The Business Cycle and the Entry of Third-Party Candidates in the US State-Level Elections

Yasushi Asako   Tetsuya Matsubayashi

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Abstract

This study offers a new explanation for the entry of third-party and independent candidates into the US state-level elections. We argue that the economic benefits of holding an office is what motivates amateur politicians to run, predicting that amateur politicians find holding an elected office particularly attractive when the private sector is struggling. This is because, during the recession, amateur politicians view that an elected office is a more attractive source of income as compared to private jobs, while pursuing political power to change the economic prospect by adopting a new policy. Building on this argument, we hypothesize that as the unemployment rate increases, the number of third-party and independent candidates increases. Our analysis with panel data of state house, state senate, and gubernatorial elections in 48 US states between 1980 and 2010 reveals that the hypothesized relationship existed only for state legislative elections. To explain why these candidates run, despite their very small probability of winning, we extend the prospect theory to suggest that these candidates may overestimate their probability of winning.

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1 Introduction

Electoral competition in the U.S. is dominated by two major-parties, yet the electorate often finds the names of candidates from non-major parties on the ballot. Previous studies have documented the non-trivial number of third-party and independent candidates in the presidential (Rosenstone, Behr and Lazarus, 1996), gubernatorial (Lem and Dowling, 2006), and state legislative elections (Hamm and Hogan, 2008; Stratmann, 2005). For example, the gubernatorial election of New Jersey in 2013 was contested by 6 third-party and independent candidates in addition to the two major-party candidates. In Texas, there were 51 third-party and independent candidates for the state house election in 2012, along with 86 Democratic and 116 Republican candidates. In Colorado, 30 percent of all candidates for the state senate election in 2012 ran as a non-major party candidate.[1] Their decision to run does not seem "rational" because of the marginal probability of winning, leaving us to wonder what accounts for their behavior. This puzzle is almost equivalent to "the puzzle of not voting," another enduring question in political science. Why do third-party and independent candidates run for federal and state elections?

Previous studies have addressed this question by highlighting the importance of institutional settings, such as term limits, ballot access restrictions, and campaign finance laws (Burden, 2007; Hamm and Hogan, 2008; Lem and Dowling, 2006; Stratmann, 2005) as well as electoral environments such as election competitiveness (Burden, 2005; Dowling and Lem, 2009). In the light of the decision calculus of political actions (e.g., Riker and Ordeshook, 1968),

$$pB - C + D \geq 0, \tag{1}$$

the institutional settings and electoral environments are expected to change the probability of winning (p) or the cost of running (C), while the values of private consumption (D) and the benefit of holding a political office (B) are held constant. When a change in p and C satisfies (1), third-party and indepen-

dent candidates decide to run. More specifically, less restrictive ballot access regulations decrease the cost of entry, while more stringent campaign finance laws improve the electoral prospects of running against an incumbent by limiting the incumbent's ability to raise funding. The adoption of legislative and executive term limits increases the number of open elections and thus enhances the probability of winning. The hypothesized effect of electoral competitiveness is more complicated. Some scholars (e.g., Dowling and Lem, 2009) argue that more competitive elections increase the probability that third-party and independent candidates can make a difference, while others (e.g., Burden, 2005) argue that the opposite is true.

This study seeks to develop a new explanation for the emergence of third-party and independent candidates. Our approach differs from those in that we focus on the role of B in (1). We argue that the economic benefit of holding an office is what motivates citizens to run for a political office for two reasons. First, some citizens may view holding an elected office as a means to receive a salary and outside income (Eggers and Hainmueller, 2009; Diermeier, Keane and Merlo, 2005; Gagliarducci, Nannicini and Naticchioni, 2010; Keane and Merlo, 2010; Maddox, 2004; Mattozzi and Merlo, 2008; Querubín and Snyder, 2009). Even when legislative salaries are low relative to the private sector, these individuals may expect that legislative careers enable them to pursue additional economic returns while in office or after retirement. Therefore, they view working as an elected official as a career option to maximize their current and future earnings. Second, some citizens who are dissatisfied with the economic circumstance and the policy choice of incumbent politicians may decide to run. Holding an elected office gives them an opportunity to adopt a policy that is suitable to their economic benefits.

Building on these arguments, we predict that these citizens find holding an elected office particularly attractive when the private sector is struggling and economic prospects are weak. In other words, citizens are motivated to run when the relative economic benefit of holding a political office increases in comparison to the benefit of staying in the private sector. These amateur politicians choose to run

as a third-party or independent candidate primarily because the cost of entering as a minor-party candidate is lower than running as a major-party candidate, which typically involves more organizational and institutional complexities, such as primary elections.

To test this prediction, we use the business cycle as a measure of the relative attractiveness of the political sector to the private sector. In other words, we test the prediction that as the economy shrinks, the relative value of holding an office increases. More specifically, we hypothesize that as the unemployment rate increases, the number of third-party and independent candidates increases. This hypothesis is tested against panel data of US state house, state senate, and gubernatorial elections in 48 states between 1980 and 2010. Our analysis reveals that as the state unemployment rate increases by 1 percent, the number of third-party and independent candidates increases by 1.6 in state house elections, and by 0.6 in state senate elections. We find no relationship between the state unemployment rate and the number of third-party and independent candidates for the gubernatorial elections. These results suggest that the decision to run as a minor-party candidate is sensitive to economic circumstances within the state.

We carefully consider whether the change in B, rather than D, C, or p in (1), indeed accounts for our empirical findings. The business cycle may change the size of D (e.g., people's desire to express their opinions to the public), or C (e.g., the opportunity and any additional cost of running). However, this possibility is incompatible with the null-effect of the unemployment rate on the number of the gubernatorial candidates. If the changes in the sizes of D or C are related to the entry of these candidates, we should be able to find the similar results for all of the election types.

This null-effect on the gubernatorial elections affects our interpretation of B as well. In (1), B is weighted by p, which differs in size across three types of elections. Our data suggest that the probability of winning in a state legislative election is non-zero, while it is essentially zero in the gubernatorial elections. The different probabilities of winning, though they are marginal, may explain the null-effect of

the unemployment rate on the number of the gubernatorial candidates because any change in B multiplied by the zero value of p in (1) generates no difference in the utility of running. In contrast, because the value of p is non-zero in the state legislative elections, the utility of running changes (slightly) as B increases. Taken together, we conclude changes in B as a result of a recession, rather than changes in C or D, are likely to account for our findings.

It also seems plausible that p increases during a recession because voters are likely to be more dissatisfied with major-party politicians who have seemingly failed to manage the economy, and therefore to show more support for minor- party candidates. However, our additional analysis shows no relationship between the state unemployment rate and the number of third-party and independent candidates who won the elections. That is, p is not conditional on the state unemployment rate.

Importantly, third-party and independent candidates still have a tiny probability of winning in the state legislative elections, which means that the size of B must increase dramatically for the number of these candidates to increase during a recession. In other words, more people decide to run as a third-party and independent candidate only if the unemployment rate increases considerably during a serious economic crisis. This interpretation is unrealistic, at best. Instead, we extend the prospect theory from behavioral economics and suggest that third-party and independent candidates may incorrectly perceive their probability of winning (Kahneman and Tversky, 1979; Tversky and Kahneman 1992). The prospect theory suggests that people tend to place too much weight on a low probability that something occurs. This implies that the recession motivates third-party and independent candidates to run because (1) the benefits of holding a political office increases in a recession; and (2) they overestimate their probability of winning.

Ultimately, this study shows that the entry decision of third-party and independent candidates is sensitive to the potential economic benefits of holding a political office. We show the possibility that the neglected part of the decision calculus also plays an essential role in explaining the behavior of amateur

candidates in the U.S. Our findings are consistent with the recent economic model of politician's career, which suggests that economic payoffs are an important predictor of the entry and exit of politicians (Diermeier, Keane and Merlo, 2005; Gagliarducci, Nannicini and Naticchioni, 2010; Keane and Merlo, 2010).

2   The Business Cycle and the Entry of Third-Party Candidates

To test the relationship between the business cycle and the number of minor-party candidates, we develop a panel dataset of 48 U.S. states between 1980 and 2010. States and years are chosen based on data availability. Nebraska is excluded from our analysis because its legislature is unicameral and non-partisan.

2.1   Data and Method

We test the hypothesis by using the following model:

$$[\text{Count}]_{it} = \beta_1 [\text{Unemp}]_{it} + \lambda \mathbf{w}_{it} + \delta \mathbf{x}_{it} + \rho_i + \phi_t + \eta_j T + \epsilon_{it} \tag{2}$$

where $[\text{Count}]_{it}$ denotes the number of third-party and independent candidates in state i in election-year t; $[\text{Unemp}]_{it}$ is the annual-average unemployment rate in state i in election-year t; $\mathbf{w}_{it}$ and $\mathbf{x}_{it}$ include time-varying political and demographic variables, respectively, which may be correlated with $[\text{Unemp}]_{it}$ and $[\text{Count}]_{it}$. In addition, ρ_i denotes a state fixed effect that captures all time-invariant characteristics of state i. ϕ_t denotes a year fixed effect that captures any time-specific shocks at the national level, and $\eta_j T$ denotes a state-specific linear time trend. Finally, ϵ_{it} is a state-year specific error term.

The outcome variable, $[\text{Count}]_{it}$, is equal to the total number of third-party and independent candi-

dates running for state house, state senate, or gubernatorial elections that occurred between 1980 and 2010. To count the number of candidates for the state house and senate elections, we first identify the total number of all candidates who ran in a district, and who were not affiliated with the Democratic or Republican party by using the candidate-level database of State Legislative Election Returns, 1967-2010 (Klarner et al., 2013).[2] Here, we include all minor party candidate labels (e.g., Greens, Libertarians, Right to Life, etc.) and independent candidates. We then aggregate the number of minor-party candidates in each state by the election-year. Louisiana is excluded from our dataset because we cannot obtain sufficient information to count the number of minor-party candidates from Klarner et al. (2013). To create [Count]$_{it}$ for the gubernatorial elections, we rely on the Gubernatorial Campaign Expenditures Database, compiled by Beyle and Jensen (2013), which contains data of all gubernatorial candidates for general elections during the period of our study. Here, we simply calculate the total number of minor-party candidates in each gubernatorial election of 48 states.[3]

Table 1 shows the means of the total number of minor-party candidates for each type of election per state. The total number of observations is 736 for the state house elections, 682 for the state senate elections, and 396 for the gubernatorial elections. As discussed previously, the number of third-party and independent candidates is non-trivial in the US state legislative and executive elections.

[Table 1 Here]

As a measure of the state business cycle, we rely on the annual unemployment rate. Here, [Unemp]$_{it}$ is equal to the civilian unemployment rate in state i in election-year t. We use the state unemployment rate in election-year t because the general elections are held in November, and thus, the unemployment rate in t is likely to reflect the economic situation earlier in that same year, when amateur candidates decide whether to run. As a robustness check, we used the state unemployment rate in $t-1$ and obtained the similar results. The data are obtained from the Bureau of Economic Statistics Local Area Unemployment Statistics.

The vectors $\mathbf{x}_{it}$ denote election-specific and other institutional variables that are expected to have a direct influence on the number of minor-party candidates running for an election. When examining the count of minor-party candidates for state house and senate elections, we include the number of contested seats and open seats in election-year t of state t in (2) because they should be positively associated with the outcome variables. The data are based on Klarner et al. (2013). For the gubernatorial elections, we create an indicator variable that takes the value one if the election is open because of the term-limit restriction and zero otherwise. Additionally, following Burden (2007) and Dowling and Lem (2009), we include the measure of competitiveness in the previous election cycle. This measure is calculated as $100 - |$Democratic vote percentage $-$ Republican vote percentage$|$ in each district and then averaged for each election-year for the state.

The institutional variables are the adoption of term limit and the measure of legislative professionalism (Squire, 2007). The adoption of term limit is set to one after term limits became effective in state i and zero otherwise. The data of legislative and executive term limits are obtained from the web site of the National Conference of State Legislatures and List and Sturm (2006), respectively.[4] The data for legislative professionalism are available only for 1979, 1986, 1996, and 2003. Therefore, we linearly interpolate the values for the other years. Note that the regression model for the number of gubernatorial candidates does not include the number of contested seats or the measure of legislative professionalism.

The vectors $\mathbf{x}_{it}$ include socioeconomic characteristics. They are captured by personal income per capita, the population size, the percentage of the population over 65 years old, and the percentage of the white population. Personal income per capita in constant 1982 dollars and population size are converted into the natural log. These variables all come from the Statistical Abstract of the United States. Summary statistics are presented in Table 2.

[Table 2 Here]

All time-invariant characteristics of state i are captured by the state fixed effect, ρ_i. Time-invariant characteristics include stable institutional designs (e.g., election systems) and potentially unobservable cultural norms and ideologies that could be related to the business cycle and a candidate's entry. Thus, our estimation results are not affected by state characteristics that do not vary considerably over time.

Any time-specific shock is captured by the election-year fixed effect, ϕ_t. This variable captures the effects of election years, national economic conditions, and any other major events that occurred in a particular year that might be associated with the unemployment rate and the number of minor-party candidates.

2.2   Results

Table 3 reports the estimation results. Table entries are fixed effects regression estimates, with standard errors in parentheses. As a robustness check, we also estimated (2) by using a Poisson and negative binomial model and obtained the substantively same results as reported below.[5] Column (1) of Table 3 shows the results for the state house elections, while columns (2) and (3) show the results for the state senate elections and the gubernatorial elections, respectively. The state fixed effects, election-year fixed effects, and state-specific time trends are included in the models but not shown in the table. To address the potential heterogeneity and autocorrelation within each state, standard errors are clustered by state.

[Table 3 Here]

Column (1) indicates that the coefficient associated with the percent unemployed is positive and statistically significant. The number of third-party and independent candidates increases by 1.613 in the state house elections, as the state unemployment rate increases by 1 percent. When unemployment changes from 6 to 8 percent, that is, from the mean to one standard deviation above, three more candidates decide to run for the state house elections. As expected, column (1) also suggests that the number

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of third-party and independent candidates increases when the number of contested and open seats increase in the particular election year.

Column (2) presents the similar results for the state senate elections. The number of third-party and independent candidates increases by 0.630 in the state senate elections, as the state unemployment rate increases by 1 percent. Importantly, the effect size of the unemployment rate for the state house elections is more than double that of the state senate elections. Note that our regression models control for the difference in the sizes of the legislature by including the number of contested seats. Thus, the different effects of the business cycle on the number of candidates are not likely to reflect the difference in the size of the legislature. We suspect that the effect is larger on the state house elections than on the senate elections because the probability of winning is slightly larger in the former than the latter. The numbers of contested and open seats are estimated to have a positive influence on the number of third-party and independent candidates for the state senate elections, but their coefficients are not significant, even at the 0.10 level.

Column (3) of Table 3 shows that the percent unemployed is estimated to have a positive coefficient for the gubernatorial elections, but its size is much smaller than the coefficients from the state house and senate elections. More importantly, the coefficient is not distinguishable from zero. Thus, we conclude that the business cycle has no influence on the number of gubernatorial candidates.

In summary, our regression analysis reveals that the unemployment rate affects the number of third-party and independent candidates for the state house and senate elections, but has no effect on the number of minor-party gubernatorial candidates. In addition, the effect is larger in state house elections than in senate elections.

3 Discussion

In this section, we interpret our findings in terms of (1). Specifically, we consider the possibility that the change in the state unemployment rate has an influence on the values of D, C, and p, rather than B, resulting in the larger number of third-party and independent candidates for the state house and senate elections. If this is true, mechanisms other than ours are likely to account for the observed relationship. In addition, we challenge the fundamental problem of the decision calculus by extending the prospect theory from behavioral economics. In other words, we examine why third-party and independent candidates run despite their marginal probability of winning. Ultimately, we offer a new perspective that explains why weak candidates emerge in the context of the decision calculus.

3.1 Non-electoral Purposes and the Cost of Running

One of the conventional explanations for weak candidates entering an election is that they have non-electoral motivations (Riker and Ordeshook, 1968; Kazee, 1980; Maisel, 1982). In other words, D is large enough so that the left-hand side of (1) becomes non-negative. Even if a candidate has no chance of winning, this candidate may find some benefits from running because they can express their opinions to the public and attract more attention. With this interpretation, D may increase during a recession because people tend to be dissatisfied with the economic policy of incumbent politicians. Thus, they are motivated to run to show their dissatisfaction. However, this story fails to explain why the unemployment rate has no influence on the number of third-party and independent candidates in the gubernatorial elections. The larger value of D resulting from a recession should equally affect state legislative and gubernatorial elections, particularly because running for a gubernatorial election is more likely to attract public attention than it would in a state legislative election. In short, the null-effect of the unemployment rate on the number of gubernatorial candidates allows us to reject the possibility that a

change in D accounts for our findings.[6]

Similarly, our findings indicate that the cost of running is unlikely to account for the observed relationship. It is plausible that the opportunity cost of running decreases during a recession, because recessions tend to encourage people to retire from their jobs, or increase the amount of spare time they have to work on a campaign.[7] Nevertheless, for the same reasons discussed previously, the opportunity cost cannot explain the variation in our empirical findings across the three types of elections. If recessions decrease the opportunity cost, and this is the only explanation, the number of third-party and independent candidates for gubernatorial elections should increase.

3.2 The Probability of Winning

Next, we consider the possibility that the business cycle affects the probability of winning, p. When voters experience an economic crisis, they may show their frustration by choosing a non-major party candidate. Alternatively, major-party candidates have more difficulty raising campaign funds during a recession, which affects the entry decisions and campaign activities of third-party and independent candidates and major-party challengers (Box-steffensmeier, 1996).

We empirically examine the relationship between the business cycle and the probability of winning by extending (2). Specifically, we replace the outcome variable in (2) with the number of third-party and independent candidates who won a contest in each type of election. The right-hand side of (2) includes the number of third-party and independent candidates, as well as all of the control variables used previously. Table 4 reveals that there is no relationship between the state unemployment rate and the number of third-party winners. Thus, it is unlikely that a recession increases the number of third-party candidates because of an increased probability of winning.[8]

[Table 4 Here]

3.3   Benefits of Holding a Political Office

Drawing on the above arguments, we contend that the business cycle changes the size of B in (1), which in turn affects the entry decision of third-party candidates. We argue that the recession increases the size of B for two reasons. First, economic downturns increase the attractiveness of holding a political office relative to staying in the private sector because the average level of wages in the private sector tends to decrease during the recession, while legislative salaries and extra payoffs from political jobs remain about the same. Even when legislative salaries are low relative to the private sector, amateur politicians may expect that legislative careers enable them to gain positive reputations that help to maximize their future earning. Second, economic downturns motivate amateur politicians who are dissatisfied with the incumbent government to pursue political power that gives them an opportunity to revise an economic policy. In other words, they seek to influence the policy decisions that affect the state economic circumstances and ultimately their own economic prospects.

In both cases, the difference in the benefits of winning a seat and not holding a political office increases during a recession. To elaborate on this point, we rewrite (1) as

$$pB_W + (1-p)B_N - C + D \quad \geq \quad B_N \Rightarrow$$

$$p(B_W - B_N) - C + D \quad \geq \quad 0 \tag{3}$$

where B_W is the benefit from winning a seat, while B_N is the benefit from not holding an office as a result of an electoral loss or not running. During a recession, B_N decreases because the level of wages in the private sector decreases, while B_W increases because potential candidates seek for legislative wages and professional reputation as well as a new economic policy that changes the status quo implemented by the incumbent government . Accordingly, $B_W - B_N$ increases, resulting in the larger number of third-party and independent candidates.

Importantly, $B_W - B_N$ helps us explain why the number of third-party candidates for gubernatorial elections shows no change during a recession. Table 2 reports that the number of third-party winners of the gubernatorial elections is much smaller than the number of third-party winners of the state house and senate elections. That is, the probability of winning is almost zero in the gubernatorial elections, which means that the change in $B_W - B_N$ has no substantive influence on the entry decision of third-party candidates. On the other hand, the probability of winning in the state legislative elections is still low but the value is non-zero. Therefore, the change of $B_W - B_N$ could affect the entry decision of third-party candidates in the state legislative elections.

Admittedly, p is still quite low in the state legislative elections. Thus, $B_W - B_N$ has to increase dramatically during an economic downturn to satisfy (3). To elaborate on this point, we use a simple numerical example. Suppose that only $B_W - B_N$ is a random variable that is uniformly distributed on the range of one.[9] The values of $B_W - B_N$ change, depending on the state business cycle. Prior to the election, potential candidates can observe $B_W - B_N$. To simplify our discussion, we assume that all other variables in (3) are fixed. Note that the results discussed below hold even if this assumption is relaxed.[10]

We denote N as the number of potential third-party candidates. Then, the expected number of third-party candidates, N_R, is

$$
\begin{aligned}
N_R &\equiv \Pr(p(B_W - B_N) - C + D \geq 0)N \\
&= \Pr(B_W - B_N \geq (C - D)/p)N.
\end{aligned}
$$

As an example, suppose $C - D = 0.3$, and $B_W - B_N$ is uniformly distributed on $[0, 1]$. In addition, set $N = 5$, because there can be at most four third-party candidates in a single district for the state legislative elections during the period of our data. These values have no substantive meaning, but they are chosen so that the following conditions are satisfied. First, if a candidate will definitely win (i.e., $p = 1$,) with a

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net cost of running of zero (i.e., $C - D = 0$), then all potential candidates run regardless of the realized value of B_N. Second, if a candidate has a probability of winning of 50% (i.e., $p = 0.50$), the expected number of candidates is $N_R = 2$. Even with other numerical examples, as long as satisfy these two conditions, the results discussed below generally hold.

Suppose that $p = 0.05$, which is equal to the highest ratio of third-party winners in a single election-year in our data. Since $B_W - B_N$ is uniformly distributed on $[0, 1]$, $\Pr(B_W - B_N \geq 0.3/0.05) = \Pr(B_W - B_N \geq 6) = 0$. Thus, the expected number of candidates is zero ($N_R = 0$). If $\Pr(B_W - B_N \geq 6) = 0.20$, the expected number of candidates increases from zero to one ($N_R = 5 \times 0.2 = 1$). For this increase to occur, $B_W - B_N$ should be uniformly distributed on $[5.2, 6.2]$ during a recession. This means that the distribution of $B_W - B_N$ should increase significantly to be consistent with our findings.

In (3), $B_W - B_N$ is multiplied by the probability of winning p. Since p is quite small for third-party and independent candidates, $B_W - B_N$ must increase considerably during a recession before more third-party and independent candidates decide to run. This implies that the fundamental puzzle still remains to be solved: how can we account for the increase in the entry of third-party candidates during a recession when they have so little chance of winning?

3.4   Prospect Theory

To address this puzzle, we employ the prospect theory from behavioral economics (Kahneman and Tversky, 1979; Tversky and Kahneman 1992). The prospect theory differs from the standard rational choice model in the understanding of how people view a probability (known as the decision weight function) and how people evaluate a risk (known as the value function). The decision weight function rests on the idea that individuals have a subjective attitude about probabilities. If p is the objective probability, people use $f(p)$ instead of p to make a choice. A number of experimental studies have shown that people tend to place too much weight on low probabilities (i.e., $f(p) > p$), but tend to place

too little weight on high probabilities (i.e., $f(p) < p$). The value function suggests that people's attitude to risk depends on expected gains or losses. In other words, they tend to be risk-averse for gains and risk-loving for losses. In this study we focus on the role of the decision weight function to explain the entry decision of third-party and independent candidates.

Using the decision weight function, we rewrite (3) as

$$f(p)B_W + f(1-p)B_N - C + D \geq B_N.$$

Numerous studies have sought to identify the exact functional form of the decision weight function (see, for example, Gonzalez and Wu, 1999). Most recently, Bruhin, Fehr-Duda, and Epper (2010) designed a series of careful experiments in an effort to find the functional form. Their experiments suggest that people tend to increase the weight on an objective probability of 5% to about 20%, and decrease the weight of an objective probability of 95% to about 80%.[11]

Since the above equation includes B_W and B_N separately, simply consider that $B_W = 2$ and B_N is uniformly distributed on the range of one.[12] According to the previous numerical example, if potential third-party and independent candidates weight their probability of winning as $f(0.05) = 0.20$ and weight their probability of losing like as $f(0.95) = 0.80$, the expected number of third-party and independent candidates increases from zero to one when B_N is uniformly distributed on $[0.48, 0.58]$ during a recession. i.e. $B_W - B_N$ is uniformly distributed on $[1.42, 1.52]$. This means that if potential candidates place too much weight on their probability of winning, $B_W - B_N$ does not necessarily increase dramatically during a recession. This possibility is consistent with past studies (Kazee, 1980; Maisel, 1982) that suggest that weak candidates running for hopeless congressional races tend to overestimate the probability of winning.[13] We do not consider the value function here, but potential candidates tend to be risk-loving in a recession because people are more likely to incur economic losses as the econ-

omy slows down. If candidates become risk-loving in recessions, the new distribution of $B_W - B_N$ can become lower than $[1.42, 1.52]$.

In short, economic downturns could encourage third-party candidates to run for state legislative elections, because their reservation wage decreases, and they have a larger incentive to change a policy during a recession and they overestimate their probability of winning (and they become risk-loving as the economy shrinks).

4 Conclusion

This study reveals that an important criterion for potential election candidates when deciding whether to enter an election is the economic benefit of holding an office. We focus on the entry of third-party and independent candidates to state-level elections, suggesting that they are more likely to run when the state's economy shrinks, which makes holding a political office more attractive relative to staying in the private sector. Using state unemployment as a measure of the business cycle, we found that the number of third-party and independent candidates increases by 1.6 in state house elections and 0.6 in state senate elections as the state's unemployment rate increases by 1 percent. Our analysis also reveals that the state unemployment rate has no influence on the number of third-party and independent candidates that enter gubernatorial elections.

We carefully interpreted our findings, and concluded that our findings are explained by the change in the benefit of holding a political office, rather than by the cost of running, private consumption, or the probability of winning. However, that is not to say that the other elements in the decision calculus are unimportant. They must explain the likelihood of candidate entries, but they are not likely to account for the mechanism underlying the relationship between the business cycle and the number of third-party and independent candidates.

Our argument can be extended to the number of major-party candidate entries in state-level and federal-level elections. More specifically, the entry decision of weak major-party candidates (Banks and Kiewiet, 1989; Canon, 1993) may be sensitive to the economic circumstances. Banks and Kiewiet (1989) argue that weak challengers in congressional elections run against an incumbent in order to maximize their probability of winning by avoiding to contest a strong candidate from the same party in the primary election. This may be more likely to occur if the relative attractiveness of political jobs increases. Future research can test this possibility by using the data of primary and general elections for congressional seats.

Future research should also examine empirically how third-party and independent candidates evaluate their probability of winning. By extending the prospect theory, we assume that they are likely to overestimate their probability of winning, yet this should be verified by an experimental or other rigorous approach.

Notes

[1] This information was obtained from State Legislative Election Returns Data, 2011-2012, complied by Klamer et al. (2013).

[2] The data are available from the ICPSR data archive.

[3] We excluded write-in candidates when counting the number of candidates for state house, state senate, and gubernatorial elections.

[4] The web site address is http://www.ncsl.org/Default.aspx?TabId=14844.

[5] The results of the supplementary analyses are available upon request.

[6] Some studies derive D endogenously. For example, candidates with the marginal probability of winning decide to run in order to decrease the probability that an undesirable candidate wins (Osborne and Slivinski, 1996) or to change the policy position of the opponent (Asako, 2013). However, these hypotheses do not explain why a recession should increase the number of third-party and independent candidates.

[7] Aguiar, Hurst and Karabarbounis (2013) found that people engage in civic and political activities more frequently during recessions.

[8] It is possible that potential candidates misperceive that p increases during a recession. That is, their perceived probability of winning increases, even though their actual probability of winning does not change. This possibility does not affect our conclusion because it is still the case that more third-party candidates run during a recession because they seek to win an election.

[9] The results hold even if we use other distribution functions.

[10] In addition, these variables do not change considerably during the recession, as discussed previously.

[11] More specifically, Bruhin, Fehr-Duda, and Epper (2010) used the following common formula to describe the

decision weight function:

$$f(p) = \frac{\delta p^\gamma}{\delta p^\gamma + (1-p)\gamma}.$$

Based on their careful experiments, they estimated that the majority of people have $\delta = 1.063$ and $\gamma = 0.451$ for gains ($f(0.05) = 0.22$, $f(0.95) = 0.80$), and $\delta = 0.878$ and $\gamma = 0.444$ for losses ($f(0.05) = 0.19$, $f(0.95) = 0.76$). They also showed that the majority of people are almost risk-neutral. Thus, we do not have to consider the role of the value function here.

[12]The results do not change so much even if B_W becomes also a random variable.

[13]It is also known that voters also tend to overestimate the level of election competitiveness (Bowler and Donovan, 2011; McDonald and Tolbert, 2012).

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Table 1: The Mean Number of Third-Party and Independent Candidates by State

	House	Senate	Governor
Alabama	6.56	1.78	0.89
Alaska	9.78	3.17	3.11
Arizona	10.61	6.94	1.44
Arkansas	4.56	1.11	0.36
California	46.39	13.22	3.00
Colorado	11.22	2.50	1.78
Connecticut	23.06	7.06	1.33
Delaware	6.28	2.06	0.75
Florida	9.61	1.00	0.78
Georgia	2.11	0.28	0.78
Hawaii	3.28	1.00	1.67
Idaho	8.11	5.00	1.11
Illinois	6.28	1.28	1.56
Indiana	12.11	2.83	1.25
Iowa	5.94	1.94	2.22
Kansas	10.22	3.44	1.89
Kentucky	2.33	0.50	0.25
Maine	14.33	3.89	2.00
Maryland	5.00	0.89	0.67
Massachusetts	23.50	3.44	1.44
Michigan	29.72	11.22	1.78
Minnesota	13.17	9.55	3.89
Mississippi	15.11	7.22	1.25
Missouri	15.00	2.61	1.00
Montana	8.61	1.50	0.63
Nevada	14.72	5.06	2.11
New Hampshire	19.72	2.33	0.94
New Jersey	32.06	14.00	3.22
New Mexico	2.78	1.80	0.22
New York	75.11	34.61	4.33
North Carolina	10.22	5.11	1.38
North Dakota	1.50	1.72	0.75
Ohio	12.94	2.44	1.78
Oklahoma	2.89	0.50	1.11
Oregon	11.50	2.28	1.67
Pennsylvania	19.22	2.61	1.44
Rhode Island	11.61	7.24	1.00
South Carolina	7.94	2.78	0.89
South Dakota	3.89	1.72	0.78
Tennessee	11.61	2.39	3.67
Texas	26.50	6.00	2.11
Utah	30.50	6.33	2.33
Vermont	25.00	9.23	3.65
Virginia	16.11	6.33	0.56
Washington	10.89	1.83	0.75
West Virginia	2.61	0.67	1.13
Wisconsin	12.50	1.67	2.56
Wyoming	3.33	0.67	0.44

Note: Table entries are the mean number of third-party and independent candidates in the state house and senate elections and gubernatorial elections. Data are based on 48 U.S. states between 1980 and 2010.

Table 2: Summary Statistics

	Mean	SD	Min	Max
State house (N=736)				
N of minor-party candidates	14.305	17.504	0.000	123.000
Percent unemployed	5.961	2.098	2.300	15.600
Number of contested seats	110.284	57.289	40.000	400.000
Number of open seats	21.637	14.082	1.000	93.000
N of minor-party winners	0.239	0.851	0.000	12.000
Election closeness	0.597	0.131	0.177	0.891
Term limit adopted	0.105	0.306	0.000	1.000
Legislative professionalism	0.200	0.127	0.020	0.682
Log personal income per capita	9.616	0.198	9.060	10.172
Log population size	15.011	1.039	12.912	17.433
Percent 65 years over	12.379	2.125	2.898	18.550
Percent white population	79.603	13.931	24.744	98.493
State senate (N=682)				
N of minor-party candidates	4.401	7.116	0.000	56.000
Percent unemployed	5.947	2.091	2.300	15.600
Number of contested seats	28.267	13.823	10.000	67.000
Number of open seats	7.126	4.326	0.000	33.000
N of minor-party winners	0.047	0.303	0.000	6.000
Election closeness	0.620	0.137	0.097	0.909
Term limit adopted	0.104	0.306	0.000	1.000
Legislative professionalism	0.200	0.127	0.020	0.682
Governor (N=396)				
N of minor-party candidates	1.625	1.726	0.000	14.000
Percent unemployed	6.054	2.254	2.400	15.600
Open seat	0.250	0.434	0.000	1.000
N of minor-party winners	0.015	0.122	0.000	1.000
Election closeness	0.838	0.134	0.360	1.000
Term limit adopted	0.626	0.484	0.000	1.000

Note: Data are based on 48 U.S. states between 1980 and 2010.

Table 3: Recession and the Count of Third-Party and Independent Candidates

	(1) House	(2) Senate	(3) Governor
Percent unemployed	1.613**	0.630**	0.166
	(0.578)	(0.258)	(0.120)
Number of contested seats	0.130*	0.114	
	(0.074)	(0.077)	
Number of open seats	0.151*	0.062	0.023
	(0.090)	(0.072)	(0.201)
Election closeness	1.558	−1.178	−0.355
	(7.063)	(1.791)	(0.674)
Term limit adopted	5.387	0.705	−0.875
	(4.481)	(0.861)	(0.700)
Legislative professionalism	16.947	−13.200	
	(23.206)	(11.760)	
Log personal income per capita	21.859	6.104	−2.855
	(15.036)	(5.019)	(2.481)
Log population size	31.925	14.421	1.904
	(32.419)	(10.862)	(4.706)
Percent 65 years over	−2.678	−0.651	0.211
	(2.711)	(0.947)	(0.345)
Percent white population	−0.132	−0.033	0.013
	(0.184)	(0.088)	(0.029)
Constant	−664.155	−262.881	−4.075
	(513.802)	(189.803)	(78.144)
R^2	0.744	0.795	0.694
N	736	682	396

Note: Table entries are fixed effects regression estimates, with standard errors in parentheses. Standard errors are clustered by state. Estimates are based on data from 48 states between 1980 and 2010. The dependent variable is the total count of third-party and independent candidates in the election. State and year fixed effects, and state-specific linear time trends are included in the models. $**\ p < .05$, $*\ p < .10$ (two-tailed tests).

Table 4: Recession and the Count of Third-Party and Independent Winners

	(1) House	(2) Senate	(3) Governor
Percent unemployed	−0.008	0.009	0.002
	(0.019)	(0.009)	(0.012)
Number of third-party candidates	0.018	0.013	0.010
	(0.015)	(0.010)	(0.009)
Number of contested seats	0.011	0.003	
	(0.007)	(0.005)	
Number of open seats	−0.009*	−0.003	0.013
	(0.005)	(0.004)	(0.016)
Election closeness	0.804	0.122	0.040
	(0.527)	(0.137)	(0.096)
Term limit adopted	0.085	0.024	−0.058
	(0.123)	(0.094)	(0.054)
Legislative professionalism	−0.432	0.326	
	(0.913)	(0.663)	
Log personal income per capita	−0.643	−0.407	0.001
	(0.862)	(0.334)	(0.372)
Log population size	−0.946	−0.071	−0.365
	(1.594)	(0.701)	(0.595)
Percent 65 years over	−0.145	−0.115	−0.089
	(0.132)	(0.078)	(0.061)
Percent white population	−0.003	−0.004	−0.000
	(0.007)	(0.004)	(0.002)
R^2	0.561	0.234	0.276
N	736	682	396

Note: Table entries are fixed effects regression estimates, with standard errors in parentheses. Standard errors are clustered by state. Estimates are based on data from 48 states between 1980 and 2010. The dependent variable is the total count of third-party and independent winners in the election. State and year fixed effects, and state-specific linear time trends are included in the models. $**$ $p < .05$, $*$ $p < .10$ (two-tailed tests).