

# The Behavioral Foundations of the Midterm Effect

John W. Patty\*  
Harvard University

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## Abstract

This paper provides a theory of political behavior based on loss aversion and apply it to electoral participation in midterm congressional elections. The theory incorporates both the turnout and vote decisions in one framework and predicts that the president's party will be disadvantaged in midterm elections (*i.e.*, the theory predicts the "midterm effect"). Furthermore, this effect is driven by the asymmetric effect of ideology on voters' turnout decisions rather than as a result of vote choices made in the voting booth. The loss averse theory is contrasted with existing explanations for the midterm effect and then tested empirically with both aggregate and individual-level data. Both levels of empirical analysis offer support for the loss averse behavioral explanation.

*Keywords: Voting, participation, midterm congressional elections, loss aversion.*

## 1 Introduction

The midterm effect is one of the most striking empirical regularities in American politics. Put succinctly, the president's party has performed poorly in midterm congressional elections since 1870. The causes of this regularity have been the subject of debate since 1948, when it was

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\*Assistant Professor of Government, Department of Government and Institute for Quantitative Social Science, Harvard University. Bill Keech offered many thoughtful comments on several previous drafts of the paper as well as providing valuable advice throughout the project. In addition, Fred Boehmke, Jeff Dominitz, Jeff Milyo, David Primo, Melvin Stephens, and Peter Thompson each contributed to the development of the paper and the analysis contained herein. The comments of audiences at Carnegie Mellon University, the 2003 Annual Meetings of the American Political Science Association, the 2004 Annual Meetings of the Midwest Political Science Association, and the 2004 Wallis Institute Conference on Political Economy are also gratefully acknowledged. This paper utilizes data made available by the Inter-University Consortium for Political and Social Research (ICPSR). As always, any errors of omission or commission are solely attributable to the author.

first noticed by Louis Bean [1948]. In reality, however, there are at least four possible versions of the midterm effect. The midterm effect might be phrased in terms of either the total number of votes or the number of House seats won by the president's party compared to the opposition party. Similarly, the performance under either measure might be in absolute terms (*i.e.*, the president's party receives strictly less votes (seats) than the opposition party in midterm House elections) or relative to the outcome in the previous presidential election (*i.e.*, the margin of victory in votes (seats) for the president's party declines in midterm House elections). The four versions are explicitly defined below.

1. **The absolute vote midterm effect.** Summing across all congressional districts, the president's party receives fewer votes in midterm U.S. congressional elections than the opposition party.
2. **The relative vote midterm effect.** Summing across all congressional districts, the number of votes received by the president's party's candidates, minus the votes received by the opposition party's candidates, is smaller in the midterm election than in the preceding presidential election year.
3. **The absolute seat midterm effect.** The president's party wins fewer congressional districts than the opposition party in midterm elections.
4. **The relative seat midterm effect.** The president's party wins fewer seats in the midterm election than it did in the preceding presidential election year.

To further complicate matters, the president's party's performance in terms of absolute votes might be compared without adjustment or relative to the party's share of the two-party *normal vote* (Converse [1966]). The normal vote first favored the Republican Party following the Civil War and then moved in favor of the Democratic Party following the "New Deal

elections” of 1932 and 1934. Much of the existing literature has focused on versions 2 and 4, whereas this paper is concerned primarily with version 1, the absolute vote midterm effect.<sup>1</sup>

These versions of the effect are not nested in any particular way. First, the votes cast across all House races in a given election year do not map cleanly into the number of House seats received by the two parties. As Erikson [1988] and other scholars have noted, the swing ratio has changed through US history. Secondly, while the fact that the party that wins the Presidency also typically does well in House elections in presidential election years is a robust empirical regularity, it is clearly not a logical necessity.

**The Regularity of the Midterm Effect in Terms of Votes.** In terms of the number of votes received by the president’s party, the midterm effect has two versions. The relative version of the effect is displayed graphically in Figure 1.<sup>2</sup>

[Insert Figure 1 about here.]

Figure 1 clearly shows that the opposition party has nearly always won a larger share of votes in midterm House elections than it did in the House races during the preceding presidential election year. This data potentially tells only half of a story, however. As other scholars have noted, the historical pattern of relative votes is consistent with several underlying phenomena, including a surge for successful presidential candidates that might result simply from random turnout of partisan voters who vote straight tickets once in the voting booth. Such a process, however, would not predict the “absolute votes” version of the midterm effect (version 1, above). The data for this version of the effect can be expressed in two ways, given the fact that the long-run partisanship of the US has rarely been equally split between the two major parties. Thus, I express the data both in absolute, unadjusted terms and as adjusted for

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<sup>1</sup>I am unaware of scholars who have explicitly used version 3.

<sup>2</sup>The data for Figure 1 is drawn from Rusk [2001]. The president’s party’s vote share, is computed as 0.5 subtracted from the share of the two-party national congressional vote, divided by 2. The computation of the change in vote share was done so that the same party is compared across each pair of elections (*i.e.*, changes in the party that controlled of the Presidency were taken into account).

the long-run advantage enjoyed by the favored party at the time, which was 2.25 percentage points for the Republican party prior to the election of 1932 and 2.25 percentage points for the Democrats from the election of 1932 onward.<sup>3</sup> Figure 2 displays the data for the unadjusted absolute votes version of the midterm effect. Figure 3 displays the data for an absolute votes version after adjusting for the long-run favored party.

[Insert Figures 2 and 3 about here.]

Visual inspection of this normalized data supports the contention that an absolute votes version of the midterm effect has characterized many US House elections since the Civil War. The president's party performed worse than their era-specific (pre- or post-New Deal) long-run performance in 25 out of 33 midterm elections since 1868. While, as far as I am aware, this fact has not been noted previously, it is in keeping with the "presidential penalty" as described by Erikson [1988]. One of the most important features of the theory presented in this paper is its prediction of this absolute votes version of the midterm effect. Before proceeding to the discussion of the theory, however, I briefly describe the seats versions of the midterm effect.

**The Regularity of the Midterm Effect in Terms of Seats.** The president's party has historically lost seats in the House of Representatives in all but 4 midterm elections since the civil war.<sup>4</sup> Obviously, this is a relative effect, as it compares the number of seats won in the preceding presidential election year to the number won in the midterm election year. There is no support for an absolute midterm effect in terms of seats. This is not surprising, given incumbents' advantages in seeking reelection and the generally high proportion of incumbents who choose to seek it.

While the number of seats controlled by the two major parties is the most logical predictor

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<sup>3</sup>This is not a typo. My estimates of the long-run advantage of the Republicans in what James Campbell [1991] refers to as the "GOP Era" and the long-run advantage of the Democrats both equal 2.25 percentage points. The calculation of this advantage is detailed in Section 3.1.

<sup>4</sup>The exceptional elections are 1934, 1962, 1998, and 2002. In 1962 and 1998, the president's party did not gain or lose any seats, while in 1934 and 2002 the president's party gained seats.

of congress's choice of policy through history, it is not necessarily the best indicator of the midterm effect insofar as the effect may offer clues about voter decision making. First, examining the number of seats may exacerbate estimation problems arising from strategic candidacy in House elections. Second, it is easier to control for the effect of the incumbents' advantage if the additional information of votes received is included in the analysis. For these reasons, while the "relative seats" version of the midterm effect is interesting and important, I choose to focus on the "absolute votes" version in this paper.

While all studies of the midterm effect note the change in relative seat distribution (i.e., version 4, above), only some of these studies have considered the aggregate vote for the two major parties (i.e., versions 1 or 2, above).<sup>5</sup>

## 2 Theory

The main premise of this paper's theory is that individual behavior is driven by *loss aversion*. The theory of behavior offered here, while purposive in the sense that individuals make their decisions in pursuit of individual (though not necessarily self-interested) goals, the incentive to pursue a given choice of action depends upon the individual's perception of his or her own relative well-being. According to the principle of loss aversion, the motivation to take an action is heightened when that individual believes that not taking the action will result in an outcome below his or her *reference level*. In other words, decisions are assumed to be made with a threshold level of well-being in mind – the individual's motivation to improve his or her well-being is elevated when he or she expects to otherwise end up below this threshold. This asymmetry can be captured by the simple statement that people work harder to avoid losses than they do to secure gains.

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<sup>5</sup>Recently, Patty [2005] has studied the aggregate votes version of the midterm effect within a framework similar to the one used here.

The theory is presented in two parts: the first part describes the individual-level theory of decision-making. The second part then imports this theory into a model of elections. Later in the paper, the first part of the theory will be subjected to empirical tests using individual-level survey data, while the second part of the theory will be tested with aggregate level election data. For reasons of presentation and space, the theory’s predictions are presented informally in this paper.

## 2.1 Reference-Level Dependent Choice

This section presents a theory of individual choice that allows for choices to depend upon a “reference level” of *utility*. Whether the utility of an action falls above or below this reference level determines how the utility is mapped into the *payoff* from choosing that action.<sup>6</sup> The model of politics is stylized, with the set of possible platforms or policies assumed to be the left-right ideological dimension. This set is denoted by  $X = \mathbf{R}$ . Each voter  $i$  is characterized by an *ideal policy*,  $p_i \in X$ , and a *reference level* political outcome,  $r_i \in X$ , both of which are discussed below.

**Policy Preferences.** I assume that the voter’s policy preferences are given by a utility function,  $u(x, p)$ , which is continuously, strictly quasi-concave, and maximized by  $x = p$ . Voter  $i$  with ideal policy  $p$  is said to prefer outcome  $x \in X$  to outcome  $y \in X$  if  $u(x, p) \geq u(y, p)$ . These preferences, as discussed above, represent the *ex post* well-being of the voter following the implementation of public policy.

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<sup>6</sup>I distinguish between *utility* and *payoff* in this framework. In words, the utility from an action is a numerical representation of the preference a decision-maker has for the outcome associated with that action having been chosen. Utility is explicitly *ex post* (*i.e.*, experienced after the fact) in this framework. On the other hand, the payoff from an action is a numerical representation of the individual motivation to choose that action. In this sense, payoff is an *ex ante* notion. The theory in this paper assumes that individuals seek to maximize their payoff, which is often different than their utility.

**The Reference Level.** Put succinctly, a voter’s reference level represents his or her perception of what constitutes acceptable public policy.<sup>7</sup> Policies that the voter prefers to this outcome are said to represent policy *gains* to the voter, whereas policies that are less preferred by the voter are said to represent policy *losses*. Thus, the subjective payoff received by a voter from voting for a policy  $x$  depends upon how that policy compares to the voter’s reference level.

**The Voting Model.** Given a reference-level  $r_i$ , the payoff from voting for a policy outcome  $x$  is denoted by  $v(u(x, p), u(r_i))$ . The function  $v : \mathbf{R}^2 \rightarrow \mathbf{R}$  is assumed to be a continuous function that is twice continuously differentiable in both of its arguments except possibly at  $u(x) = u(r_i)$ . Furthermore,  $v$  is also assumed to satisfy the following conditions:

1. **Normalized.** Without loss of generality,  $v(z, z) = 0$  for all  $z \in \mathbf{R}$ .
2. **Monotonicity.** The payoff of voting for a policy outcome is an increasing function of the utility received from that outcome. Formally, for all  $z \in \mathbf{R}$ ,  $\frac{\partial v(k, z)}{\partial k} > 0$  for all  $k \neq z$ .
3. **Loss Aversion.** Policy gains are less valuable than similarly-sized policy losses. Formally, for all  $z \in \mathbf{R}$  and  $\delta > 0$ ,  $v(z + \delta, z) < v(z - \delta, z)$ .
4. **Diminishing Effect of Losses and Gains.** The marginal effect of increasing gains and the marginal effect of increasing losses are both decreasing functions. Formally, for all  $z \in \mathbf{R}$ ,  $\frac{\partial^2 v(k, z)}{\partial k^2} < 0$  for  $k > z$  and  $\frac{\partial^2 v(k, z)}{\partial k^2} > 0$  for  $k < z$ .

This payoff function is consistent with the characteristics of the “S-shaped” payoff function formalized in *prospect theory* by Kahneman and Tversky [1979].<sup>8</sup> In addition, it shares similarities (especially with regard to predicted behavior) to the theory of *satisficing*, as developed by Simon [1957]. The mapping of utility into payoffs is pictured in Figure 4. The payoff

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<sup>7</sup>The origins of this reference-level are left unmodeled and each voter’s reference level is treated as exogenous and fixed in this paper. The question of where such thresholds come from is interesting but lies outside of the scope of the current project.

<sup>8</sup>For an important (and, as far as I am aware, the seminal) application of prospect theory to political science, see Quattrone and Tversky [1988].

$v(u(x, p_i), r_i)$  is the subjective reward received by voter  $i$  from casting a ballot that would result in a policy outcome of  $x$ . Voter  $i$ 's cost of voting is denoted by  $c_i$ .<sup>9</sup> In the theory, voters are assumed to ignore the behavior of other voters. They are assumed to believe (irrationally) that abstention will result in the least preferred feasible public policy being implemented following the election. Accordingly, I assume that voters are behaving in a very conservative fashion – in game theory terms, they are “maxminners” with respect to the choice to turnout or abstain, basing their behavior on a belief that the worst will occur if they abstain. Even with such beliefs, voter  $i$  will still abstain if the cost of voting,  $c_i$ , is large enough.

The theory assumes that voters are naive and sincere: in other words, voter  $i$ 's subjective payoff of voting from for policy outcome  $x$  is equal to

$$w(x, p_i, r_i, c_i) = v(u(x, p_i), r_i) - c_i,$$

while, denoting the set of feasible public policy outcomes by  $Y$ , the subjective payoff from abstaining is assumed to be equal to

$$w(0, p_i, r_i, c_i) = v(\min_{y \in Y} [u(y, p_i)], r_i).$$

Note that the set of feasible public policy outcomes will depend not only on the policy platforms of the political parties, but also whether the election is a presidential election or a midterm. This is a key step in derivation of the theory's explanation of the midterm effect.

**The Turnout Decision.** The difference between the subjective payoff of voting for  $x$  and the subjective payoff from abstaining is

$$w(x, p_i, r_i, c_i) - w(0, p_i, r_i, c_i) = v(u(x, p_i), r_i) - c_i - v(\min_{y \in Y} [u(y, p_i)], r_i).$$

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<sup>9</sup>This cost might be negative, representing a nonpolicy-based benefit from voting.

The theory predicts that voter  $i$  will vote only if there is an a policy  $x \in Y$  such that

$$W(Y, p_i, r_i, c_i) = \max_{x \in Y} [w(x, p_i, r_i, c_i)] - w(0, p_i, r_i, c_i) \geq 0.$$

In other words, voters are assumed to be purposive subjective payoff maximizers who turnout to vote if the subjective reward from casting a ballot exceeds the perceived payoff from abstaining by enough to compensate the voter for the individual cost of voting.

**Discussion of the Model of Voting.** Voting is construed here as an expressive act (e.g., see Schuessler [2000]). As stated by Aldrich [1993], voting is “a low cost, low (expected) benefit decision.” This conception of voting has a number of advantages. First, it is more plausible a model of behavior in elections involving electorates as large as are observed in Federal elections in the United States. Second, less restrictive assumptions about unobservables are necessary for the theory to be consistent with the relatively high absolute level of turnout observed in most Federal elections. Finally, it is simply implausible to expect that any voter can satisfy the computational and informational demands required for a complete calculation of one’s vector of pivot probabilities (i.e., the different likelihoods that each potential ballot will affect the policy implemented by the government).

[Figure 4 Here.]

## 2.2 Electoral Competition and Turnout

The model of government is stylized: a unicameral legislature and an executive are jointly responsible for determining public policy. There are two parties, the Republicans (denoted by  $r$ ) and the Democrats (denoted by  $d$ ). There are four possible policy outcomes,  $x_d$ ,  $x_r$ ,  $x_{dr}$ , and  $x_{rd}$ . The first two policy outcomes,  $x_d$  and  $x_r$ , represent the policy outcomes resulting from unified control of the Congress by the Democratic and Republican parties, respectively. The third

and fourth policy outcomes,  $x_{dr}$  and  $x_{rd}$ , represent the policy outcomes resulting from divided control:  $x_{dr}$  represents the policy resulting when a Democrat controls the Presidency and the Republicans control Congress, while  $x_{rd}$  represents the policy resulting from Republican control of the Presidency and Democratic control of Congress. I assume that  $x_d < x_{dr} \leq x_{rd} < x_r$ . Voter  $i$ 's ideal policy outcome is denoted by  $x_i^*$ . For expositional purposes, I suppose that  $x_i^* \in \{x_d, x_m, x_r\}$ , where  $x_d < x_m < x_r$ , and refer to the voters whose ideal policy is  $x_m$  as moderates and all other voters as partisans. The utility and payoff functions for both types of partisans are pictured in in Figure 5, while the case of the moderate type of voter is pictured in Figure 6.

[Figures 5 and 6 Here.]

**Presidential Elections.** In a presidential election year, all four of the policy outcomes are possible. Thus, voters on both sides of the political spectrum behave in symmetric fashions. A liberal voter receives the same payoff from turning out and voting a straight Democratic ticket as a conservative voter receives for turning out and voting a straight Republican one. The payoff that a moderate voter receives from turning out in presidential election year depends upon the votes that he or she casts. In line with Alesina and Rosenthal [1989], a moderate voter will have a preference for divided government. Accordingly, a moderate voter who turns out will cast a split ticket, voting for one party's candidate in the presidential election and the other party in the congressional race.

The predicted outcome of the presidential election then depends upon how many voters belong to each of the two parties.

**Midterm Elections.** In midterm elections, there are only two possible policy outcomes. For example, supposing that the Republican party controls the Presidency, the two policy outcomes that can result from a midterm election are  $x_{rr}$  and  $x_{rd}$ . According to the theory presented

in this paper, the president's party is disadvantaged in midterm elections because these two outcomes are viewed asymmetrically by left- and right-wing voters. To a conservative voter, both of the outcomes  $x_{rr}$  and  $x_{rd}$  represent gains relative to his or her reference level. To a liberal voter, both of those outcomes fall below his or her reference level. Accordingly, the liberal voter is willing to bear a greater cost than a conservative voter is in order to turn out and vote in the midterm election. This is displayed graphically in Figure 7

[Figure 7 Here.]

Figure 7 is a visual representation of the logic underlying this paper's explanation of the midterm effect. In the figure, there are two differences displayed,  $c_d$  and  $c_r$ . These differences represent the maximum cost of turning out that a Democrat voter ( $c_d$ ) and a Republican voter ( $c_r$ ) will be willing to incur in order to cast a vote for the preferred congressional candidate. Since  $c_d$  is larger than  $c_r$ , then Democratic voters will be more likely to turnout than Republican voters in midterm elections when there is a Republican president, holding all other factors constant. Turning to the behavior of moderate voters, it follows that, due to the diminishing effect of increasing either gains or losses, the moderate voter is more likely to turn out than partisans of either party, *ceteris paribus*. Finally, holding all other factors constant, the theory predicts that the overall turnout in midterm elections will be lower, principally due to the abstention of the president's partisans.

## 2.3 Predictions

In this section, I list the theory's predictions. The six predictions vary in their substance as well as in the degree that they are interesting and/or unexpected. Each prediction is followed by a code that is used later in the paper to summarize the empirical performance of the theory.

**Aggregate Predictions.** The theory offers two predictions about aggregate election returns. First, it can be verified that the theory predicts that turnout will be higher in elections that can

lead to larger numbers of public policy outcomes.<sup>10</sup> Presidential election years offer a larger number of possible policy outcomes (4) than do midterm election years (2). Therefore, the theory predicts that aggregate turnout will decline in midterm election years.

**Prediction 1 (L1)** *Overall turnout will be lower in midterm elections than in presidential elections.*

While hardly surprising, Prediction **L1** at least confirms that the theory is consistent with the most well-established empirical regularity in U.S. elections.

The main aggregate prediction of the theory is that the president's party will *lose* midterm House elections relative to their long-run partisan base in terms of the total number of votes cast for the two parties in midterm House elections.<sup>11</sup>

**Prediction 2 (L2)** *Controlling for the partisan composition of the electorate, the president's party will receive fewer votes than the other major political party in midterm Congressional elections.*

Prediction **L2** is a strong prediction. It is important to note that the theory does not say anything about the allocation of congressional seats following midterm elections.

**Individual Predictions.** The first three predictions about individual behavior deal with how a voter's perception of the ideological distance between the parties will affect his or her turnout and vote choice.

The first prediction about individual behavior is that greater perceived ideological distance between the two parties increases the probability of turning out to vote. As with Prediction **L1**, this is not a surprising prediction, but it is important that the theory is consistent with such behavior.

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<sup>10</sup>This follows from the "maxmin" nature of individual behavior, as discussed in Section 2.1.

<sup>11</sup>As far as I am aware, such an empirical regularity has not been shown previously.

**Prediction 3 (L3)** *In both presidential and midterm elections, turnout will be positively correlated with perceived ideological distance between the two major parties.*

The assumption of loss aversion implies that, in midterm elections, the size of the effect of ideological distance between the parties depends upon which party holds the presidency. Specifically, the effect of ideological distance is greater for citizens who prefer the party that does not control the presidency in a midterm election.

**Prediction 4 (L4)** *In midterm elections, the effect of perceived ideological difference between the two major parties on turnout decisions will be greater for individuals whose ideal policy is closer to the opposition party's platform than for individuals whose ideal policy is closer to the president's party's platform.*

The theory presented in this paper presumes that the effect of ideology on vote choice (both in terms of the difference between the parties' platforms and the proximity to a given voters' ideal policy) does *not* depend on which party controls the presidency. These assumptions are stated as the final two predictions of the theory.

**Prediction 5 (L5)** *In all elections, the effect of perceived ideological difference between the two major parties on vote choice in House elections will not depend on which party holds the presidency.*

**Prediction 6 (L6)** *In both midterm and presidential elections, the effect of ideological proximity on the likelihood of voting for either party's House candidate (conditional upon turning out to vote) will be positive and independent of whether the party controls the Presidency.*

Predictions **L5** and **L6** are not unique to the theory presented here – they are both consistent with rational choice models of turnout and vote choice in two-party elections (e.g., Palfrey and Rosenthal [1985]). Strictly speaking, however, Predictions **L5** and **L6** are not predicted by (or

inconsistent with) the other prominent explanations of the midterm effect.<sup>12</sup> The loss aversion explanation is explicitly based on assumptions about individual behavior. Since the necessary data are available to examine this basis, Predictions **L5** and **L6** are each tested along with the other four predictions of the theory in the empirical analysis contained in Section 3.

## **2.4 Overview of the Loss Aversion Theory of Political Participation**

The theory presented in this paper predicts that individuals are differentially motivated to vote in midterm elections. According to this theory, an individual is less motivated to turnout and vote for her preferred party in a midterm election when that party holds the presidency. The effect of policy differences between the two major parties on turnout decisions is less for the president's partisans in midterm elections.

The model's predictions are driven by the assumption that there is a "kink" in each voter's payoff function at some reference level of utility. The inclusion of a kink in an individual's payoffs around such a reference-level runs counter to the traditional assumptions of expected payoffs-based models of individual behavior. Thus, even though the model is based upon purposive behavior and payoff maximization, it is not a traditional rational choice model. On the other hand, the theory assumes that a voter's choice once she is in the voting booth *does not* depend upon whether it is a midterm or presidential election. In this way, the loss aversion theory combines both rational and adaptive behaviors. With regard to the debate about the sources of the midterm effect, the key contribution of the loss aversion model of political participation is that it provides a an explanation of the effect (including subsidiary characteristics of the turnout in midterm elections) based on a model of individual voters' behaviors.

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<sup>12</sup>One possible exception in terms of predictions is the balancing theory (Alesina and Rosenthal [1989]), which assumes that individual voters vote for their preferred party and that the parties offer divergent platforms. However, the balancing explanation assumes full turnout and it does not treat the platforms of the parties as a parameter for the purpose of deriving comparative statics.

## 2.5 Comparison with Existing Explanations

There are (at least) five existing explanations of the midterm effect. The first and most famous of these is “surge and decline,” due jointly to Key [1958] and Campbell [1960].<sup>13</sup> The loss aversion explanation is related to the theory of surge and decline through the two explanations’ focus on turnout. One distinction between the two explanations is the explicit linkage of participation and ideology by the loss aversion theory. This is one piece of a larger distinction between the loss aversion explanation and the theory of surge and decline: the loss aversion theory is an individual-level (*i.e.*, “microlevel”) theory, whereas the theory of surge and decline is more accurately described as a “verbal” theory.

## 3 Data and Analysis

In addition to offering a theory of political behavior that explains the origins of the midterm effect in US congressional elections, I offer a detailed analysis of the competing explanations for the midterm effect, using both aggregate and individual-level data. Unsurprisingly, the competing explanations each offer insight into the basis for the president’s party’s performance in midterm and presidential election years. In the end, however, the loss aversion theory offered in this paper provides the most complete and succinct explanation of the origins of the midterm effect.

### 3.1 Aggregate Data

I first consider aggregate data. Unless otherwise noted, all election data in this section is drawn from Rusk [2001].

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<sup>13</sup>This theory has been the basis of many studies of the American midterm electorate, of particular interest the extensions of the theory by Albert Cover [1985] and James Campbell ([1987, 1991, 1997]).

### 3.1.1 Overall Turnout

**Effect of Election Type of Turnout.** For the sake of completeness, I verify that the turnout (in terms of percentage of eligible voters) in midterm election years is lower than in presidential election years. For the 33 midterm elections between 1870 and 1998, the mean level of turnout was 47.7%, with a standard deviation of 11.3%. For the 33 presidential elections between 1868 and 1996, the mean level of turnout was 60.7%, with a standard deviation of 10.8%. The  $t$ -statistic for the null hypothesis that the two distribution of turnout percentages possess equal means is 4.7819, with a corresponding  $p$ -value of  $p = 0.00001$ . Thus, we can safely (and unsurprisingly) conclude that overall turnout is lower in midterm elections than in presidential elections.

**Finding 1** *Prediction L1 is supported.*

### 3.1.2 Election Outcomes

I now discuss election outcomes: namely, which party tends to win midterm elections. This is a simple analysis, with the only complication being the calculation of the long-run partisanship of the GOP and the Democratic Party in their respective eras of dominance in US history.

**Who Wins Midterm Elections?** As discussed earlier, the loss aversion theory is distinguished from the other explanations for the midterm effect insofar as it predicts that the president's party will lose midterm elections. While this was displayed alternately in Figures 2 and 3, Table 1 demonstrates that this prediction is confirmed statistically by the unnormalized data (albeit at the 10% level of significance). The table reports the average difference between the number of votes received by the president's party in House elections and the number received by the opposition party in presidential and midterm elections. The elections of 1932 and 1934 have been excluded from the analysis. Otherwise, every congressional election from

1868 through 2000 is included.

[Table 1 about here.]

Consistent with the theory's predictions, the average difference between the votes received by the president's party and the opposition party in House elections is negative in midterm elections. Additionally, Table 1 displays the well-known presidential "surge" in House elections during presidential election years. Before concluding the test of Prediction **L2**, I first conduct the analysis after controlling for the long-run partisanship of the US electorate.

**Controlling for Long-Run Partisanship.** As discussed earlier, the partisanship of the US electorate has almost always favored one of the major parties. In Section 1, I presented congressional vote share data that had been normalized to account for the shift from the GOP to the Democratic Party as the favored party in the US national electorate (Figure 3). I now detail how this normalization was derived.

In order to control for the effect of being the favored party, I use the division utilized by James Campbell [1991], where the Republicans are considered the favored party from the Civil War until the Great Depression and the Democrats are the favored party afterwards.<sup>14</sup> A dummy variable called *InParty* was created, which took the value of 1 if the party controlling the Presidency was the Republicans prior to 1932 or if the Presidency was controlled by the Democrats after 1930. In addition, I created a dummy variable that took a value of 1 in all years prior to 1932 and multiplied this by *InParty* to create a second dummy variable called *InGOP*. Finally, I regressed the congressional vote share received by the president's party (*PCVS*) on these two dummy variables. The coefficient for *InParty* represents two times the estimated advantage of the favored party, while the coefficient for *InGOP* represents the estimated difference in the advantages for the Republicans and the Democrats in the respective eras. The results are reported in Table 2.

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<sup>14</sup>The analysis described below was also conducted under the supposition that a new long-run period began with the midterm elections of 1994. The results are insensitive to this variation.

[Table 2 about here.]

The advantage of the favored party is equal to half of the estimated value of  $\beta_1$ , which is 2.25% in the sample. The estimated value of  $\beta_2$  indicates that there is no discernible difference between the electoral advantages possessed by the Republicans and Democrats in their respective eras. I then used the estimated advantage of the favored party to adjust the congressional vote share received by the president's party according to whether the party was the favored party at the time of the election. Thus, the president's party's vote share is reduced by 2.25 percentage points if the president's party was favored, and increased by 2.25 percentage points otherwise. A modified test of the aggregate midterm effect prediction is displayed in Table 3.

[Table 3 about here.]

Table 3 demonstrates that, once the long-term partisanship of the nation is taken into account, the president's party has performed poorly in absolute terms in midterm elections since the Civil War (notably excepting the midterm election of 1934). This is a stronger conclusion than would be drawn from the surge and decline and referendum hypothesis explanations. In particular, the estimates in Table 3 (as well as those in Table 1, to a less degree) support Prediction **L2**.

**Finding 2** *Prediction L2 is supported.*

## 3.2 Individual-Level Data

My individual-level data is drawn from the National Election Studies (NES) and encompasses each Federal election from 1980 through 2000. The key variables of interest were the respondents' reports about whether they turned out to vote, their vote choice in their congressional election, their partisanship (Republican, Democrat, or Independent),<sup>15</sup> their placement on the

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<sup>15</sup>When classifying individuals for summary statistics, the respondent's initial response regarding their party identification is used. This is variable vcf0302 (which is essentially a three-point scale) in the NES cumulative data file.

traditional seven-point ideology scale, their placements of the two major parties on this same scale, their thermometer scores for the two major parties, and demographic characteristics including income, education, race, gender, age, and whether the respondent lives in the South. The total number of respondents in these surveys was 22,871. The sample size in many of the analyses is reduced by omission of respondents who either reported not voting or did not answer certain questions (for example, some respondents did not answer the party identification question or the ideological placement questions).

### **3.2.1 Vote Choice: The Roles of Ideology and Partisanship**

Table 4 presents the results of two logistic regressions. The first column examines the determinants of congressional vote choice for all respondents in presidential election year surveys who reported that they voted. The dependent variable was coded as a 1 if the respondent reported voting for a candidate from the president's party in their congressional election. The second column reports the results for the same analysis restricted to respondents in midterm election year surveys. The principal independent variables in the analysis were the respondent's ideological position relative to the president's party<sup>16</sup> and the respondent's thermometer score for the president (or the presidential candidate who won the election). In addition, controls for the respondent's demographic characteristics were included,<sup>17</sup> as well as election-specific factors, including the partisanship of the incumbent if the incumbent sought reelection.

[Table 4 Here.]

The results in Table 4 impose a symmetry on the effect of ideology: ideological differences that favor the president's party are treated the same as ideological differences that favor the opposition party. Table 5 reports the results of two logistic regressions that relax this restriction

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<sup>16</sup>This is coded as how much closer the respondent reports his or her ideological position is to the president's party's position than to the position of the opposition party.

<sup>17</sup>These controls include the respondent's age, age squared, education, income, gender, race, urban status of residence, and a dummy variable for southern states.

but are otherwise identical to those reported in Table 4. In particular, the regressions in Table 5 allow for the effect of ideology favoring the president’s party (the party that won the presidential election) to differ from the effect of ideological differences that favor the other party. Thus, the effect of ideology can be asymmetric in the models estimated in Table 5. All other variables included in the regressions are identical to those included in the regressions reported in Table 4.

[Table 5 Here.]

The results in Table 5 indicate that the effect of ideology on individual vote choice is independent of whether the ideological difference favors the president’s party. Indeed, the coefficients on the two “directions” of ideological distance are essentially equal to each other as well as the coefficient estimated under the imposition of symmetry in Table 4. In addition, the coefficients on the other independent variables are nearly identical as well.<sup>18</sup> Thus, Tables 4 and 5 provide strong evidence for the operation of a “traditional” model of vote choice *conditional upon turning out to vote at all*. In other words, ideology has the expected effect on vote choice, it is statistically significant, and it is independent of which party controls the Presidency. I conclude that Prediction **L6** is supported. In addition, the effect of the individual-specific presidential thermometer variable (*Pres. Therm*) is positive and significant in all four regressions, offering support for Predictions **R2** and **N1**. Finally, ideological extremism is estimated as having no significant effect on vote choice and, in addition, is greater than zero in presidential election years and less than zero in midterm election years. Prediction **S5** accordingly receives no support.

**Finding 3** *Prediction L6 is supported.*

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<sup>18</sup>This is true also of the unreported coefficients for the control variables.

### 3.2.2 Turnout: The Role of Ideology

The premise of this paper's theory, however, is that the effect of ideology on the turnout decision depends upon which party is favored by the ideological difference. In Table 6, I test this directly.<sup>19</sup> Using the self-reported turnout decision as the dependent variable (where 1 indicates that the respondent reported having turned out to vote), I included the independent variables from the analyses reported in Table 5 as well as measures of whether the respondent had been contacted by one of the major parties prior to the election (denoted by *Contact*) and the respondent's level of interest in the election, a four point scale (denoted by *R Interest*).

[Table 6 about here.]

The results strongly support an asymmetric effect of ideology on the turnout decision. In presidential elections, ideological differences that favor the winning presidential candidate's party have a stronger effect on turnout than do ideological differences that favor the losing candidate's party. The relative sizes of the effects are reversed in midterm elections, in accordance with the theory presented in this paper. In addition, the presidential thermometer variable is no longer significant, with a coefficient that is essentially equal to zero in both presidential and midterm elections. Similarly, ideological extremism and the partisanship of the incumbent is not significant in either type of election. The other variables all have the expected signs.

In sum, the fact that the estimated coefficient for *Pro-Admin Ideology* is positive and significant in column (1) of Table 6 while the estimated coefficient for *Anti-Admin Ideology* is positive and significant in column (2) constitutes support for Prediction **L3**: perceived ideological differences between the party increase the probability of an individual turning out to vote in all elections. In addition, the fact that the estimated coefficient for *Anti-Admin Ideology* is larger than the (insignificant) coefficient of *Pro-Admin Ideology* in column (2) constitutes support for Prediction **L4**. The four estimates for the ideology variables do not support Pre-

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<sup>19</sup>This analysis ignores the role of pivot probabilities in turnout decisions precisely because the loss aversion theory presented in this paper presumes that individuals do not condition upon them.

diction **L5**, however, as the effect of ideology on the probability of turning out to vote is not symmetric in presidential elections. Finally, the fact that the estimated coefficient *Pres. Thermometer* is essentially equal to zero in both columns (1) and (2) implies that the “negative turnout” prediction (Prediction **N3**) is not supported.

**Finding 4** *Predictions L4 and L3 are supported, while Prediction L5 is not.*

The theory offered in this paper, based on loss aversion, offers a theoretically compact and generalizable explanation of the midterm effect. In addition, it predicts several features of electoral participation that are not predicted by the other explanations, including the relative increase in participation by policy moderates in midterm elections, the asymmetry of ideology’s effect on turnout in midterm elections, and fact that the president’s party is disadvantaged *in absolute terms* in midterm elections. Thus, the present theory offers both theoretical advantages (principally that it is not *ad hoc* with respect to explaining the midterm effect) and empirical strengths relative to the existing explanations. Perhaps unsurprisingly, I feel that, among the explanations considered here, the loss aversion theory of decision making offers the most desirable combination of parsimony and empirical support in explaining the midterm effect. In addition, as it is loosely based on the primitives of prospect theory (Kahneman and Tversky [1979]), it is more closely consistent with a broad family of models of individual choice within both political science (*e.g.*, Quattrone and Tversky [1988] and Arnold [1990] and economics (*e.g.*, Thaler [1991]). Before concluding, I discuss the implications of this work for two important aspects of voter decision-making.

**The Role of Presidential Approval.** The referendum and negative voting explanations both claim a role for presidential approval in determining individuals’ vote choices in House elections. The negative voting model, however, also implies a role of presidential approval in determining turnout decisions, a prediction for which I do not find support. The importance of

presidential approval in vote choice should be considered an important focus of future work. Given the support found for loss aversion in individual decision making, an interesting question is how perceptions are filtered through a “loss averse lens” as an individual forms his or her opinion of the president’s performance.

**The Economy: The Formation of Individual Perceptions.** Insofar as presidential approval is correlated with economic indicators, the referendum theory also implies that economic indicators are influential in midterm congressional election outcomes. However, while the economy is clearly a major factor in Presidential races, research into the economy’s role in *House* elections has yielded decidedly mixed results (*e.g.*, Erikson [1990] and Keech [1995]) at both the individual and aggregate level.<sup>20</sup> Indeed, when the role of the economy in voters’ decision making was investigated with the NES data (not reported), no systematic effects of economic perceptions on turnout or vote decisions were found. However, individual perceptions of the economy are notoriously noisy (for both study-specific and cognitive reasons), thereby reducing the power of the empirical tests.

## 4 Conclusions

The midterm effect is a striking regularity of US politics. In addition to its effect on public policy outcomes in the United States, the phenomenon yields an important insight into the calculus used by citizens in making the decision about whether to turn out and vote. This paper has offered a behavioral theory of individual decision-making that is consistent not only with the midterm effect, but also with associated ancillary phenomena such as the reduced turnout in midterm elections, the role of ideology in determining turnout and vote choice decisions, the composition of the midterm and presidential electorates with respect to moderate and extremist

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<sup>20</sup>For a recent reexamination of the aggregate phenomenon, see Himmelberg and Wawro [2001].

voters, and the asymmetry in the effects of pro- and anti-administration sentiments with respect to midterm and presidential elections.

It bears repeating that the model presented in this paper is broadly consistent with other models of decision-making in political science, social psychology, economics, and behavioral decision research. The two most prominent of these models are Kahneman and Tversky's *prospect theory* (especially as introduced to political science by Quattrone and Tversky [1988]) and Herbert Simon's theory of *satisficing* (Simon [1957]). I feel that this is an advantage of the loss aversion model of political participation. Instead of representing an *ad hoc* explanation for one empirical regularity in US politics, the loss aversion theory of behavior can (and should) be subjected to refinement and testing in other political arenas. In particular, the theory should be portable: if truly valid, it should withstand validation outside of the United States.

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Variable	Election	Obs	Mean	Std. Err.	90% Conf. Interval
Net Votes <sup>+</sup>	Presidential	33	1,590.1	641.5	(503.4, 2, 676.9)
	Midterm	32	-1,094.5	532.5	(-1, 997.3, -191.6)
Net Share	Presidential	33	.055	.014	(.031, .078)
	Midterm	32	-.023	.014	(-.047, 3.71 × 10 <sup>-5</sup> )

<sup>+</sup>: Thousands of net votes.

Table 1: Aggregate Presidential Party Performance in Congressional Elections

<b>Variable</b>	<b>Coefficient</b>
Dep.Var.: Pres. Congressional Vote Share	(Std. Err.)
<i>InParty</i>	0.045** (0.012)
<i>InGOP</i>	-0.001 (0.012)
Intercept	-0.020* (0.008)

Significance levels : \* : 5%, \*\* : 1%

Table 2: Estimated Advantage of Favored Party

Election Type	Obs.	Mean	Std. Error	95% Confidence Interval
Presidential	34	.022	.006	(.01, .034)
Midterm	33	-.017	.006	(-.029, -.005)

Table 3: Adjusted Net Congressional Vote Share for President's Party By Election

	Presidential	Midterm
	(1)	(2)
Adm. Ideology	.26*** (.02)	.163*** (.025)
Pres. Therm.	.005*** (.001)	.015*** (.002)
Pres. Incumbent	1.697*** (.086)	1.986*** (.091)
R In Pres. Party	.666*** (.094)	.646*** (.106)
R In Out Party	-1.037*** (.106)	-1.112*** (.118)
<i>N</i>	4230	3728
Pseudo- <i>R</i> <sup>2</sup>	.278	.306
Log-Likelihood	-2052.26	-1726.644
$\chi^2$	1070.019	998.186

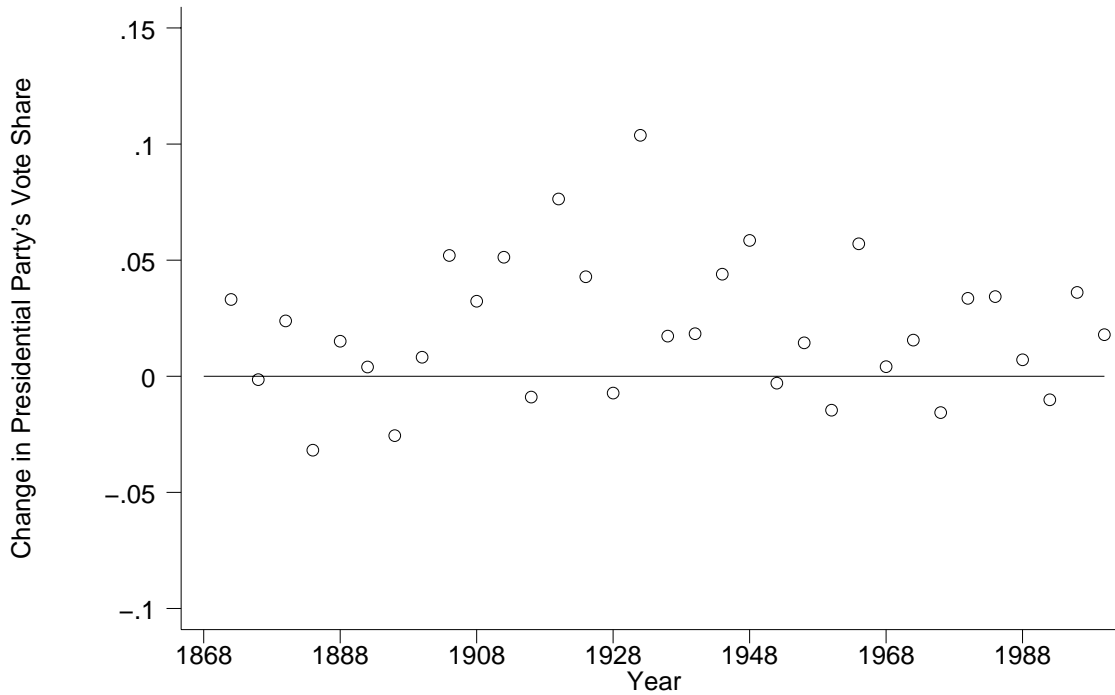
Table 4: Symmetric Vote Choice Model (Year Fixed-Effects and Control Variables Omitted)

	Presidential	Midterm
	(1)	(2)
Pro-Adm. Ideology	.233*** (.036)	.14*** (.042)
Anti-Adm. Ideology	-.292*** (.041)	-.189*** (.048)
Pres. Therm.	.005*** (.001)	.015*** (.002)
Pres. Incumbent	1.7*** (.086)	1.984*** (.091)
R In Pres. Party	.672*** (.094)	.654*** (.107)
R In Out Party	-1.027*** (.106)	-1.102*** (.119)
<i>N</i>	4230	3728
Pseudo- <i>R</i> <sup>2</sup>	.278	.306
Log-Likelihood	-2051.844	-1726.644
$\chi^2$	1071.253	998.186

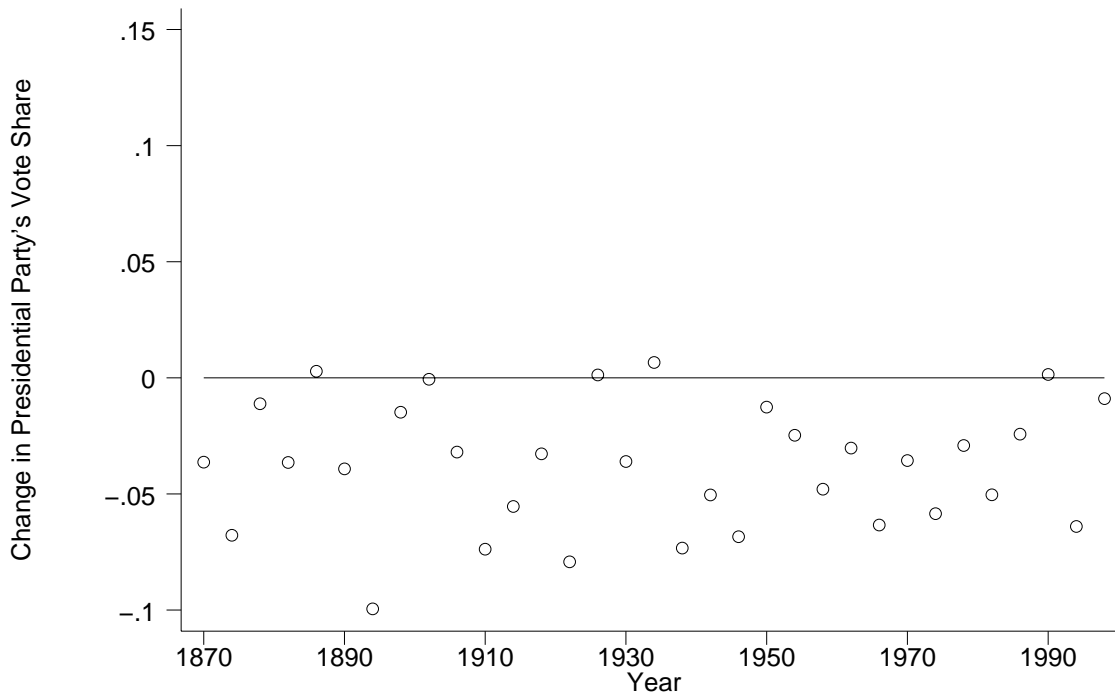
Table 5: Asymmetric Vote Choice Model (Year Fixed-Effects and Control Variables Omitted)

	Presidential	Midterm
	(1)	(2)
Pro-Adm. Ideology	.173*** (.041)	.064* (.031)
Anti-Adm. Ideology	.093* (.037)	.106*** (.031)
R Contacted	.784*** (.115)	.827*** (.074)
R Interest	.92*** (.064)	1.028*** (.05)
R In Pres. Party	.305** (.108)	.213* (.084)
R In Out Party	.405*** (.105)	.302*** (.084)
<i>N</i>	5145	5923
Pseudo- <i>R</i> <sup>2</sup>	.213	.226
Log-Likelihood	-1905.92	-3028.151
$\chi^2$	748.083	1207.413

Table 6: Asymmetric Turnout Model (Year Fixed-Effects and Control Variables Omitted)

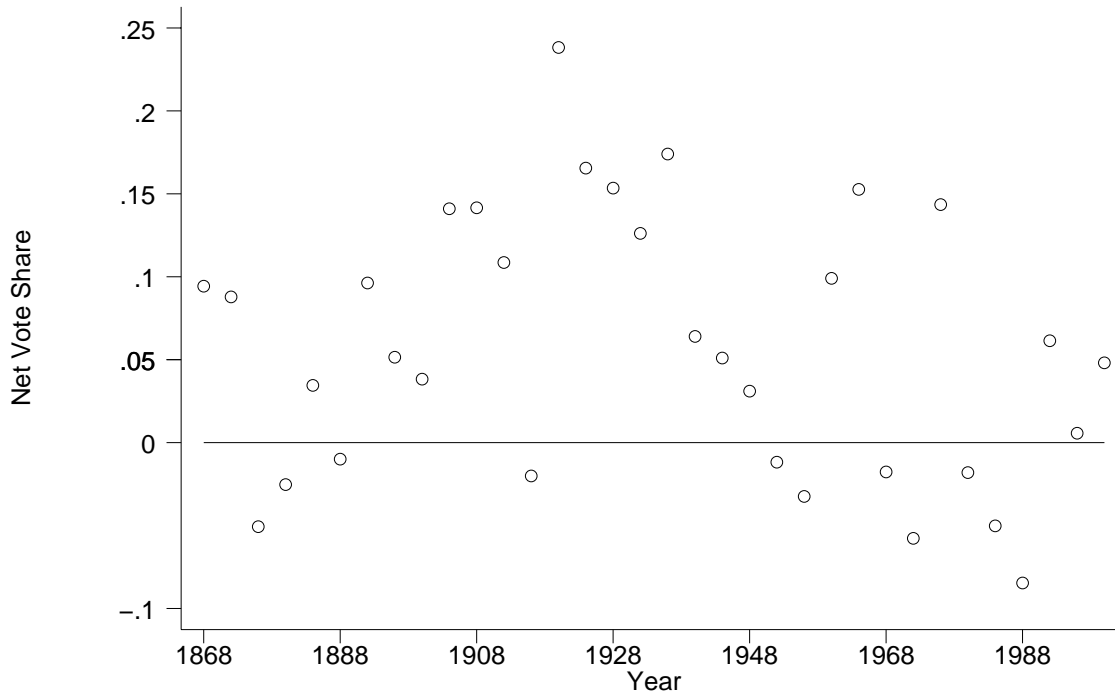


Relative Vote Midterm Effect: Presidential Elections

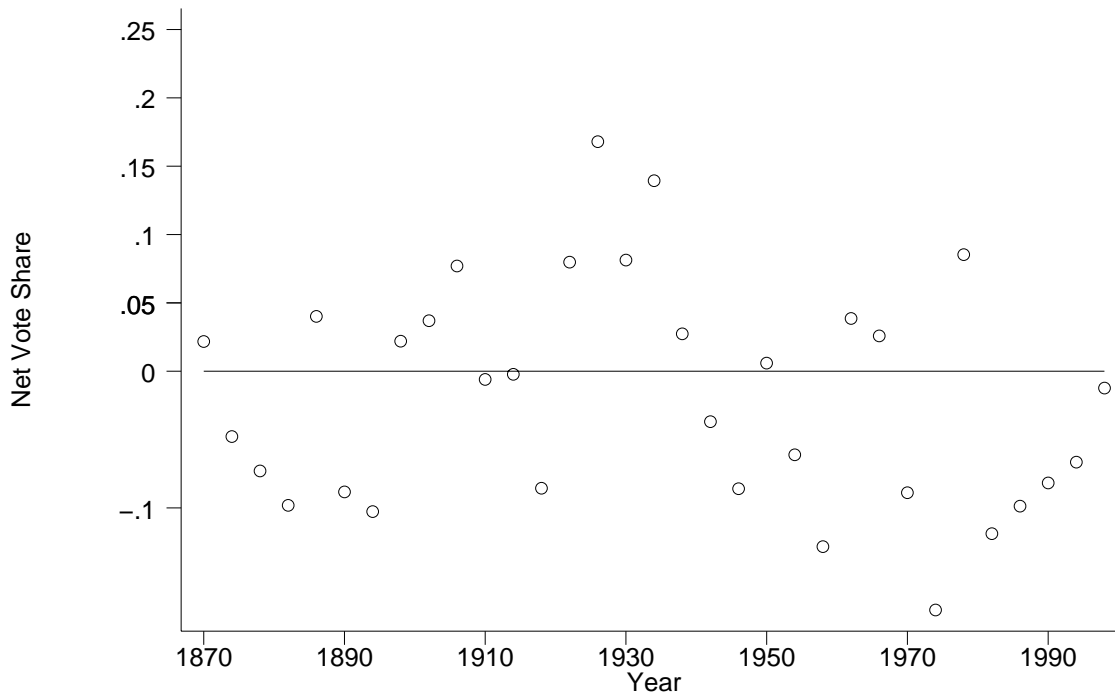


Relative Vote Midterm Effect: Midterm Elections

Figure 1: The “Relative Votes” Midterm Effect

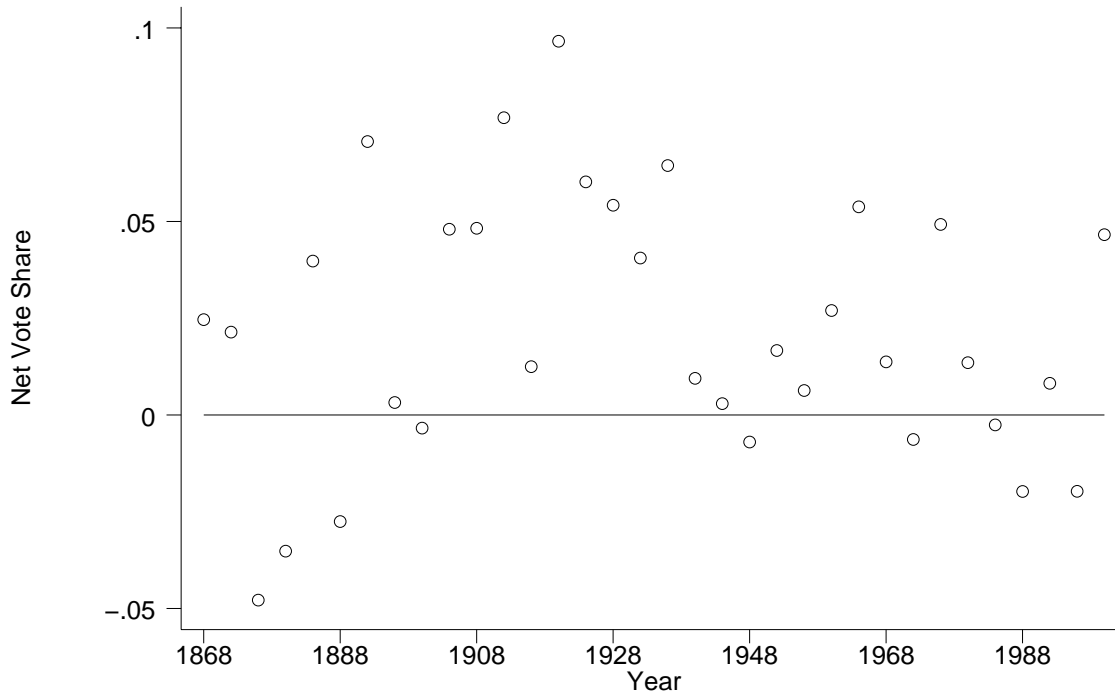


Absolute Vote Midterm Effect: Presidential Elections, Unadjusted

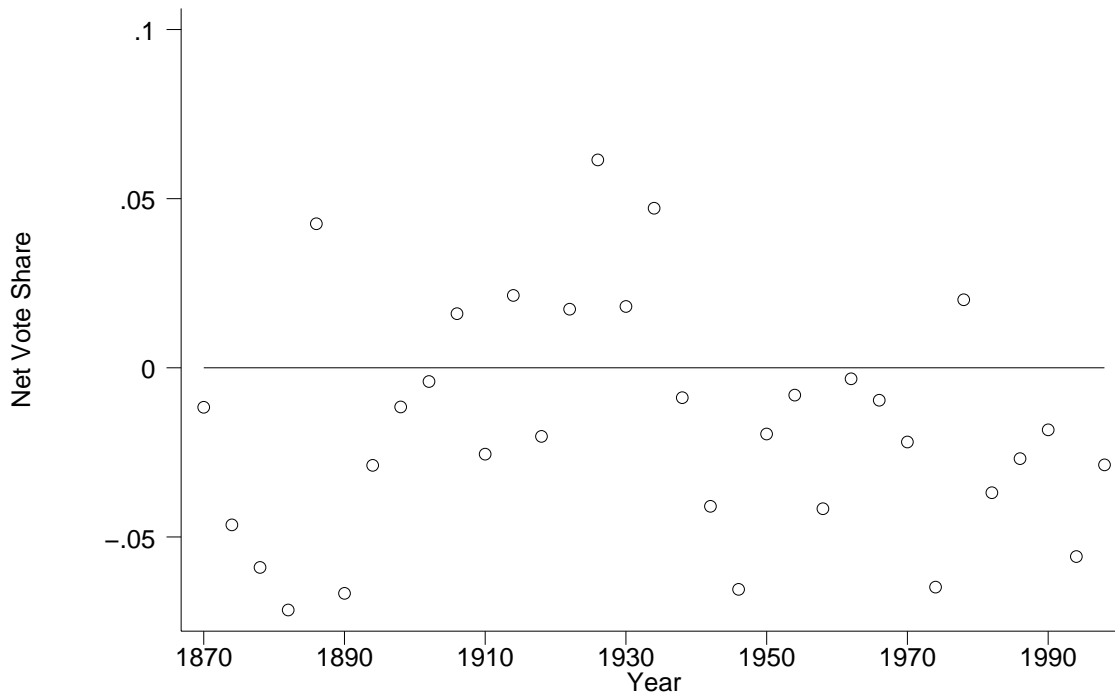


Absolute Vote Midterm Effect: Midterm Elections, Unadjusted

Figure 2: The Unadjusted “Absolute Votes” Midterm Effect



Absolute Vote Midterm Effect: Presidential Elections, Normalized



Absolute Vote Midterm Effect: Midterm Elections, Normalized

Figure 3: The Normalized “Absolute Votes” Midterm Effect

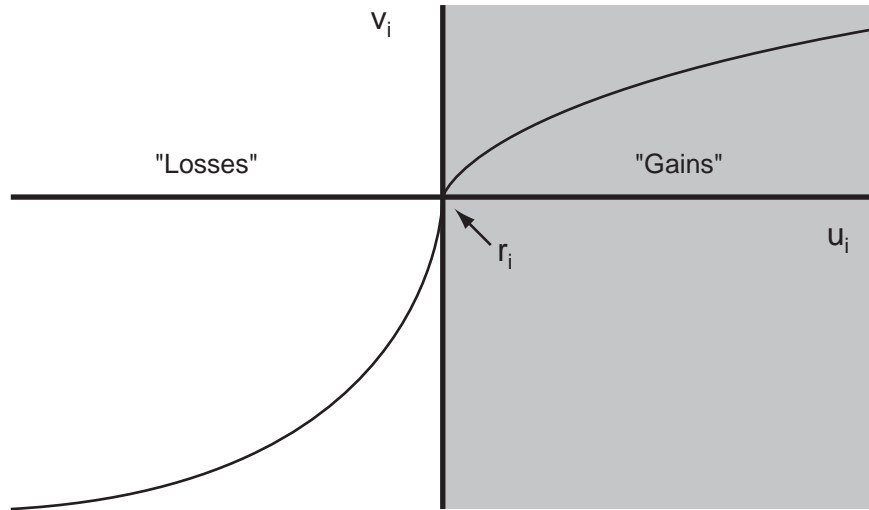


Figure 4: Reference-Level Dependent Payoff ( $v_i$ ) as a Function of Utility ( $u_i$ )

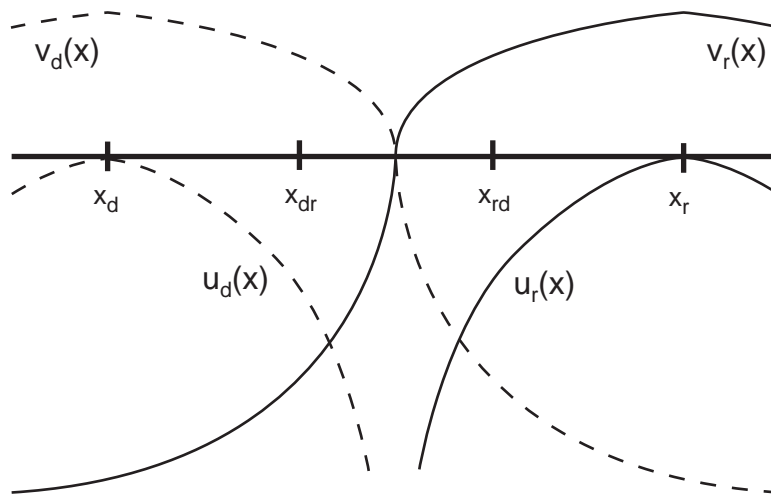


Figure 5: Partisans' Utility and Payoff Functions

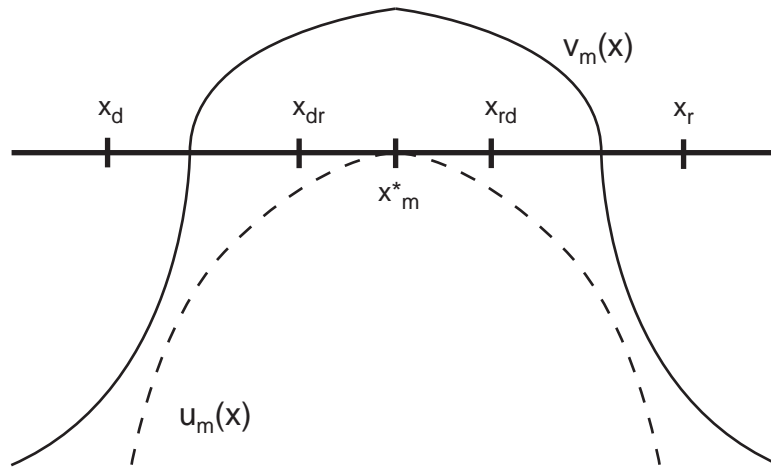


Figure 6: Moderates' Utility and Payoff Functions

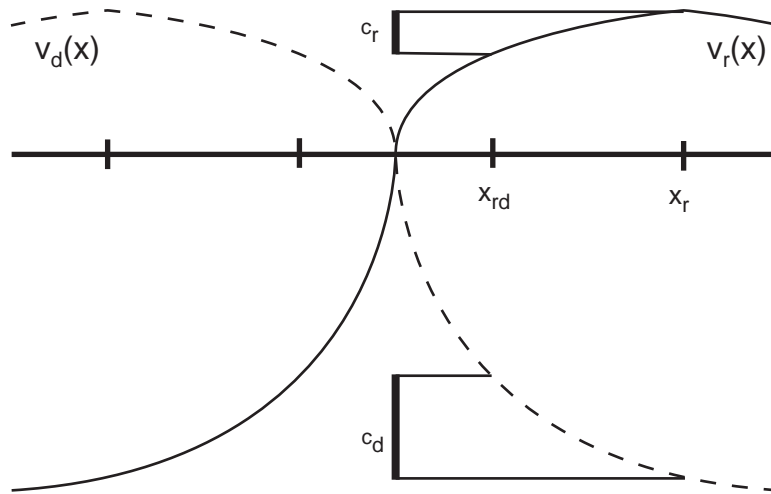


Figure 7: A Midterm Election with Republican-Controlled Presidency