)	0.01 (0.01)	0.01* (0.004)	-
Incumbent Spending _t	-	-	0.01 (0.02)	-	-	-	-0.03 (0.02)
Challenger Spending _t	-	-	0.07** (0.01)	-	-	-	0.04 (0.02)
Change in Party Control	0.04 (0.07)	0.04 (0.09)	-	0.03 (0.08)	0.02 (0.09)	0.06 (0.07)	-
District Competitiveness	0.07 (0.06)	0.12 (0.07)	-	-0.01 (0.08)	0.08 (0.08)	0.04 (0.06)	-
1994	0.15 (0.11)	0.08 (0.13)	0.21 (0.18)	0.07 (0.11)	0.12 (0.13)	0.22† (0.11)	0.18 (0.20)
1996	0.13 (0.11)	0.17 (0.13)	0.01 (0.19)	-0.02 (0.13)	0.21 (0.13)	0.14 (0.11)	0.03 (0.18)
1998	0.05 (0.11)	0.20 (0.13)	0.07 (0.18)	-0.11 (0.14)	0.22 (0.13)	0.12 (0.11)	0.18 (0.17)
2000	-0.02 (0.11)	0.17 (0.13)	0.04 (0.18)	-0.16 (0.13)	0.19 (0.13)	0.02 (0.11)	0.19 (0.17)
2002	0.005 (0.11)	0.22 (0.13)	0.14 (0.18)	-0.16 (0.14)	0.22 (0.13)	0.11 (0.11)	0.17 (0.16)
2004	0.09 (0.11)	0.28† (0.13)	0.18 (0.18)	-0.14 (0.16)	0.34* (0.13)	0.18 (0.11)	0.25 (0.16)
2006	0.02 (0.11)	0.18 (0.13)	0.08 (0.18)	-0.13 (0.14)	0.21 (0.13)	0.14 (0.12)	0.05 (0.18)
2008	0.02 (0.11)	0.10 (0.13)	0.04 (0.19)	-0.07 (0.13)	0.14 (0.13)	0.09 (0.11)	0.04 (0.17)
2010	0.28* (0.11)	0.21 (0.13)	0.27 (0.18)	0.11 (0.14)	0.24 (0.14)	0.40** (0.11)	0.12 (0.20)
2012	0.21 (0.11)	0.16 (0.13)	-0.02 (0.18)	0.08 (0.13)	0.19 (0.13)	0.26† (0.11)	-0.19 (0.19)
2014	0.20 (0.11)	0.22 (0.13)	0.06 (0.18)	0.02 (0.14)	0.27† (0.13)	0.31* (0.11)	-0.02 (0.19)
Constant	-0.84** (0.15)	-1.86** (0.17)	-1.43** (0.25)	0.58 (0.80)	-1.84** (0.17)	-1.14** (0.15)	-0.75 (0.42)
N	5168	5168	4886	5168	4853		
χ^2	149.79**	46.10**	199.96**	54.50**	192.81**		
ρ	-	-	-	7.61**	1.92		
log-likelihood	-2249.84	-1626.45	-839.40	-2779.05	-2550.48		
Nagelkerke / Cragg & Uhler's	0.048	0.019	0.126	-	-	-	-
McKelvey & Zavoina	0.057	0.027	0.243	-	-	-	-

Two-tailed Significance Tests: † p<0.1;* p<0.05;** p<0.01

Temporal Domain: 1992-2014.

Bootstrapped, robust standard errors for structural model (500 Replications).

Table 6: Two-Stage Probit Estimates: Relationship between Emergence, Primary Success, and General Election in Open Seats

	Reduced Form Models			Section Stage			
	Emergence (se)	Success Primary (se)	Success General (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation of Emerging	-	-	-	-	0.01 (0.06)	-	0.16 (0.37)
Expectation of Winning Primary	-	-	-	2.29† (1.27)	-	-	-
Expectation of Winning General	-	-	-	-	-	0.66** (0.25)	-
District Partisanship	0.53 (0.76)	1.52 * (0.77)	0.85 (0.80)	-2.76 (2.19)	1.50 (0.79)	-0.48 (0.95)	0.72 (0.90)
Democratic Vote _{t-1}	-0.005 (0.01)	-0.004 (0.01)	-	0.00 (0.01)	-0.00 (0.01)	-0.01 (0.01)	0.10 (0.05)
Women Friendly	0.05 (0.04)	0.05 (0.03)	0.12** (0.04)	-0.06 (0.07)	0.05 (0.04)	-0.01 (0.05)	0.10 (0.05)
Senate	-	-0.07 (0.09)	-0.16 (0.10)	-0.07 (0.10)	-	-	-0.14 (0.11)
Governor	-	0.13 (0.22)	0.10 (0.26)	0.07 (0.22)	-	-	-0.01 (0.26)
State Legislature	0.03** (0.01)	0.02† (0.01)	0.01 (0.01)	-0.01 (0.03)	0.02 (0.01)	0.02 (0.01)	0.01 (0.02)
Democratic Spending _{t-1}	0.02 (0.01)	-0.01 (0.01)	0.03 (0.02)	-0.01 (0.02)	0.01 (0.01)	-	-
Republican Spending _{t-1}	-0.02 (0.02)	0.01 (0.02)	-0.03 (0.02)	0.00 (0.02)	-0.02 (0.01)	-	-
Democratic Spending _t	-	-	0.12 (0.06)	-	-	-	0.10 (0.05)
Republican Spending _t	-	-	-0.02 (0.03)	-	-	-	-0.03 (0.03)
Change in Party Control	-0.41** (0.14)	-0.15 (0.15)	-	-0.04 (0.26)	-0.18 (0.16)	-0.39 (0.15)	-
District Competitiveness	0.25 (0.19)	0.41* (0.18)	-	-0.74 (0.57)	0.47* (0.19)	0.09 (0.20)	-
1994	0.11 (0.25)	-0.28 (0.26)	-0.24 (0.28)	0.75 (0.44)	-0.30 (0.28)	0.21 (0.26)	-0.20 (0.29)
1996	-0.06 (0.26)	-0.39 (0.27)	-0.58 (0.30)	0.76 (0.54)	-0.39 (0.30)	0.20 (0.28)	-0.53 (0.34)
1998	-0.07 (0.28)	-0.14 (0.29)	-0.46 (0.32)	0.18 (0.36)	-0.12 (0.30)	0.15 (0.33)	-0.41 (0.33)
2000	0.42 (0.30)	0.19 (0.28)	-0.46 (0.34)	-0.07 (0.43)	0.21 (0.32)	0.54 (0.34)	-0.48 (0.41)
2002	-0.40 (0.25)	-0.18 (0.27)	-0.47 (0.31)	-0.10 (0.34)	-0.14 (0.29)	-0.20 (0.29)	-0.34 (0.39)
2004	0.35 (0.31)	0.17 (0.29)	-0.15 (0.35)	-0.06 (0.39)	0.19 (0.31)	0.49 (0.35)	-0.15 (0.39)
2006	0.11 (0.31)	0.35 (0.30)	-0.31 (0.34)	-0.73 (0.57)	0.34 (0.34)	0.08 (0.36)	-0.26 (0.43)
2008	-0.34 (0.28)	-0.49 (0.30)	-0.63 (0.36)	0.75 (0.67)	-0.51 (0.35)	-0.10 (0.30)	-0.52 (0.39)
2010	0.27 (0.28)	-0.004 (0.28)	-0.27 (0.31)	0.20 (0.31)	0.00 (0.31)	0.38 (0.32)	-0.23 (0.38)
2012	-0.01 (0.25)	0.13 (0.25)	-0.17 (0.27)	0.28 (0.31)	-0.13 (0.26)	0.11 (0.27)	-0.08 (0.28)
2014	0.45 (0.29)	-0.03 (0.26)	-0.12 (0.28)	0.50 (0.30)	-0.04 (0.28)	0.42 (0.32)	-0.17 (0.42)
Constant	-0.34 (0.40)	-1.47** (0.40)	-3.13 ** (0.81)	2.90 (1.89)	-1.48** (0.44)	1.29 (0.75)	-2.5** (0.86)
N	498	498	498	498		498	
χ ²	52.18**	37.76 **	51.31**	36.24 *		37.37**	
Log likelihood	-292.26	-303.98	-217.03	-507.78		-467.40	
ρ	-	-	-	4.61**		1.82	
McKelvey & Zavoina	0.167	0.122	0.224	-		-	
Cragg-Uhler	0.138	0.100	0.157	-		-	

Two-tailed Significance Tests: † p<0.1;* p<0.05;** p<0.01

Temporal Domain: 1992-2014.

Bootstrapped, robust standard errors for structural model (500 Replications).

Appendix: Results for Additional Analysis

Ideally, the relationships among primary emergence, primary success, and general success would have been jointly estimated using a simultaneous equation with three equations. Unfortunately, the three-equation specification failed to converge. As a result, I assessed the influence of success in the primary election and success in the general election on emergence using multiple strategies. I estimated a two-equation model with one equation predicting candidate emergence based on candidate success in the primary and general election and the second equation predicting candidate success in the primary election as a function of the expectation of primary emergence. I also estimated a second two-equation model with one equation predicting candidate emergence based on candidate success in the primary and general elections and the second equation predicting the success of a woman candidate in the general election as an expectation of emerging in the primary.

The expectations of success in the primary election and general election are highly correlated (0.87), making it extremely difficult to parse out the relationship between the two. The results of this analysis can be found in Table 7 in the appendix. First looking at all races, the expectation of success in the primary and general elections are not significantly related to emergence. However, the expectation of emerging is significantly related to winning the primary and winning the general. For both Democrats and Republicans, the expectation of success is a positive and significant predictor of candidate emergence; however, success in the general is a negative and significant predictor of candidate emergence. For Democrats, the expectation of emergence is a positive predictor of success in the primary and general elections. For Republican women, the expectation of emergence is not a significant predictor of success in the primary or general.

Table 7: Two-Stage Probit Model of Female Candidate Emergence in Primary, Success in Primary, and Success in General Elections, Alternative Specification

	All Races				Democratic				Republican			
	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)	Primary/Primary Emergence (se)	Success (se)	Primary/General Emergence (se)	Success (se)
Expectation Primary Success	0.90* (0.43)	-	0.23 (0.52)	-	1.02** (0.22)	-	1.01** (0.24)	-	1.01† (0.43)	-	1.08† (0.43)	-
Expectations of General Success	-0.07 (0.14)	-	0.37 (0.23)	-	-0.12* (0.04)	-	-0.22** (0.07)	-	-0.34 (0.05)	-	-0.37** (0.08)	-
Expectation of Emerging	-	1.29** (0.31)	-	0.64** (0.22)	-	1.49† (0.62)	-	0.64** (0.17)	-	-	0.04 (0.03)	0.75 (0.39)
Incumbent	0.62** (0.13)	0.82** (0.26)	-0.66** (0.13)	0.17 (0.24)	-0.53** (0.09)	0.82 (0.46)	-0.57** (0.17)	0.37* (0.17)	-0.57** (0.08)	-0.10 (0.09)	-0.57** (0.09)	0.03 (0.39)
District Partisanship	0.02 (0.69)	-0.17 (0.51)	0.64 (0.75)	1.06** (0.30)	0.61 (0.52)	-1.50 (1.45)	1.31** (0.52)	1.53** (0.34)	-1.25** (0.32)	0.22 (0.29)	-1.29** (0.34)	-1.28** (0.34)
Democratic Vote _{t-1}	0.002 (0.003)	-0.0003 (0.002)	-0.0003 (0.004)	-	0.001 (0.003)	0.01 (0.003)	0.001 (0.002)	-	-0.003 (0.002)	0.0002 (0.00)	-0.00 (0.00)	-
Women Friendly	0.02 (0.02)	-0.03 (0.02)	0.02 (0.02)	0.04* (0.01)	0.02 (0.02)	-0.05 (0.04)	0.02 (0.02)	0.07 (0.02)	0.02 (0.01)	0.03† (0.01)	0.02 (0.02)	-0.01 (0.02)
Senate	-	0.04† (0.02)	-	0.05† (0.03)	-	0.07* (0.02)	-	0.04 (0.03)	-	-0.08† (0.03)	-	-0.06 (0.04)
Governor	-	-0.13* (0.06)	-	-0.12 (0.09)	-	-0.32** (0.07)	-	-0.12 (0.10)	-	0.04 (0.06)	-	0.07 (0.09)
State Legislature	0.002 (0.01)	-0.003 (0.01)	0.004 (0.01)	0.005 (0.01)	-0.001 (0.005)	-0.002 (0.01)	0.0003 (0.01)	0.01* (0.004)	0.01 (0.01)	0.01** (0.00)	0.01 (0.01)	0.01 (0.01)
Incumbent Spending _{t-1}	0.0003 (0.01)	0.003 (0.01)	-0.01 (0.01)	-	-0.002 (0.01)	0.02 (0.02)	0.005 (0.01)	-	-0.001 (0.01)	-0.01 (0.01)	0.0003 (0.01)	-
Challenger Spending _{t-1}	0.001 (0.01)	-0.004 (0.01)	0.003 (0.01)	-	0.004 (0.01)	-0.01 (0.01)	-0.001 (0.01)	-	0.004 (0.01)	0.005 (0.01)	0.002 (0.01)	-
Incumbent Spending _t	-	-	-	0.02† (0.01)	-	-	-	0.01† (0.01)	-	-	-	-0.03 (0.02)
Challenger Spending _t	-	-	-	0.01 (0.01)	-	-	-	-0.06** (0.01)	-	-	-	0.04 (0.02)
Change in Party Control	0.03 (0.08)	-0.08 (0.07)	0.09 (0.07)	-	0.03 (0.07)	-0.09 (0.09)	0.06 (0.08)	-	0.01 (0.08)	-0.01 (0.09)	0.03 (0.07)	-
District Competitiveness	0.06 (0.07)	-0.07 (0.07)	0.08 (0.06)	-	0.02 (0.06)	-0.03 (0.09)	-0.003 (0.06)	-	-0.05 (0.08)	0.10 (0.07)	-0.09 (0.08)	-
1994	-0.07 (0.09)	0.06 (0.11)	-0.04 (0.10)	-0.03 (0.12)	-0.14 (0.10)	0.15 (0.15)	-0.14 (0.10)	-0.14 (0.13)	0.12 (0.12)	0.14 (0.13)	0.14 (0.12)	0.18 (0.19)
1996	-0.14 (0.10)	0.15 (0.11)	-0.07 (0.11)	-0.03 (0.11)	-0.12 (0.10)	0.14 (0.15)	-0.16 (0.11)	0.01 (0.13)	-0.05 (0.14)	0.23 (0.13)	-0.05 (0.13)	0.04 (0.18)
1998	-0.24* (0.10)	0.30* (0.10)	-0.20† (0.12)	0.15 (0.10)	-0.16 (0.17)	0.22 (0.11)	-0.19 † (0.13)	0.10 (0.14)	-0.12 (0.14)	0.23 (0.13)	-0.09 (0.14)	0.17 (0.17)
2000	-0.26* (0.11)	0.32** (0.12)	-0.19 (0.11)	0.21† (0.11)	-0.20 (0.10)	0.19 (0.12)	-0.20 † (0.11)	0.12 (0.12)	-0.18 (0.14)	0.22 (0.13)	-0.15 (0.13)	0.20 (0.17)
2002	-0.27* (0.12)	0.30** (0.12)	-0.16 (0.13)	0.15 (0.12)	-0.22† (0.10)	0.22 (0.17)	-0.25* (0.11)	0.0004 (0.12)	-0.13 (0.14)	0.23 (0.13)	-0.12 (0.14)	0.18 (0.16)
2004	-0.21 (0.14)	0.24** (0.09)	-0.13 (0.15)	0.32 ** (0.11)	-0.16 (0.11)	0.12 (0.10)	-0.16 (0.10)	0.12 (0.13)	-0.13 (0.16)	0.34* (0.12)	-0.12 (0.16)	0.26 (0.16)
2006	-0.12 (0.16)	0.15† (0.09)	-0.02 (0.16)	0.26* (0.12)	-0.06 (0.12)	-0.002 (0.10)	-0.04 (0.12)	0.15 (0.13)	-0.09 (0.14)	0.19 (0.13)	-0.05 (0.13)	0.05 (0.18)
2008	-0.15 (0.11)	0.16 (0.10)	-0.11 (0.13)	0.23* (0.11)	-0.09 (0.11)	0.02 (0.09)	-0.09 (0.11)	0.16 (0.13)	-0.05 (0.13)	0.15 (0.13)	-0.02 (0.12)	0.04 (0.17)
2010	-0.03 (0.14)	0.0001 (0.08)	0.07 (0.15)	0.04 (0.12)	-0.17 (0.11)	0.14 (0.11)	-0.20† (0.11)	-0.10 (0.12)	0.17 (0.14)	0.26† (0.13)	0.18 (0.14)	0.13 (0.20)
2012	-0.03 (0.17)	-0.02 (0.09)	0.13 (0.18)	0.09 (0.13)	-0.11 (0.12)	-0.03 (0.11)	-0.09 (0.12)	0.03 (0.14)	0.07 (0.13)	0.19 (0.13)	0.09 (0.13)	-0.18 (0.19)
2014	-0.05 (0.18)	0.01 (0.01)	0.15 (0.21)	0.12 (0.13)	-0.11 (0.11)	0.01 (0.02)	-0.08 (0.12)	0.10 (0.13)	0.04 (0.14)	0.26† (0.13)	0.08 (0.15)	-0.01 (0.19)
Constant	0.62 (0.60)	-0.79 ** (0.18)	0.59 (0.65)	-2.15 ** (0.21)	0.20 (0.43)	-0.10 (0.66)	-0.37 (0.46)	-2.63 ** (0.29)	0.79 (0.80)	-1.81** (0.17)	0.81 (0.78)	-0.79 (0.43)
ρ	6.23**		1.60**		3.30		2.06*		8.21**		1.92	
N	5168		4853		5168.00		4853		5168		4853	
χ^2	284.90**		303.66**		286.61**		554.97**		57.95**		194.97**	
log likelihood	-4185.18		-4217.28		-3394.87		-3100.83		-2736.58		-2547.25	

Two-tailed Significance Tests: † p<0.1;* p<0.05;** p<0.01
Temporal Domain: 1992-2014.

Bootstrapped, robust standard errors for structural model (500 Replications).

Stone & Maisel (2003) argue that the probability of “winning” should be defined as probability of winning both the party’s nomination and the general election. If female candidates act strategically when running for elected office, then they should be most likely to emerge in elections with the highest joint probability. Once again, ideally this claim would be assessed with a three-equation specification, but convergence issues preclude this. So I took a similar modeling approach using multiple two-equation specifications. I estimated a two-equation model with one equation predicting candidate emergence based on candidate success in the primary, general election, and the interaction between the two and the second equation predicting candidate success in the primary election as a function of the expectation of primary emergence. Then I estimated a second two-equation model with one equation predicting candidate emergence based on candidate success in the primary, general election, and the interaction and the second equation predicting the success of a women candidate in the general election as an expectation of emerging in the primary.

The results for the specifications with interactions are reported in Table 8 in the Appendix. The interaction terms prevent us from directly interpreting the effect or significance of the expectation of winning the primary election or expectation of winning the general election has on the likelihood of a woman candidate emerging (Brambor, Clark & Golder 2006). To assess these effects, I calculated the first difference for each of these variables and plotted them across the range of the other. The effect is statistically significant at the .05 level when the confidence interval does not contain 0. Figure 8 reports the first differences for the model with all races for each of the model specifications. Panel A of Figure 8 reports the effect of the expectation of winning the primary plotted for the range of the expectation of winning the general election. While it is hard to see on the graph, the expectation of winning the primary is positive and significant; however, the expectation of winning the general election is not significant (Panel B, Figure 8). In the second specification, the expectation of winning the primary is not significant (Panel C, Figure 8), but the expectation of winning the

general is significant (Panel D, Figure 8). The results for the expectation of emergence on success depends on the model specification. When considering primary success, reported in Column 2 in Table 8, the expectation of emergence is a positive and significant predictor of primary success. However, in the model analyzing a woman candidate's success in the general election, Column 4 Table 7, the expectation of a female candidate emerging is not a significant predictor.

Table 8 reports the results for models of Democratic women and Republican women with an interaction between expectation of winning the primary and general election. Figure 9 reports the first differences to assess the significance of the expectation of winning the primary and general election. Generally, winning the primary has a positive and significant effect on candidate emergence for Democratic women. The expectation of winning the general election has a small negative effect that and is significant at higher values of the expectation of primary success. Columns 6 and 8 of Table 8 report that the expectation of a female candidate emerging is a significant predictor of a female Democrat winning the primary or general election. Figure 10 presents the first differences for models for Republican women with the interaction term. The effect of winning the primary has a positive effect on the likelihood of a female candidate emerging; however, this effect is significant when the expectation of winning the general election is low. The expectation of winning the general election has a negative and significant effect on the likelihood of a woman Republican emerging in the election, regardless of the expectation of a woman Republican winning the primary. The expectation of emerging is a positive but not significant predictor of a Republican women being successful in either the primary or general elections (columns 10 & 12 Table 8).

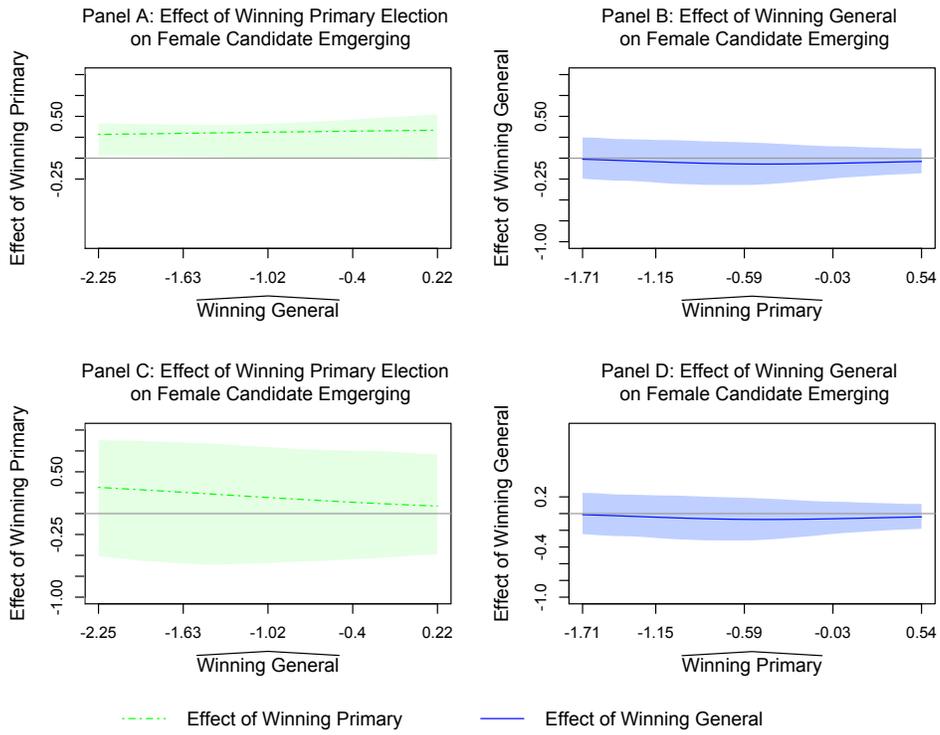


Figure 8: Effect of Primary Success and General Election Success

Table 8: Two-Stage Probit Model of Female Candidate Emergence in Primary, Success in Primary, and Success in General Elections, Interaction Specification

	All Races				Democratic				Republican			
	Primary/ Emergence (se)	Primary/ Success (se)										
Expectation General Success	-0.10 (0.15)	-	0.27 (0.24)	-	-0.15* (0.05)	-	0.01 (0.10)	-	-0.32 (0.21)	-	-0.79† (0.33)	-
Expectation Primary Success	0.87† (0.43)	-	0.15 (0.54)	-	0.98** (0.23)	-	1.31** (0.25)	-	1.02† (0.52)	-	0.52 (0.60)	-
Interaction of Success	-0.04 (0.08)	-	-0.13 (0.11)	-	-0.03 (0.04)	-	0.24** (0.06)	-	0.01 (0.16)	-	-0.32 (0.24)	-
Expectation Emergence	-	1.29** (0.31)	-	0.63* (0.22)	-	0.85** (0.12)	-	0.79** (0.18)	-	0.04 (0.03)	-	0.71 (0.39)
Incumbent	-0.62** (0.13)	0.82* (0.26)	-0.64** (0.14)	0.16 (0.24)	-0.53** (0.09)	0.35** (0.10)	-0.59** (0.09)	0.46† (0.18)	-0.57** (0.08)	-0.10 (0.09)	-0.58** (0.09)	0.02 (0.39)
District Partisanship	-0.01 (0.69)	-0.17 (0.51)	0.54 (0.75)	1.05** (0.30)	0.59 (0.52)	-0.03 (0.03)	1.44* (0.51)	1.49** (0.34)	-1.25** (0.32)	0.22 (0.29)	-1.35** (0.34)	-1.34** (0.34)
Democratic Vote _{t-1}	0.002 (0.003)	-0.0002 (0.002)	-0.003 (0.004)	-	0.002 (0.003)	-0.001 (0.004)	-0.0004 (0.003)	-	-0.003 (0.002)	0.0001 (0.002)	-0.002 (0.002)	-
Women Friendly	0.02 (0.02)	-0.03 (0.02)	0.01 (0.02)	0.04† (0.02)	0.01 (0.02)	-0.00 (0.02)	0.02 (0.02)	0.06* (0.02)	0.02 (0.01)	0.03† (0.01)	0.02 (0.02)	-0.00 (0.02)
Senate	-	0.04† (0.02)	-	0.05 (0.03)	-	0.07* (0.02)	-	0.05 (0.03)	-	-0.08† (0.03)	-	-0.06 (0.04)
Governor	-	-0.13† (0.06)	-	-0.12 (0.09)	-	-0.32** (0.07)	-	-0.16 (0.10)	-	0.04 (0.06)	-	0.06 (0.09)
State Legislature	0.001 (0.01)	-0.003 (0.01)	0.005 (0.01)	0.001 (0.01)	0.001 (0.04)	0.01 (0.004)	0.003 (0.01)	0.01† (0.01)	0.01 (0.01)	0.01** (0.00)	0.01 (0.01)	0.01 (0.01)
Incumbent Spending _{t-1}	0.001 (0.01)	0.003 (0.01)	-0.003 (0.01)	-	-0.002 (0.01)	-0.0003 (0.01)	0.001 (0.01)	-	-0.001 (0.01)	-0.01 (0.01)	0.0002 (0.01)	-
Challenger Spending _{t-1}	0.0001 (0.01)	-0.004 (0.01)	0.002 (0.01)	-	0.003 (0.01)	-0.001 (0.005)	0.01 (0.01)	-	0.004 (0.01)	0.005 (0.01)	0.003 (0.01)	-
Incumbent Spending _t	-	-	-	0.02† (0.01)	-	-	-	0.01 (0.01)	-	-	-	-0.03 (0.02)
Challenger Spending _t	-	-	-	0.01 (0.01)	-	-	-	-0.06** (0.01)	-	-	-	0.03 (0.02)
Change in Party Control	0.03 (0.08)	-0.08 (0.07)	0.09 (0.07)	-	0.03 (0.07)	-0.03 (0.07)	0.07 (0.08)	-	0.01 (0.08)	-0.01 (0.09)	0.03 (0.07)	-
District Competitiveness	0.06 (0.07)	-0.07 (0.07)	0.08 (0.06)	-	0.02 (0.06)	0.02 (0.06)	0.01 (0.06)	-	-0.05 (0.08)	0.10 (0.07)	-0.09 (0.08)	-
1994	-0.07 (0.09)	0.06 (0.11)	-0.04 (0.10)	-0.03 (0.12)	-0.14 (0.10)	0.09 (0.11)	-0.15 (0.10)	-0.14 (0.14)	0.12 (0.12)	0.14 (0.13)	0.11 (0.12)	0.18 (0.20)
1996	-0.15 (0.10)	0.15 (0.11)	-0.08 (0.11)	-0.03 (0.11)	-0.12 (0.10)	0.07 (0.11)	-0.16 (0.11)	0.01 (0.13)	-0.05 (0.14)	0.23 (0.13)	-0.08 (0.13)	0.02 (0.18)
1998	-0.24† (0.10)	0.30† (0.14)	-0.20† (0.10)	0.15 (0.12)	-0.16 (0.10)	0.13 (0.11)	-0.20 (0.11)	0.11 (0.13)	-0.12 (0.14)	0.23 (0.13)	-0.13 (0.14)	0.15 (0.17)
2000	-0.27† (0.11)	0.32* (0.12)	-0.20 (0.12)	0.21 (0.11)	-0.19 (0.10)	0.17 (0.11)	-0.21† (0.10)	0.12 (0.12)	-0.18 (0.14)	0.22 (0.13)	-0.19 (0.13)	0.21 (0.17)
2002	-0.27† (0.12)	0.30† (0.12)	-0.17 (0.13)	0.15 (0.12)	-0.21† (0.10)	0.15 (0.11)	-0.26† (0.11)	-0.00 (0.14)	-0.13 (0.14)	0.23 (0.13)	-0.15 (0.14)	0.15 (0.16)
2004	-0.22 (0.15)	0.24† (0.09)	-0.15 (0.15)	0.32* (0.12)	-0.16 (0.11)	0.15 (0.11)	-0.17 (0.10)	0.12 (0.13)	-0.13 (0.16)	0.34* (0.12)	-0.15 (0.16)	0.23 (0.16)
2006	-0.13 (0.16)	0.15 (0.09)	-0.04 (0.16)	0.25† (0.12)	-0.06 (0.12)	0.11 (0.11)	-0.04 (0.12)	0.15 (0.13)	-0.09 (0.14)	0.19 (0.13)	-0.09 (0.14)	0.03 (0.18)
2008	-0.15 (0.12)	0.16 (0.10)	-0.12 (0.13)	0.23 (0.11)	-0.09 (0.11)	0.10 (0.11)	-0.11 (0.11)	0.15 (0.13)	-0.05 (0.13)	0.15 (0.13)	-0.05 (0.12)	0.03 (0.17)
2010	-0.03 (0.14)	-0.00 (0.08)	0.05 (0.15)	0.04 (0.12)	-0.16 (0.11)	0.14 (0.11)	-0.20 (0.11)	-0.10 (0.12)	0.17 (0.14)	0.26† (0.13)	0.15 (0.14)	0.12 (0.20)
2012	-0.03 (0.17)	-0.02 (0.09)	0.11 (0.18)	0.09 (0.13)	-0.10 (0.12)	0.11 (0.11)	-0.11 (0.12)	0.02 (0.14)	0.07 (0.13)	0.19 (0.13)	0.05 (0.13)	-0.20 (0.19)
2014	-0.05 (0.18)	0.01 (0.01)	0.13 (0.21)	0.12 (0.13)	-0.11 (0.11)	0.12 (0.11)	-0.10 (0.12)	0.09 (0.13)	0.04 (0.15)	0.26† (0.13)	0.03 (0.15)	-0.03 (0.19)
Constant	0.61 (0.61)	-0.78** (0.18)	0.59 (0.65)	-2.14** (0.21)	0.17 (0.43)	-0.82** (0.18)	-0.15 (0.47)	-2.64** (0.29)	0.81 (0.88)	-1.81** (0.17)	0.14 (0.94)	-0.76 (0.42)
ρ	6.01**		1.60**		3.33		2.10		8.22***		1.93	
N	5168		4853.00		5168.00		4853		5168		4853	
χ^2	283.03**		301.18**		284.82**		493.74**		57.18**		179.52**	
log likelihood	-4185.0463		-4216.64		-3394.44		-3092.91		-2736.57		-2546.35	

Two-tailed Significance Tests: † p≤0.1; * p≤0.05; ** p≤0.01

Temporal Domain: 1992-2014.

Bootstrapped, robust standard errors for structural model (500 Replications).

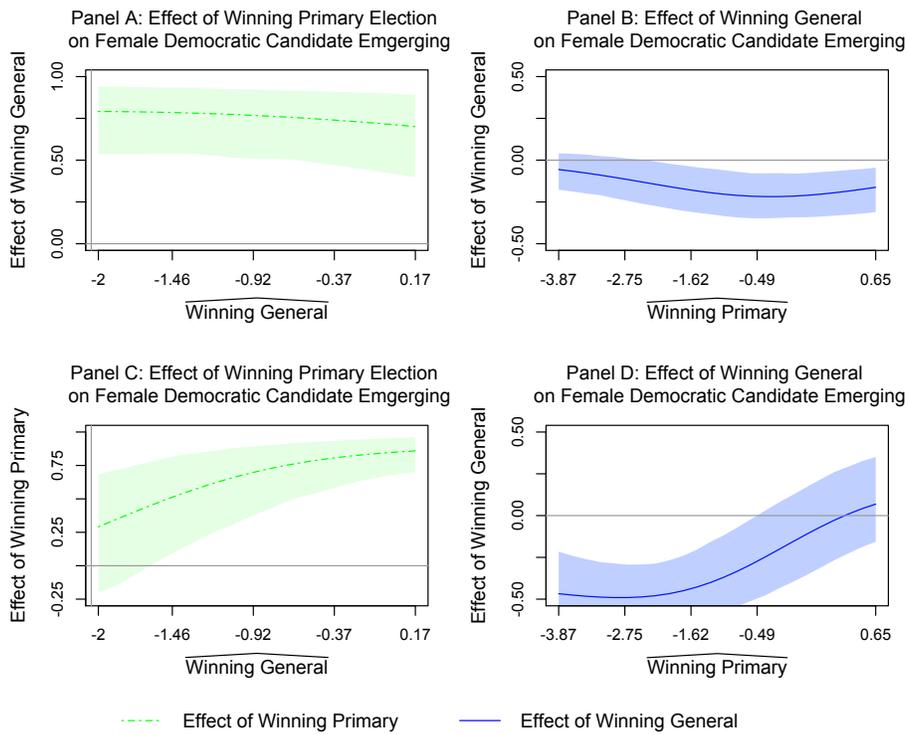


Figure 9: Effect of Primary Success and General Election Success

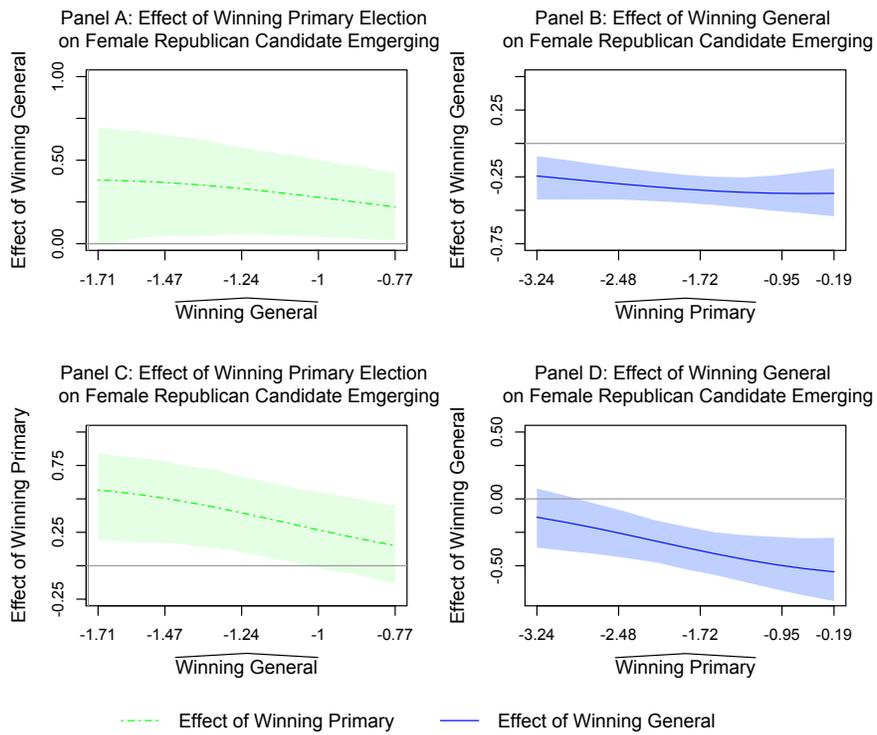


Figure 10: Effect of Primary Success and General Election Success