# Coordination and Policy Moderation at Midterm*

Walter R. Mebane, Jr.† Jasjeet S. Sekhon‡

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†Associate Professor, Department of Government, Cornell University, Ithaca, NY 14853-4601. Voice: 607/255-3868. Fax: 607/255-4530. Email: wrm1@cornell.edu

‡Assistant Professor, Government Department, Harvard University. 34 Kirkland Street. Cambridge, MA 02138. Voice: 617/496-2426. Fax: 617/496-5149. Email: jsekhon@fas.harvard.edu

**Abstract**

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Eligible voters have been coordinating their turnout and vote decisions for the House of Representatives in midterm elections. Coordination is a noncooperative rational expectations equilibrium. Stochastic choice models estimated using individual-level data from NES surveys of years 1978–1998 support the coordinating model and reject a nonstrategic model. The coordinating model shows that many voters have incentives to change their votes between presidential year and midterm after learning the outcome of the presidential election. But this mechanism alone does not explain the size of midterm cycles. The largest source of loss of support for the president's party at midterm is a regular pattern in which the median differences between voters' ideal points and the parties' policy positions have become less favorable for the president's party than they were at the time of the presidential election (nonvoters show the same pattern). The interelection changes are not consistent with the theory of surge and decline.

Do Americans coordinate their electoral choices in midterm congressional elections? Based on empirical tests of a rational expectations equilibrium model of voters' choices among candidates for president and for the House of Representatives, Mebane (2000) argues that there is coordination among voters in presidential elections. The strategic theory of policy moderation introduced by Alesina and Rosenthal (1989; 1995; 1996), which motivates Mebane's analysis, envisions each voter acting according to a unified strategy that spans both the presidential and midterm elections. In Alesina and Rosenthal's theory, each voter's rational expectation about what the aggregate of voters will do at midterm constrains the voter's actions during the preceding presidential election. From the perspective of such a unified theory, a demonstration of coordination in presidential-year voting is incomplete without a comparable demonstration of coordination at midterm. We use an extension of Mebane's (2000) fixed-point methods to develop a model of strategic equilibrium based on rational expectations among midterm electors. We test the model by using National Election Studies (NES) survey data from the six midterm elections of years 1978 through 1998 to estimate a stochastic choice model that respects the primary fixed-point constraint of the formal model.

One of the most important implications of Alesina and Rosenthal's theory is an explanation of midterm loss.[1] According to their theory, each voter chooses a congressional candidate during the presidential-year election to match the voter's expectation regarding the presidential outcome, which is uncertain. Some voters who voted for a congressional candidate of the president's party when the presidential outcome was uncertain would have voted for the other party had they known which presidential candidate would win. At midterm such voters change their votes, so that at midterm the president's party loses congressional vote share compared to the preceding presidential-election year. Alesina and Rosenthal (1989; 1995; Alesina, Londregan and Rosenthal 1993) show patterns in aggregate data that in several respects match the kind of midterm cycle that their theory implies, but, as they observe, the midterm cycle occurs too frequently to be fully consistent with their theoretical model (Alesina and Rosenthal 1995, 207).[2] We use the data and

[1] Erikson (1988) documents the midterm loss phenomenon and discusses—and rejects—several explanations that have been proposed for it.

[2] Scheve and Tomz (1999) use NES panel data to study the relationship between surprise about the presidential election outcome

parameter estimates from our model and from Mebane (2000) to confirm that the disappearing uncertainty of Alesina and Rosenthal's theory accounts for only a small part of the midterm cycles that occurred between 1976 and 1998. The predominant part of the explanation for the frequency and magnitude of the midterm cycles is a regular pattern of interelection changes in the relationship between voters' policy ideal points and the policy positions they attribute to the parties.

An alternative explanation for midterm loss is the theory of surge and decline (Campbell 1966). This argument emphasizes differences in voter turnout between the presidential election and midterm. The details of the theory vary somewhat in different accounts, but the central idea is that in the presidential election there is a surge of people who turn out and vote for candidates of the party that wins the presidency but who do not vote at midterm. The argument highlights the fact that Independents are more likely to vote in the presidential election than at midterm, so that the midterm electorate consists of a higher proportion of party identifiers whose vote choices are relatively unmoved by short-run concerns (Campbell 1987). Born (1990) uses NES data from several elections to conduct individual-level tests of various aspects of the theory, finding little if any support for it.[3] In our empirical assessments using NES data we find that the changes that systematically occur between the presidential election and midterm do not match the pattern suggested by the theory of surge and decline.

The need to address the theory of surge and decline is one reason why midterm nonvoters are relevant. Even apart from the surge and decline theory, it is important not to ignore the fact that turnout is lower at midterm than in the presidential election and that different kinds of people turn out at midterm. Apparent differences between midterm and presidential election voters may be nothing more than sample selection phenomena. Also there is a question whether decisions to vote are also coordinated through rational ex-

and midterm loss. As a test of Alesina and Rosenthal's theory their analysis is limited because they do not distinguish policy preferences from party identification and do not impose the theory's equilibrium conditions on voters' beliefs or strategies.

[3]Another line of surge and decline theory argues that voters weigh negative aspects of a president's performance more heavily than positive aspects (Bloom and Price 1975; Kernell 1977). Several studies find mixed support for various interpretations of the negative voting idea (Abramowitz 1985; Cover 1986). Fiorina and Shepsle (1989) suggest that evidence of negative voting reflects nothing more than a technical artifact.

pectations. In our models we consider the population of everyone who is eligible to vote—henceforth, the population of *electors*.

We assume that each elector has the same basic institutional understanding that is attributed to voters in the theories of Alesina and Rosenthal (1995; 1996) and Mebane (2000). Each elector knows post-election policy outcomes are compromises between the positions taken by the president and the Congress, and each elector believes the two political parties push for distinct policy alternatives. In our theory most—not all—electors care about the policy outcomes. An elector may vote for one of the parties or not vote. An elector is acting to moderate policy when the elector chooses what to do based on the idea that, via the institutional structure, the policy outcome will be intermediate between the parties' positions. As in Mebane (2000), there is a coordinating equilibrium when each elector makes the best possible assessment of what the election outcome will be and then uses that assessment to act in the way that is most likely to produce the best possible result for the elector.

The equilibrium concept in our model is the same as in Mebane (2000): coordination is a noncooperative rational expectations equilibrium among electors.[4] Each elector is able to make an equilibrium strategic choice that is based on accurate expectations regarding the aggregate results of other electors' intended choices. Different electors have beliefs about the upcoming election results that are very similar but not exactly the same in equilibrium. As in the model of Mebane (2000), the similarity is a result of common knowledge all electors have, while the differences are due to private information each elector has.[5] Our equilibrium includes the level of turnout along with the two-party split of votes for House candidates. Our model allows exogenous factors to motivate an elector to vote, so our equilibrium is not a new solution to the problem of obtaining substantial positive turnout in equilibrium based purely on post-election policy considerations (cf. Hinich, Ledyard and Ordeshook 1972; Enelow and Hinich 1984; Ledyard 1984; Palfrey

[4]Mebane's (2000) analysis of presidential and House candidate choices in presidential election years considers only voters. Mebane discusses the relationship between his equilibrium concept and rational expectations equilibrium models such as McKelvey and Ordeshook (1985).

[5]Mebane's (2000) comments regarding the implicit institutional foundations of his coordinating voting model and the realism of its assumptions about what individuals know or believe also apply to our model.

and Rosenthal 1985).

We use NES survey data from midterm election years 1978 through 1998 to estimate a stochastic choice model that matches the theoretical model. In both models, different electors have different ideas about what the parties' policy positions are. As in Mebane (2000), the fixed-point values determined in the empirical analysis estimate the aggregate values that are common knowledge in equilibrium in the theoretical model. Tests based on estimates of the empirical model's parameters support the existence of coordination among House electors in recent midterm years, with most electors acting to moderate policy.

We also compare the coordinating model to an empirical model that applies to midterm elections the core idea in the nonstrategic theory that Fiorina (1988; 1992, 73–81) introduced to describe institutional balancing by voters in elections during presidential years. Mebane (2000) finds the nonstrategic theory to be significantly inferior to his coordinating theory in terms of fit to NES data from presidential election years 1976–1996. Our nonstrategic model fits the midterms data significantly worse than the coordinating model does, and the estimated parameters of the nonstrategic model do not support an interpretation that there is nonstrategic institutional balancing.

## A Model of Coordination in Turnout and Vote Choices at Midterm

In a manner similar to Mebane (2000), the model of coordination we develop is based on a fixed-point theorem that defines the common knowledge belief that all electors have about the upcoming election results. The values of two aggregate statistics summarize the election results: (i) the proportion of the two-party vote to be cast nationally for Republican candidates for the House and (ii) the proportion of electors who will vote. Our theory differs in a basic way from Mebane's by including electors whose election-time preferences do not depend on post-election policies. The strategies of such electors do not depend on the aggregate values. Each elector who does care about the policies responds to the belief each has about the aggregate values, because the values affect the loss each expects. Notwithstanding their different election-time interests in the

aggregate values, in our theory all electors have the same common knowledge belief. We also allow some House districts to have a candidate running unopposed.

In the model the election is a game among everyone who is eligible to vote, that is, among all the electors, assumed to be a large number. The form of the model is similar to Mebane's (2000) coordinating model for presidential elections, although many details differ. Electors act noncooperatively and simultaneously, each choosing whether to vote for a Democratic or a Republican candidate for a House seat or not to vote (in the final paragraph of this section we extend the model for unopposed candidates). Most but not all electors' preferences depend on the expected outcome of the election and therefore on the strategies other electors are expected to use. Equilibrium occurs when every elector uses all available information to form such expectations and, given everything each elector knows, no elector expects to gain by using a different strategy.

Let $\vartheta_{Di}$, $\vartheta_{Ri}$, $\vartheta_{PDi}$ and $\vartheta_{PRi}$ denote values in the interval $[0,1]$ that elector $i$, $i = 1,\ldots,N$, believes at election time are the general positions of the Democratic party ($\vartheta_{Di}$) and Republican party ($\vartheta_{Ri}$), and, as relevant, the position of the Democratic president ($\vartheta_{PDi}$) or the Republican president ($\vartheta_{PRi}$). The value zero represents the extreme liberal position and the value one represents the extreme conservative. The positions $i$ expects the Democratic party ($\theta_{Di}$) and the Republican party ($\theta_{Ri}$) to act on after the election are, respectively:

$$\theta_{Di} = \begin{cases} \rho\vartheta_{PDi} + (1-\rho)\vartheta_{Di}, & \text{if Democrat is president} \\ \vartheta_{Di}, & \text{if Republican is president} \end{cases} \tag{1}$$

$$\theta_{Ri} = \begin{cases} \vartheta_{Ri}, & \text{if Democrat is president} \\ \rho\vartheta_{PRi} + (1-\rho)\vartheta_{Ri}, & \text{if Republican is president} \end{cases} \tag{2}$$

with $0 \leq \rho \leq 1$. Let $\overline{V}_i = \overline{R}_i + \overline{D}_i$ denote the proportion of electors $i$ expects will vote nationally, with $\overline{R}_i$ being

the proportion voting for Republican House candidates and $\bar{D}_i$ being the proportion voting for Democrats. Using $\bar{H}_i = \bar{R}_i/\bar{V}_i$ to denote the proportion of the vote that *i* expects to go to Republicans, the post-election policy that elector *i* expects, denoted $\tilde{\theta}_i$, is:

$$\tilde{\theta}_i = \begin{cases} \alpha\theta_{Di} + (1-\alpha)[\bar{H}_i\theta_{Ri} + (1-\bar{H}_i)\theta_{Di}], & \text{if Democrat is president} \\ \alpha\theta_{Ri} + (1-\alpha)[\bar{H}_i\theta_{Ri} + (1-\bar{H}_i)\theta_{Di}], & \text{if Republican is president ,} \end{cases} \tag{3}$$

where $\bar{H}_i\theta_{Ri} + (1-\bar{H}_i)\theta_{Di}$ is the expected position of the House and $\alpha$, $0 \leq \alpha \leq 1$, represents the president's strength in comparison to the House.

We use a variable $\varsigma_i$ to indicate whether the preferences of elector *i* depend on expected policy outcomes: $\varsigma_i = 1$ if so, $\varsigma_i = 0$ if not. Given elector *i*'s ideal point, denoted $\theta_i \in [0,1]$, the policy-related loss that *i* expects is:

$$\lambda_i = \begin{cases} |\theta_i - \tilde{\theta}_i|^q, & \text{if } \varsigma_i = 1 \\ 0, & \text{if } \varsigma_i = 0 , \end{cases} \tag{4}$$

with $0 < q < +\infty$.[6] Every elector's choice affects $\bar{H}_i$ and hence affects $\tilde{\theta}_i$. If $\varsigma_i = 1$, the expected loss therefore has three different values, depending on whether *i* chooses the Republican ($\lambda_{i,R}$), *i* chooses the Democrat ($\lambda_{i,D}$) or *i* does not vote ($\lambda_{i,A}$). For electors with $\varsigma_i = 0$, $\lambda_{i,R} = \lambda_{i,D} = \lambda_{i,A} = 0$. Allowing some electors in this way to have preferences that do not depend on the post-election policy essentially generalizes the theories of Alesina and Rosenthal (1995; 1996) and Mebane (2000), which assume that all voters respond to expected policy-related losses.

An elector's preference between voting for the Democrat and voting for the Republican depends on which choice produces the smaller policy-related loss. Using $\bar{V}_{i,V}$ to denote the proportion of electors *i*

[6] In Mebane's (2000) coordinating model, the weight each voter places on the expected policy-related loss from each party depends on the voter's retrospective evaluation of the national economy (see Mebane's equations 3 and 16). In alternative specifications, not reported here, estimation of the stochastic choice model (see equations 12a–c, 13 and 14) showed no evidence of such dependence in the expected policy-related losses of midterm electors. Hence we have simplified the definition of the midterm theoretical model.

expects to vote, including $i$, let $\bar{H}_{i,R} = \bar{R}_{i,R}/\bar{V}_{i,V}$ denote the proportion of the national vote received by Republican House candidates if $i$ chooses the Republican running in $i$'s district, and let $\bar{H}_{i,D} = \bar{R}_{i,D}/\bar{V}_{i,V}$ denote the proportion received by Republican House candidates if $i$ chooses the Democrat. $\bar{H}_{i,R} - \bar{H}_{i,D} = (N\bar{V}_{i,V})^{-1}$ so that for large $N$, $\lambda_{i,R} - \lambda_{i,D}$ is well approximated by $(N\bar{V}_{i,V})^{-1} d\lambda_i/d\bar{H}_i$.[7] If $(N\bar{V}_{i,V})^{-1} d\lambda_i/d\bar{H}_i > 0$, then for policy $i$ prefers the Democrat.

An elector's preferences between voting for one of the candidates and not voting likewise depend on which one minimizes $\lambda_i$. Using $\bar{V}_{i,A} = \bar{V}_{i,V} - 1/N$ to denote the proportion of electors $i$ expects to vote, excluding $i$, let $\bar{H}_{i,A} = (\bar{R}_{i,R} - 1/N)/\bar{V}_{i,A}$ denote the proportion of the national vote $i$ expects Republican House candidates to receive if $i$ does not vote. Then $(N\bar{V}_{i,A})^{-1}(1 - \bar{H}_{i,R}) d\lambda_i/d\bar{H}_i$ and $-(N\bar{V}_{i,A})^{-1}\bar{H}_{i,D} d\lambda_i/d\bar{H}_i$ respectively approximate $\lambda_{i,R} - \lambda_{i,A}$ and $\lambda_{i,D} - \lambda_{i,A}$.[8] Positive values correspond to greater policy-related losses from voting.

We can express a strategy for elector $i$ as a random variable $Y_i$ that takes values on the choice set $K = \{D, R, A\}$, where $D$ corresponds to voting for the Democrat, $R$ to voting for the Republican and $A$ to not voting. Let continuous random variables $\xi_{i,A}$, $\xi_{i,D}$ and $\xi_{i,R}$ represent gains or losses that $i$ experiences in addition to $\lambda_i$ if $i$, respectively, does not vote, votes for the Democrat and votes for the Republican. The total loss for $i$ from the election is then:

$$\tilde{\lambda}_i = \begin{cases} \lambda_{i,D} + \xi_{i,D}, & \text{if } i \text{ votes for the Democrat} \\ \lambda_{i,R} + \xi_{i,R}, & \text{if } i \text{ votes for the Republican} \\ \lambda_{i,A} + \xi_{i,A}, & \text{if } i \text{ does not vote .} \end{cases} \tag{5}$$

[7] Obviously, $\lambda_{i,R} - \lambda_{i,D} = (\bar{H}_{i,R} - \bar{H}_{i,D})(\lambda_{i,R} - \lambda_{i,D})/(\bar{H}_{i,R} - \bar{H}_{i,D})$, if $\bar{H}_{i,R} - \bar{H}_{i,D} > 0$. But if $\bar{H}_{i,R} - \bar{H}_{i,D}$ is very small, then $(\lambda_{i,R} - \lambda_{i,D})/(\bar{H}_{i,R} - \bar{H}_{i,D}) \approx d\lambda_i/d\bar{H}_i$.

[8] $\lambda_{i,R} - \lambda_{i,A} = (\bar{H}_{i,R} - \bar{H}_{i,A})(\lambda_{i,R} - \lambda_{i,A})/(\bar{H}_{i,R} - \bar{H}_{i,A})$ and $(\bar{H}_{i,R} - \bar{H}_{i,A}) = (1 - \bar{H}_{i,R})/(N\bar{V}_{i,A})$ give $\lambda_{i,R} - \lambda_{i,A} \approx (N\bar{V}_{i,A})^{-1}(1 - \bar{H}_{i,R}) d\lambda_i/d\bar{H}_i$. Similarly, $(\bar{H}_{i,A} - \bar{H}_{i,D}) = \bar{H}_{i,D}/(N\bar{V}_{i,A})$ gives $(\bar{H}_{i,D} - \bar{H}_{i,A})(\lambda_{i,D} - \lambda_{i,A})/(\bar{H}_{i,D} - \bar{H}_{i,A}) \approx -(N\bar{V}_{i,A})^{-1}\bar{H}_{i,D} d\lambda_i/d\bar{H}_i$.

Observe that $d\lambda_i/d\bar{H}_i = w_{Ci}$, where:

$$w_{Ci} = \begin{cases} q(\theta_{Di} - \theta_{Ri})(1-\alpha)|\theta_i - \tilde{\theta}_i|^{q-1}\,\mathrm{sgn}(\theta_i - \tilde{\theta}_i)\,, & \text{if } \varsigma_i = 1 \\ 0\,, & \text{if } \varsigma_i = 0\,, \end{cases}$$

with $\mathrm{sgn}(x) = -1$ if $x < 0$, $\mathrm{sgn}(x) = 0$ if $x = 0$, and $\mathrm{sgn}(x) = 1$ if $x > 0$. Defining:[9]

$$\kappa_{i,D} = -(N\bar{V}_{i,A})^{-1}\bar{H}_{i,D}w_{Ci} + \xi_{i,D} \tag{6a}$$

$$\kappa_{i,R} = (N\bar{V}_{i,A})^{-1}(1 - \bar{H}_{i,R})\,w_{Ci} + \xi_{i,R} \tag{6b}$$

$$\kappa_{i,A} = \xi_{i,A}\,, \tag{6c}$$

$i$'s strategy is:

$$Y_i = \underset{h \in K}{\mathrm{argmin}}\,\kappa_{i,h}\,. \tag{7}$$

Because $\kappa_{i,D}$ and $\kappa_{i,R}$ depend on both $\bar{V}_i$ and $\bar{H}_i$, the best choice for each elector who has $\varsigma_i = 1$ depends on what other electors are expected to do. $Y_i$ is an equilibrium only if it minimizes $\tilde{\lambda}_i$ when each elector $i$ assumes that everyone else is using the same rule and only if it is supported by every $i$ believing "mutually consistent" (Mebane 2000, 41) values for $\bar{H}_i \in \{\bar{H}_{i,D}, \bar{H}_{i,R}, \bar{H}_{i,A}\}$ and $\bar{V}_i \in \{\bar{V}_{i,V}, \bar{V}_{i,A}\}$.

We make common knowledge assumptions similar to those of Mebane (2000). The values of the parameters of $\tilde{\lambda}_i$ and the joint probability distribution of the variables in $\tilde{\lambda}_i$, $i = 1, \ldots, N$, are common knowledge. It is common knowledge that for every other elector $j \neq i$, all that each elector $i$ knows about the variables is that distribution. It is common knowledge that every $i$ acts to minimize $\tilde{\lambda}_i$, knowing the values of its own variables. Consequently it is common knowledge that, for some realization of the variables, (7) is every elector's choice rule.

[9] Notice that $(N\bar{V}_{i,A})^{-1}(1 - \bar{H}_{i,R} + \bar{H}_{i,D}) = (N\bar{V}_{i,A})^{-1}[1 - (N\bar{V}_{i,V})^{-1}] = (N\bar{V}_{i,V})^{-1}$.

To define the probability distribution, we assume that for every elector $i$ there is an ordered set $Z_i$ that includes $\varsigma_i$, $\theta_i$, $\vartheta_{Di}$, $\vartheta_{Ri}$, $\vartheta_{PDi}$ or $\vartheta_{PRi}$, and a component $z_{i,h}$ of each $\xi_{i,h}$. The vector $\varepsilon_i \equiv (\varepsilon_{i,D}, \varepsilon_{i,R}, \varepsilon_{i,A})' = (\xi_{i,D}, \xi_{i,R}, \xi_{i,A})' - (z_{i,D}, z_{i,R}, z_{i,A})'$ is identically and independently distributed across $i = 1, \ldots, N$, with a generalized extreme value (GEV) distribution denoted $F_H$. $Z_i$ is independent of $\varepsilon_i$. There are $M \ll N$ mutually exclusive and exhaustive sets of electors, denoted $E_k$, $k = 1, \ldots, M$, each containing $M_k$ electors. For every $i \in E_k$, $Z_i$ takes values in a set $\tilde{Z}$ and is generated, independently across $i$, by a process that has probability measure $f_k$ with $\int_{\tilde{Z}} d\, f_k(Z_i) = 1$ and $\int_{\tilde{Z}} Z_i d\, f_k(Z_i)$ finite. $F_H$, $M$, $\tilde{Z}$ and $M_k$ and $f_k$, $k = 1, \ldots, M$, are common knowledge.

Because many of the costs (or benefits) of voting are the same regardless of which candidate an elector prefers, we assume that $\varepsilon_{i,R}$ and $\varepsilon_{i,D}$ covary but are independent of $\varepsilon_{i,A}$. To specify such a GEV distribution, we define:

$$x_{i,D} = -(N\bar{V}_{i,A})^{-1}\bar{H}_{i,D}w_{Ci} + z_{i,D} \tag{8a}$$

$$x_{i,R} = (N\bar{V}_{i,A})^{-1}(1 - \bar{H}_{i,R})\, w_{Ci} + z_{i,R} \tag{8b}$$

$$x_{i,A} = z_{i,A}\ , \tag{8c}$$

and using $v_{i,h} = \exp\{-x_{i,h}\}$:

$$G_i = \left(v_{i,D}^{1/1-\tau} + v_{i,R}^{1/1-\tau}\right)^{1-\tau} + v_{i,A}\ , \qquad 0 \le \tau < 1\ . \tag{9}$$

If $\varepsilon_{i,R}$ and $\varepsilon_{i,D}$ are independent, then $\tau = 0$. If $\bar{H}_{i,D}$, $\bar{H}_{i,R}$, $\bar{V}_{i,A}$ and $Z_i$ are known but $\varepsilon_i$ is known only to have the distribution defined by (9), then (7) implies choice probabilities:

$$\mu_{i,h} \equiv \Pr(Y_i = h \mid \bar{H}_{i,D}, \bar{H}_{i,R}, \bar{V}_{i,A}, Z_i) = \frac{v_{i,h}}{G_i}\frac{\partial G_i}{\partial v_{i,h}}\ , \quad h \in K \tag{10}$$

(McFadden 1978; Resnick and Roy 1990).

We use Mebane's (2000) method to characterize mutually consistent pairs $(\bar{H}_i, \bar{V}_i)$ in terms of common knowledge expections $(\bar{H}, \bar{V})$ that each elector $i$ has when each $i$ knows only which set $E_k$ it belongs to. In that case, setting $\bar{H}_{i,D} = \bar{H}_{i,R} = \bar{H}$ and $\bar{V}_{i,A} = \bar{V}$ in (8a) and (8b) and using:

$$\bar{\mu}_{k,h} \equiv \Pr(Y_i = h \mid i \in E_k, \bar{H}, \bar{V}) = \int_{\tilde{Z}} \mu_{i,h} d f_k(Z_i) , \quad h \in K , \tag{11}$$

the proportions of electors expected to vote for Republican and Democratic candidates are $\bar{R} = N^{-1} \sum_{k=1}^{M} M_k \bar{\mu}_{k,R}$ and $\bar{D} = N^{-1} \sum_{k=1}^{M} M_k \bar{\mu}_{k,D}$, hence $\bar{V} = \bar{R} + \bar{D}$ and $\bar{H} = \bar{R}/\bar{V}$. An argument similar to that of Mebane's (2000) Theorem 2 proves existence of a fixed point $(\bar{H}, \bar{V})$. Now let $\bar{\mu}_{k_i,h}$ denote $\bar{\mu}_{i,h}$ for $k$ such that $i \in E_k$. Let $y_{i,h}$ indicate the value of $Y_i$ of (7) when $i$ knows $Z_i$ and $\varepsilon_i$ but for other electors has only the common knowledge: $y_{i,h} = 1$ if $Y_i = h$, $y_{i,h} = 0$ if $Y_i \neq h$, $h \in K$. Define $\bar{R}_{iy_{i,R}} = \bar{R} + (y_{i,R} - \bar{\mu}_{k_i,R})/N$, $\bar{D}_{iy_{i,D}} = \bar{D} + (y_{i,D} - \bar{\mu}_{k_i,D})/N$, $\bar{V}_{iy_{i,R}y_{i,D}} = \bar{R}_{iy_{i,R}} + \bar{D}_{iy_{i,D}}$, and $\bar{H}_{iy_{i,R}y_{i,D}} = \bar{R}_{iy_{i,R}}/\bar{V}_{iy_{i,R}y_{i,D}}$. For $N$ and each $M_k$ large, a set of equilibrium choices $Y_i$ and expectations $(\bar{H}_i, \bar{V}_i)$, $i = 1, \ldots, N$, is given by the following.

**Theorem 1** *There is a coordinating elector equilibrium if, with all electors using the same fixed point* $(\bar{H}, \bar{V})$ *computed from common knowledge, each elector i has* $(\bar{H}_i, \bar{V}_i) = (\bar{H}_{iy_{i,R}y_{i,D}}, \bar{V}_{iy_{i,R}y_{i,D}})$ *and* $Y_i = h$, $h \in K$, *for whichever of the three possible pairs of values* $(\bar{H}_{iy_{i,R}y_{i,D}}, \bar{V}_{iy_{i,R}y_{i,D}})$ *corresponds to the smallest value of* $\tilde{\lambda}_i$*: either* $\bar{H}_i = \bar{H}_{i01}$, $\bar{V}_i = \bar{V}_{i,V} = \bar{V}_{i01}$ *and* $Y_i = D$; $\bar{H}_i = \bar{H}_{i10}$, $\bar{V}_i = \bar{V}_{i,V} = \bar{V}_{i10}$ *and* $Y_i = R$; *or* $\bar{H}_i = \bar{H}_{i00}$, $\bar{V}_i = \bar{V}_{i,A} = \bar{V}_{i00}$ *and* $Y_i = A$.

Proof is similar to that of Theorem 1 of Mebane (2000).

When a candidate runs unopposed, we assume that each elector in the affected district uses the strategy defined by (7), except conditioning on the pair of choices that are available. If a Democrat is running unopposed, elector $i$ conditions on the choice set $\{D, A\}$. If a Republican is running unopposed, $i$ conditions on $\{R, A\}$. If $\bar{H}_{i,D}$, $\bar{H}_{i,R}$, $\bar{V}_{i,A}$ and $Z_i$ are known but $\varepsilon_i$ is known only to have the distribution $F_H$, then the condi-

tional probabilities for $i$ to choose each alternative when, respectively, the Democrat and the Republican are unopposed are:

$$\mu_{i,h|\{D,A\}} \equiv \Pr(Y_i = h \mid \bar{H}_{i,D}, \bar{V}_{i,A}, Z_i, K = \{D,A\}) = \begin{cases} \dfrac{\mu_{i,A}}{\mu_{i,A}+\mu_{i,D}}, & h = A \\ \dfrac{\mu_{i,D}}{\mu_{i,A}+\mu_{i,D}}, & h = D \\ 0, & h = R \end{cases}$$

$$\mu_{i,h|\{R,A\}} \equiv \Pr(Y_i = h \mid \bar{H}_{i,R}, \bar{V}_{i,A}, Z_i, K = \{R,A\}) = \begin{cases} \dfrac{\mu_{i,A}}{\mu_{i,A}+\mu_{i,R}}, & h = A \\ \dfrac{\mu_{i,R}}{\mu_{i,A}+\mu_{i,R}}, & h = R \\ 0, & h = D\,, \end{cases}$$

where $\mu_{i,h}$ is defined by (10). Integrating over unknown data in a manner similar to (11), it is straightforward to redefine $\bar{R}$ and $\bar{D}$ so that the characterization of equilibrium goes through as in Theorem 1, with only minor changes.

## A Coordinating Model for Survey Data

With survey data we observe choices $Y_i \in K$ reported by each elector $i$ in a sample $S$ of size $n$, $i = 1, \ldots, n$, along with a number of other variables that affect electoral choices—a set of variables $Z_i$. Given $Z_i$ and a set of parameter values, we use (10) to compute choice probabilities $\hat{\mu}_{i,h}$. We adapt Mebane's (2000) method to compute values $(\tilde{\bar{H}}, \tilde{\bar{V}})$ for each set of parameter values. Let $S_{\{D,R,A\}}$ denote the subsample in districts with a fully contested race, $S_{\{D,A\}}$ the subsample with an unopposed Democrat and $S_{\{R,A\}}$ the subsample with an unopposed Republican. Given sampling weights $1/\omega_i$ and values $\hat{\mu}_{i,h}$, we compute:

$$\tilde{\bar{R}} = \left( \sum_{i \in S_{\{D,R,A\}}} \frac{\hat{\mu}_{i,R}}{\omega_i} + \sum_{i \in S_{\{R,A\}}} \frac{\hat{\mu}_{i,R|\{R,A\}}}{\omega_i} \right) \Bigg/ \left( \sum_{i=1}^{n} 1/\omega_i \right) ,$$

$$\hat{\tilde{D}} = \left( \sum_{i \in S_{\{D,R,A\}}} \frac{\hat{\mu}_{i,D}}{\omega_i} + \sum_{i \in S_{\{D,A\}}} \frac{\hat{\mu}_{i,D|\{D,A\}}}{\omega_i} \right) \Big/ \left( \sum_{i=1}^{n} 1/\omega_i \right) ,$$

$\hat{\tilde{V}} = \hat{\tilde{R}} + \hat{\tilde{D}}$ and $\hat{\tilde{H}} = \hat{\tilde{R}}/\hat{\tilde{V}}$.

To define the empirical model, in (8a–c) we set $\bar{H}_i = \hat{\tilde{H}}$ and $\bar{V}_i = \hat{\tilde{V}}$ and substitute $b_C \hat{\tilde{V}}^{-1}$ for $(N\bar{V})^{-1}$, where $b_C > 0$ is a constant parameter:

$$x_{i,D} = -b_C \hat{\tilde{V}}^{-1} \hat{\tilde{H}} w_{Ci} + z_{i,D} \tag{12a}$$

$$x_{i,R} = b_C \hat{\tilde{V}}^{-1} \left(1 - \hat{\tilde{H}}\right) w_{Ci} + z_{i,R} \tag{12b}$$

$$x_{i,A} = z_{i,A} \, . \tag{12c}$$

Because the GEV distribution is implicitly standardized, $b_C$ equals $N^{-1}$ divided by the standard deviation of the elements of the unstandardized disturbance.[10] We also use a technical reparameterization of (9) in order to decrease the correlation between the estimate of $\tau$ and the estimates of the parameters of $x_{i,D}$ and $x_{i,R}$.[11] Instead of (9), we use $G_i$ in the form:

$$G_i = (v_{i,D} + v_{i,R})^{1-\tau} + v_{i,A} \, , \qquad 0 \leq \tau < 1 \, . \tag{13}$$

Given $T \geq 1$ samples $S_t$ with subsets $S_{\{D,R,A\}t}$, $S_{\{D,A\}t}$ and $S_{\{R,A\}t}$, the log-likelihood function is:

$$L = \sum_{t=1}^{T} \left( \sum_{i \in S_{\{D,R,A\}t}} \sum_{h \in K} y_{i,h} \log \mu_{i,h} + \sum_{i \in S_{\{D,A\}t}} \sum_{h \in \{D,A\}} y_{i,h} \log \mu_{i,h|\{D,A\}} \right.$$
$$\left. + \sum_{i \in S_{\{R,A\}t}} \sum_{h \in \{R,A\}} y_{i,h} \log \mu_{i,h|\{R,A\}} \right) \, . \tag{14}$$

[10] NES survey respondents may overreport the frequency with which they vote. Among the 9,639 cases from years 1978–98 that we use to compute the parameter estimates reported in Table 1, the $\omega_i$-weighted percentage reporting having voted is, by year: 47.7, 55.1, 48.1, 43.8, 55.8, 45.5. These values are the same as the estimates for $\hat{\tilde{V}}$ reported in Table 4. Slight inflation in $\hat{\tilde{V}}$ should induce slight inflation in $\hat{b}_C$, via the ratio $\hat{b}_C/\hat{\tilde{V}}$.

[11] Using (9), correlations between $\hat{\tau}$ and parameter estimates in $z_{i,D}$ and $z_{i,R}$ approach $-1$ as $\tau \to 1$ for parameters that have positive values and 1 for parameters that are negative.

where $y_{i,h} = 1$ if $Y_i = h$ and $y_{i,h} = 0$ if $Y_i \neq h$, $h \in K$. Iterations to determine the parameter values include recomputation of each year's $(\hat{\bar{H}}, \hat{\bar{V}})$ values at each iteration. The estimation algorithm is similar to the one used in Mebane (2000). If the likelihood function is correct and a stability condition (Mebane 2000, 43–44) is satisfied, the algorithm converges to parameter estimates and $(\hat{\bar{H}}, \hat{\bar{V}})$ values that characterize the choices electors make in equilibrium.

We check whether the estimated parameters satisfy conditions necessary for coordination to exist. First we test whether $\alpha < 1$: if $\alpha = 1$, then $w_{Ci} = 0$ so that electors' strategies depend on neither $\hat{\bar{H}}$ nor $\hat{\bar{V}}$ and there is no coordination. We use confidence interval estimates and likelihood-ratio (LR) tests to check whether $\alpha = 1$ can be rejected for each year of our data. The LR tests have a nonregularity because the coordinating model does not depend on $\rho$ when $\alpha = 1$. We use equation (3.4) of Davies (1987, 36) to adjust the significance probabilities of the test statistics. Also necessary for the choice model to describe coordination are that $q > 0$ and that $b_C > 0$: $q = 0$ implies $w_{Ci} = 0$; and $b_C = 0$ implies that $w_{Ci}$, $\hat{\bar{H}}$ and $\hat{\bar{V}}$ do not affect $i$'s choice.

## A Nonstrategic Moderating Model

To test further whether electors coordinate, we define an empirical model that applies to midterm elections the core idea in Fiorina's (1988; 1992, 73–81) nonstrategic theory of institutional balancing by voters in presidential-year elections. Fiorina's theory considers a situation in which there are two parties. Each voter has a choice between two candidates for president and two candidates for the legislature, one from each party. The core idea of the theory is that each voter chooses candidates based on the mix of party control of the presidency and the legislature, either unified or divided government, that would produce a policy outcome nearest the elector's ideal point. In so choosing, it does not matter to the voter how likely it is that the Democratic presidential candidate will win, nor does the voter care what the Democratic party's share of the legislature is likely to be. That the voter ignores the expected election outcome is what makes the theory not a theory of strategic behavior: no voter's choice depends on the choice or likely choice of any

other voter.

We apply the core idea of Fiorina's theory to midterm elections by assuming that at midterm each elector $i$ with $\varsigma_i = 1$ treats the party of the president as fixed in forming a preference between unified or divided government, but otherwise ignores the expected election outcome. Using the party policy positions $\theta_{Di}$ and $\theta_{Ri}$ defined in (1) and (2), the post-election policies $i$ expects if there is a Democratic majority in the House are:

$$\tilde{\theta}_{Di} = \begin{cases} \theta_{Di}, & \text{if Democrat is president} \\ \alpha\theta_{Ri} + (1-\alpha)\theta_{Di}, & \text{if Republican is president ,} \end{cases} \tag{15}$$

and the post-election policies $i$ expects if there is a Republican majority are:

$$\tilde{\theta}_{Ri} = \begin{cases} \alpha\theta_{Di} + (1-\alpha)\theta_{Ri}, & \text{if Democrat is president} \\ \theta_{Ri}, & \text{if Republican is president ,} \end{cases} \tag{16}$$

with $0 \leq \alpha \leq 1$. The nonstrategic theory says that, other things equal, $i$ votes for the Democrat instead of the Republican if $i$'s ideal point is closer to the policy expected with a Democratic majority than to the policy expected with a Republican majority, i.e., if $|\theta_i - \tilde{\theta}_{Di}| < |\theta_i - \tilde{\theta}_{Ri}|$. If $|\theta_i - \tilde{\theta}_{Di}| > |\theta_i - \tilde{\theta}_{Ri}|$, then $i$ votes for the Republican instead of the Democrat.

In the nonstrategic model there is policy moderation only if $0 < \alpha < 1$. If $\alpha = 1$, post-election policy always equals the position of the president's party; the equality $|\theta_i - \tilde{\theta}_{Di}| = |\theta_i - \tilde{\theta}_{Ri}|$ always holds, so policy comparisons have no effect on midterm vote choices. If $\alpha = 0$, the president is irrelevant to post-election policy; $\tilde{\theta}_{Di} = \theta_{Di}$ and $\tilde{\theta}_{Ri} = \theta_{Ri}$ regardless of who is president. The comparison between $|\theta_i - \tilde{\theta}_{Di}|$ and $|\theta_i - \tilde{\theta}_{Ri}|$ reduces to a comparison between $|\theta_i - \theta_{Di}|$ and $|\theta_i - \theta_{Ri}|$. There is no moderation but rather a simple choice between the parties' alternative policies.

To let the nonstrategic model include the possibility of not voting, we use the log-likelihood function

of (14), with $\mu_{i,h}$ defined by (10) and $G_i$ in the form of (13), based on modified definitions of $x_{i,h}$, $h \in K$. Defining:

$$w_{NSi} = \begin{cases} |\theta_i - \tilde{\theta}_{Ri}|^q - |\theta_i - \tilde{\theta}_{Di}|^q, & \text{if } \varsigma_i = 1 \\ 0, & \text{if } \varsigma_i = 0\,, \end{cases}$$

with $0 < q < +\infty$, we define:

$$x_{i,D} = -b_{NS} w_{NSi} + z_{i,D} \tag{17a}$$

$$x_{i,R} = b_{NS} w_{NSi} + z_{i,R} \tag{17b}$$

$$x_{i,A} = z_{i,A}\,, \tag{17c}$$

with $b_{NS} \geq 0$. If $b_{NS} > 0$, then $\partial \mu_{i,D} / \partial w_{NSi} > 0$ and $\partial \mu_{i,R} / \partial w_{NSi} < 0$.

We use a nonnested hypothesis test derived by Vuong (1989) to compare the coordinating model to the nonstrategic model.[12] The models may fit the observed choices about equally well in terms of LR statistics because $w_{Ci}$ and $w_{NSi}$ have the same sign if the expected post-election policy in the coordinating model equals the average of the post-election policies expected in the nonstrategic model, that is, if $\tilde{\theta}_i = (\tilde{\theta}_{Di} + \tilde{\theta}_{Ri})/2$.

## Definitions of Empirical Choice Attributes

To estimate both the coordinating and the nonstrategic models we use data from the NES Post-Election Surveys of years 1978, 1982, 1986, 1990, 1994 and 1998 (Miller and the National Election Studies 1979; 1983; 1987; Miller, Kinder, Rosenstone and the National Election Studies 1992; Rosenstone, Miller, Kinder and the National Election Studies 1995; Sapiro, Rosenstone and the National Election Studies 1999). We

[12] With $z_{i,D}$, $z_{i,R}$ and $z_{i,A}$ specified the same way in both models, the models have the same number of free parameters. We use Vuong's (1989, 320) test for overlapping models. Vuong's asymptotic normal distribution (6.4) applies unless $b_C = b_{NS} = 0$. We use the sequential method of first testing separately whether $b_C = 0$ and $b_{NS} = 0$.

pool all the data, with some parameters varying by year.

We use NES seven-point scales and the method described by Mebane (2000, 55) to determine values of $\theta_i$, $\vartheta_{Di}$, $\vartheta_{Ri}$, and $\vartheta_{PDi}$ or $\vartheta_{PRi}$ for each $i$.[13] If an elector $i$ does not provide values for the policy position variables ($\theta_i$, $\vartheta_{Di}$, $\vartheta_{Ri}$, and $\vartheta_{PDi}$ or $\vartheta_{PRi}$), we assume that $i$ does not experience policy-related losses, so that such losses do not affect the choices $i$ makes. We set $\varsigma_i = 0$ if there is not at least one complete set of policy position variable values for $i$ and $\varsigma_i = 1$ if at least one complete set exists.[14] We include $\varsigma_i$ in $z_{i,A}$. To allow for the possibility of ideologically based mobilization to vote, we also include each elector's ideal point in $z_{i,A}$, using the form $\varsigma_i\theta_i$ to switch the effect off when $i$ lacks a complete set of policy position values.

Evidence that retrospective economic evaluations matter in presidential elections is strong, but systematic direct effects seem not to exist for candidate choices in House elections at midterm.[15] Effects on turnout decisions also have also been found to be weak (Arcelus and Meltzer 1975; Fiorina 1978). To measure retrospective evaluations we use responses to a question asking whether the national economy has gotten worse or better over the past year.[16] We include the variable, $\mathrm{EC}_i$, in all three sets of attributes $z_{i,h}$, multiplied by $\mathrm{PP}_i = 1$ if Republican; $\mathrm{PP}_i = -1$ if Democrat.

Party identification has long been known to affect vote choices (e.g. Campbell and Miller 1957) and to be associated both with varying rates of voter turnout (Campbell 1966; Converse 1966; Miller 1979) and with policy preferences and perceptions (Brady and Sniderman 1985). We measure party identification with six dummy variables that correspond to the levels of the NES seven-point scale measure of partisanship,

[13] Here are the NES variables for each set of scales for each year. "Reversed" indicates an item for which we reversed the original 1-to-7 ordering. In years 1982–98 respondents who initially declined to place themselves on the Liberal/Conservative scale, or who initially described themselves as "moderate" on the scale, were asked a follow-up question; we used those responses to categorize them as either "slightly liberal," "moderate" or "slightly conservative." **1978**: 357–360; 365–368; 373–376; 381–384; 389–392; 399–402. **1982**: 393, 394, 404-406; 407–410; 415–418; 425–428; 435–438; reversed 443–446. **1986**: 385–387, 393, 394; 405, 406, 412, 413; 428, 429, 435, 436; reversed 448, 449, 455, 456. **1990**: 406–408, 413, 414; 439, 440, 443, 444; 447–450; reversed 452, 453, 456, 457. **1994**: 839–841, 847, 848; 930, 931, 934, 935; 936–939; reversed 940, 941, 944, 945; 950, 951, 954, 955. **1998** (omitting the prefix '980'): 399, 401, 403, 411, 412; 448, 449, 453, 454; 457, 458, 460, 461; reversed 463, 464, 468, 469.

[14] There is a "complete set" if $i$ placed all four of the referents for any single scale topic, e.g., placing self, the parties and the president on the scale for Rights of the Accused (vars 365–368) in 1978. Among the cases used to compute the parameter estimates reported in Table 1, the percentage with $\varsigma_i = 0$ is, by year, 14.2, 10.9, 10.9, 12.2, 4.8, and 5.0.

[15] Erikson (1990) reviews the literature and data through the late 1980s. Relevant work appearing since that time includes Alesina and Rosenthal (1989), Jacobson (1989) and Born (1991).

[16] The NES variables for each year are 338 (1978), 328 (1982), 373 (1986), 423 (1990), 909 (1994), 980419 (1998). Coding is the same as in Mebane (2000, 55).

using "Strong Democrat" as the reference category: $\text{PID}_{\text{D}i}$, $\text{PID}_{\text{ID}i}$, $\text{PID}_{\text{I}i}$, $\text{PID}_{\text{IR}i}$, $\text{PID}_{\text{R}i}$ and $\text{PID}_{\text{SR}i}$.[17] We include the variables in all three sets of attributes.

To take incumbent-related effects into account, we use a pair of dummy variables that indicate whether a Democratic or Republican incumbent is running for reelection: if a Democrat is running for reelection in elector *i*'s congressional district, then $\text{DEM}_i = 1$, otherwise $\text{DEM}_i = 0$; if a Republican is running for reelection, $\text{REP}_i = 1$, otherwise $\text{REP}_i = 0$.[18] In the choice between candidates we expect to see an incumbency advantage.[19] Because the presence of an incumbent usually means the absence of a vigorous campaign, the probability of not voting should be higher when an incumbent is running than when there is an open seat.[20]

We include among the attributes of not voting a measure of subjective political efficacy ($\text{EFF}_i$), defined as the average of responses to two survey items (Abramson and Aldrich 1982; Balch 1974).[21] The responses are coded $-1$ for "agree" and 1 for "disagree."[22] Among the attributes of not voting we also include four demographic variables that are frequently observed to have strong effects on voter turnout (Born 1990): education, age, marital status, and time at current residence. Three dummy variables measure education: high school diploma, 12+ years of school, no higher degree ($\text{ED1}_i$); AA or BA level degrees, or 17+ years school and no higher degree ($\text{ED2}_i$); advanced degree, including LLB ($\text{ED3}_i$). The reference category for the dummy variables is: 11 grades or less, no diploma or equivalency. Age we measure as time in years, minus 40 ($\text{AGE}_i$). Marital status is a dummy variable ($\text{MAR}_i$) coded one for "married and living with spouse (or spouse in service)" and zero otherwise. Time at current residence ($\text{RES}_i$) is measured in whole years for

[17] NES variables are 433 (1978), 291 (1982), 300 (1986), 320 (1990), 655 (1994), 980339 (1998).

[18] NES variables are 4 (1978), 6 (1982), 43 (1986), 58 (1990), 17 (1994), 980065 (1998).

[19] Eubank and Gow (1983) and Gow and Eubank (1984) document pro-incumbent biases in 1978 and 1982 NES data. Our incumbency effects estimates may be exaggerated (cf. Eubank 1985).

[20] Including dummy variables based on Jacobson's (1989) measure of candidate quality—whether a candidate has ever held elective office—improves the fit to the data but does not change any of the results of primary interest in the analysis.

[21] The items are "have say" and "don't care much." NES variables are 351 and 354 (1978), 531 and 532 (1982), 549 ("don't care," 1986), 509 and 508 (1990), 1038 and 1037 (1994), 980525 and 980524 (1998).

[22] In 1990, 1994 and 1998 there are five responses ranging from "agree strongly" to "disagree strongly," coded, in order, $-1$, $-.5$, 0, .5 and 1. In 1986 only the "don't care" item is available. In 1986, half the sample was not asked the "don't care" question. We use a proxy variable to replace missing values for variable 549, constructed by summing the values of four variables: 62, 64 and 66, each being coded 1 if yes and 0 otherwise; and 59, coded 1 if "very interested" or "somewhat interested," otherwise coded 0. Respondents with INDEX $= 4$ are assigned the value 1, those with INDEX $< 4$ are assigned $-1$. Support for the proxy comes from a logistic regression model for the binary responses to variable 549 in the half-sample that was asked that question, with INDEX as the regressor: the MLEs give $\Pr(\text{var. 549 = disagree}) > .5$ only if INDEX $= 4$.

durations between three and nine years, otherwise it is coded using the same values used by Born (1990): less than 6 months, .25; 6–12 months, or 1 year, .75; 13–24 months, or 2 years, 1.5; ten years or more, 10.[23]

The definitions of the attributes of the choices are

$$z_{i,D} = c_0 - c_{DEM}\mathrm{DEM}_i + c_{EC}\mathrm{PP}_i\mathrm{EC}_i + c_D\mathrm{PID}_{\mathrm{D}i} + c_{ID}\mathrm{PID}_{\mathrm{ID}i} + c_I\mathrm{PID}_{\mathrm{I}i} + c_{IR}\mathrm{PID}_{\mathrm{IR}i} + c_R\mathrm{PID}_{\mathrm{R}i} + c_{SR}\mathrm{PID}_{\mathrm{SR}i} \tag{18a}$$

$$z_{i,R} = -c_0 - c_{REP}\mathrm{REP}_i - c_{EC}\mathrm{PP}_i\mathrm{EC}_i - c_D\mathrm{PID}_{\mathrm{D}i} - c_{ID}\mathrm{PID}_{\mathrm{ID}i} - c_I\mathrm{PID}_{\mathrm{I}i} - c_{IR}\mathrm{PID}_{\mathrm{IR}i} - c_R\mathrm{PID}_{\mathrm{R}i} - c_{SR}\mathrm{PID}_{\mathrm{SR}i} \tag{18b}$$

$$z_{i,A} = d_0 + d_1\mathrm{EFF}_i + d_2\mathrm{ED1}_i + d_3\mathrm{ED2}_i + d_4\mathrm{ED3}_i + d_5\mathrm{AGE}_i + d_6\mathrm{MAR}_i + d_7\mathrm{RES}_i + d_\varsigma(1-\varsigma_i) + d_\theta\varsigma_i\theta_i + d_{REP}\mathrm{REP}_i + d_{DEM}\mathrm{DEM}_i + d_{EC}\mathrm{PP}_i\mathrm{EC}_i + d_D\mathrm{PID}_{\mathrm{D}i} + d_{ID}\mathrm{PID}_{\mathrm{ID}i} + d_I\mathrm{PID}_{\mathrm{I}i} + d_{IR}\mathrm{PID}_{\mathrm{IR}i} + d_R\mathrm{PID}_{\mathrm{R}i} + d_{SR}\mathrm{PID}_{\mathrm{SR}i}\,, \tag{18c}$$

where parameters $c_0$, $c_{EC}$, $d_0$, $d_{EC}$ and $d_\theta$ are constant in each year, and the remaining parameters are constant over all years. Because, in (9), an increase in $z_{i,h}$ implies a decrease in $v_{i,h}$, a variable that increases the probability of choosing $h \in K$ will have a negative coefficient. The effects measured by the $c$ parameters primarily contrast the candidate alternatives to one another, while the $d$ parameters measure effects that contrast the choice not to vote to the choice to vote. For the attributes of the candidates, parameter signs should be $c_0 < 0$ and $c_{EC}$, $c_{DEM}$, $c_{REP}$, $c_D$, $c_{ID}$, $c_I$, $c_{IR}$, $c_R$, $c_{SR} > 0$. For the attributes of the not voting alternative, parameter signs should be $d_\varsigma$, $d_{REP}$, $d_{DEM}$, $d_D$, $d_{ID}$, $d_I$, $d_{IR}$, $d_R < 0$, and $d_1$, $d_2$, $d_3$, $d_4$, $d_5$, $d_6$, $d_7 > 0$. The signs of $d_0$, $d_\theta$ and $d_{EC}$ are indeterminate.

To measure choices $y_{i,h}$ we use individuals' self reports.[24] The sample size of electors used, pooled over the six NES surveys, is 9,639 (by year, 1978–98, the sizes are 1,814, 1,226, 1,972, 1,833, 1,648, 1,146).

[23] NES variables for education, age, marital status and residency are 513, 504, 505, 628 (1978), 542, 535, 536, 760 (1982), 602, 595, 598, 753 (1986), 557, 552, 553, 684 (1990), 1209, 1203, 1204, 1426 (1994), 980577, 980572, 980573, 980662 (1998).

[24] NES variables are 470, 473 and 474 (1978), 501, 505 and 506 (1982), 261, 265 and 267 (1986), 279, 287 and 289 (1990), 601, 612 and 614 (1994), and 980303, 980311 and 980313 (1998).

Only those who did not vote or who voted for either a Democrat or a Republican are included. Of the 10,954 respondents in all the NES data, 1,315 were omitted due to missing or invalid data.[25]

**Model Estimates and Results of Tests of Coordination**

The coordinating and nonstrategic models produce similar results. Maximum likelihood estimates [MLEs] and standard errors [SEs] for the parameters of the models, using observed attribute specifications (12a–c) and (17a–c) with $G_i$ defined by (13), appear in Table 1.[26] All of the parameters that have the same interpretation in both models have statistically indistinguishable estimates. The MLEs for $c_{EC}$ are near zero for every year except 1990, suggesting that for the most part retrospective economic evaluations do not affect choices between candidates.[27] Except for 1994, the MLEs for $d_{EC}$ are statistically insignificant, so that retrospective economic evaluations appear also to have no systematic effect on the choice not to vote. The MLEs for the party identification dummy variables show the familiar effects of party identification on candidate choices and turnout. The MLEs for $c_{DEM}$ and $c_{REP}$ point to a substantial incumbent advantage, while the MLEs for $d_{DEM}$ and $d_{REP}$ show losses from not voting to be smaller when the incumbent is running for reelection. Greater subjective political efficacy, higher education, greater age, being married and having lived longer at one's current residence all increase the loss from not voting and so increase the probability of voting. An elector who does not report at least one complete set of policy position values ($\varsigma_i = 0$) has a substantially smaller loss from not voting than does an elector who does report policy positions; so the elector who lacks policy positions is much more likely not to vote. For 1994 and 1998 there is a significant tendency for electors who have higher values of $\theta_i$ to be more likely to vote than electors who have lower values of $\theta_i$: conservative electors were especially mobilized in those two elections.

*** Table 1 about here ***

[25] In the NES data, $\omega_i$ is the number of eligible adults in each household, multiplied by a time-series weight in 1994. We rescaled each number of adults and time-series weight variable to give each a mean of 1.0 over the whole of each survey sample. NES variables are 38 (1978), 53 (1982), 14 (1986), 29 (1990), 6 and 58 (1994), 980035 (1998).

[26] Over all years for the coordinating model, the percent correctly classified by "predicting" for each observation the choice that has the highest probability using the parameter MLEs is 67.3% (by year, 64.2%, 66.4%, 68.2%, 68.7%, 66.7%, 70.1%), and the average probability of the choice actually made is .57 (by year, .54, .56, .58, .59, .56, .59).

[27] The 95% confidence interval for $c_{EC,90}$, computed as in Table 3, is $(-.001, .558)$.

The coordinating model passes the tests of the conditions necessary for it to describe coordinating behavior. Table 2 reports the LR test statistics for the constraint $\alpha = 1$, imposed separately for each year. The constraint is rejected in every year. The 95% confidence intervals shown in Table 3 support the same conclusions.[28] Regarding the other necessary conditions, 95% confidence intervals computed as in Table 3 show $q$ (1.28, 1.81) and $b_C$ (1.10, 1.90) to be positive and bounded well away from zero.

*** Tables 2 and 3 about here ***

For most years the MLEs for the nonstrategic model do not support the theory of nonstrategic institutional balancing to produce policy moderation. Only two of the six MLEs for $\alpha$ ($\hat{\alpha}_{78}$ and $\hat{\alpha}_{86}$) are statistically distinguishable from zero; $\hat{\alpha}_{82} = \hat{\alpha}_{90} = \hat{\alpha}_{94} = \hat{\alpha}_{98} = 0$. Rather than moderating, the estimates suggest that in most years electors are making direct choices between the parties' alternative policies.

The log-likelihood of the coordinating model ($-6824.7$) is not much greater than that of the nonstrategic model ($-6825.4$). Nonetheless the nonnested hypothesis test of Vuong (1989) rejects the nonstrategic model as an alternative to the coordinating model.[29]

## Moderation, Institutional Balancing and the Midterm Cycle

In the coordinating model, every elector anticipates a post-election policy that is intermediate between the parties' positions, unless $\alpha = 1$. In this sense, the MLEs suggest that all electors are using moderating strategies. The coordinating model MLEs for $\alpha$ are less than .5 in every year except 1986 (see Table 1), suggesting that electors expected the president to be weaker than the House in determining post-midterm policy. Based on the estimates for $\hat{H}$, in Table 4, the position of the House was expected to be closer to the Democratic position in 1978, 1982, 1986 and 1990, closer to the Republican position in 1994 and 1998.

[28] Table 1 shows $\alpha_{90}$, $\alpha_{94}$, $\rho_{78}$, $\rho_{86}$, $\rho_{90}$ and $\rho_{98}$ to have MLEs equal to either 0.0 or 1.0, on conceptual boundaries of the parameter space. We bootstrap (20,000 resamples) the score vectors of the MLEs of Table 1 to estimate quantiles of the asymptotic distribution implied by the hypothesis that $\alpha_{90} = \alpha_{94} = \rho_{78} = 0$ and $\rho_{86} = \rho_{90} = \rho_{98} = 1$, which is a mixture of 64 censored multivariate normal distributions (Self and Liang 1987), and hence estimate the confidence intervals of Table 3.

[29] The MLEs and SEs in Table 1 clearly reject both $b_C = 0$ and $b_{NS} = 0$. The likelihood ratio statistic for the nonnested test is $LR_n = 16.50197$ (Vuong 1989, eqn. 3.1). The asymptotic variance estimate is $\hat{\omega}_n^2 = 0.0014981 - 0.0017120^2 = .0014952$ (Vuong 1989, eqn. 4.2). We compute both $LR_n$ and $\hat{\omega}_n^2$ with adjustments for sampling weights. Using the distribution of Vuong (1989, eqn. 6.4), the test statistic is $n^{-1/2} LR_n / \hat{\omega}_n = 4.3$, which is well above the critical value for conventional test levels.

*** Table 4 about here ***

The moderating mechanism of the coordinating model is capable of generating a midterm cycle of the kind emphasized by Alesina and Rosenthal (1989; 1995; 1996), in which the president's party loses vote share in House races at midterm. To determine whether the model implies such a cycle, we need a baseline measure of the effect policy-related incentives have on choices in the presidential election year preceding each midterm. For such a measure we use Mebane's (2000, Table 7) estimates of the proportion of presidential-year voters for whom each combination of presidential and House choices would minimize expected policy-related losses. Mebane's estimates, for presidential election years 1976–96, are based on his coordinating voting model.[30] Consider the proportion of voters in a presidential election who would minimize their expected policy-related losses by voting for a House candidate of the same party as the new president. There is a policy-related foundation for a midterm cycle if that proportion is greater than the proportion of voters in the subsequent midterm who would minimize their policy-related losses by voting for a candidate of the same party as the president. Table 5 shows that such a pattern occurs for all six midterm elections. The decline in the proportion from presidential year to midterm is considerably smaller for 1998 than for the other years.[31]

*** Table 5 about here ***

In the coordinating model there is a systematic foundation for a midterm cycle: the equilibrium Republican House vote share each elector expects at the time of the presidential election is no longer an equilibrium once the identity of the president becomes known. A consequence of the post-election disequilibrium is that the probability that each elector votes for a House candidate of the president's party decreases. The aggregation of such changes is the cycle-generating mechanism.

It is not possible, however, to say precisely how much of the change we observe in votes from presiden-

[30] From Mebane's (2000) Table 7 we sum the percentages with choices *RR* and *DR* to get the percentage for whom choosing a Republican House candidate minimizes the expected policy-related loss, and we sum the percentages with choices *DD* and *RD* to get the percentages for whom choosing a Democrat minimizes the loss.

[31] By year, the decreases shown in Table 5 are: 1978, .167; 1982, .229; 1986, .206; 1990, .124; 1994, .278; 1998, .028.

tial election to midterm is due purely to the post-election disequilibrium that the disappearance of uncertainty about the identity of the president brings about. Simulation using presidential-year NES data and Mebane's (2000) coordinating voting model suggest that immediately after the presidential election, due solely to the identity of the new president having become known, the equilibrium proportion of House votes for the new president's party typically falls by values ranging from about .01 to about .06.[32] The simulated loss is substantially smaller than the corresponding decrease in policy-related support for the president's party shown in Table 5 for each midterm year except 1998. Other factors that change between the presidential and midterm elections seem clearly to be modulating the magnitude of the policy-related midterm losses. Such factors include the fact that the president is usually expected to have less influence on policy after midterm than after the preceding presidential election.[33] The form of each elector's evaluation of the policy-related losses also changes: at midterm an elector's evaluation of the expected policy-related loss does not depend on the elector's retrospective evaluation of the economy, as it does in during presidential election years.[34] And between elections parties may change their policy positions, or voters may change their ideal points, and substantively different policies come into play.

**Surge and Decline**

The theory of surge and decline suggests one possible reason for the relationship between voters' most preferred policies and the policy positions they attribute to the parties to change in a systematic way between the presidential and midterm elections. According to the theory, during the heightened mobilization of presidential elections more electors with marginal political involvement turn out to vote than during midterm elections. The theory conjectures that this group disproportionately votes for the party of the winning presi-

[32]The simulation consists of recomputing the choice probabilities of Mebane's (2000) empirical coordinating model with $\bar{P}$ set equal to zero or one depending on which party actually won the presidency in each election. By year, the losses for the new president's party are: 1976, .011; 1980, .060; 1984, .015; 1988, .035; 1992, .043; 1996, .058.

[33]The upper bounds of the 95% confidence intervals for $\alpha$, in Table 3, are smaller than the lower bounds of the 95% confidence intervals Mebane (2000, Table 4) reports for $\alpha_D$ or $\alpha_R$ for the winning presidential candidate ($\alpha_{D,76}$, $\alpha_{R,80}$, $\alpha_{R,84}$, $\alpha_{R,88}$, $\alpha_{D,92}$, $\alpha_{D,96}$), for all years except 1984. The interval for $\alpha_{R,84}$, (.34, .79), is virtually the same as the interval for $\alpha_{86}$ in Table 3, suggesting that voters believed that Reagan's influence on policy remained about the same throughout his second term.

[34]Recall footnote 6.

dential candidate. At midterm, however, this group of electors does not vote (Campbell 1966).[35] Perhaps the surge of marginal electors who, according to the theory, vote for House candidates of the same party as the presidential winner do so because they like that party's policy position better than the other party's policy position. Then at midterm such electors for some reason disproportionately do not vote. In particular it may be that Independents who favored the policy position of the presidential winner's party are less likely to vote at midterm than partisan identifiers are to do so, simply because (as is well known and as the estimate for $d_I$ in Table 1 reconfirms) Independents are less likely to vote at midterm. All together the surge and decline theory posits that the midterm decline in turnout should have two major effects. On average, midterm voters should tend to have policy ideal points that are farther from the president's party than presidential-year voters do, and midterm nonvoters should tend to have policy ideal points that are closer to the president's party than presidential-year nonvoters do.

We show that NES data from the elections of 1976 through 1998 do not support the existence of such a surge and decline mechanism, although between presidential election and midterm the differences between electors' ideal points and the positions they attribute to the parties do change in a regularly repeated pattern. For most electors, turnout at midterm is only weakly related to expected policy-related losses. And the proximity between electors' ideal points and the positions electors attribute to the parties does not vary between elections in the way surge and decline theory would predict.

In the empirical coordinating model of (12a–c) and (13), the policy-related loss expected by elector $i$ affects the probability that $i$ does not vote ($\mu_{i,A}$) via the constructed variable $w_{Ci}$. We assess the effect that policy-related losses have on midterm turnout by computing the effect on $\mu_{i,A}$ of setting $w_{Ci} = 0$ for each $i$ in the midterm NES data. Setting $w_{Ci} = 0$ does not necessarily make $\mu_{i,A}$ larger, although in each year the median change in $\mu_{i,A}$ produced by the simulation is always negative. By year, the median differences

[35] The theory also conjectures that some regular voters deviate from their usual partisan affiliation during the presidential elections and vote for the presidential winner, but return to their normal partisan vote at midterm (Born 1990, 635). But the primary causal mechanism proposed by surge and decline is the different mobilization during presidential and midterm elections, and that is what we focus on in the text.

between $\mu_{i,A}$ using the original $w_{Ci}$ value and $\mu_{i,A}$ with $w_{Ci} = 0$ are: 1978, $-.0000017$; 1982, $-.0017$; 1986, $-.00047$; 1990, $-.0014$; 1994, $-.0018$; 1998, $-.0011$.[36] The median differences always have smaller magnitude for Independents than for other electors.[37] The small size of these effects means that they will usually be dominated by other factors, such as partisanship per se, that much more strongly affect the probability of not voting.

Nonetheless the possibility remains that midterm voters see themselves as farther from the president's party on policy than presidential-year voters do, while midterm nonvoters see themselves as closer to the policy of the presidential winner's party than do presidential-year nonvoters. In the absence of an explicit analysis of presidential-year turnout in the context of a coordinating model, we cannot be sure that expected policy-related loss affects the probability of casting a vote for the House election as weakly then as it does at midterm. Unfortunately, such a model is difficult to define and estimate.[38] Therefore we examine the policy proximities directly.

To do so we use the coordinating model parameter estimates of Mebane (2000) to compute ideal points ($\theta_i$) and party policy positions ($\theta_{Di}$ and $\theta_{Ri}$) for both voters and nonvoters in the NES data for each presidential election year from 1976 through 1996. We define a voter to be anyone who reports having voted for either the Democrat or the Republican in the House race and a nonvoter to be anyone who does not report such a vote. We include only those who report at least one complete set of policy position values.[39]

Figure 1 summarizes the data that most directly bear on the pattern of changes from presidential-year to midterm that the surge and decline theory predicts. For each elector $i$ we compute the absolute differ-

[36]The medians include only observations that have $\varsigma_i = 1$. The first and third quartiles for each year are: 1978, $-.0026$ and .00037; 1982, $-.0093$ and .00048; 1986, $-.0056$ and .0017; 1990, $-.011$ and .00080; 1994, $-.010$ and .00043; 1998, $-.0089$ and .00087. The value of $\tau$ contributes to the small size of the changes. If $\tau$ were zero instead of the estimated value $\hat{\tau} = .77$, everything else equal, then the effect on $\mu_{i,A}$ of changes in $w_{Ci}$ would be about seven times larger.

[37]For Independent Independents ($\mathrm{PID}_{\mathrm{I}i} = 1$) the medians are: 1978, 0; 1982, $-.00003$; 1986, 0; 1990, 0; 1994, $-.00002$; 1998, $-.00041$. The first and third quartiles are: 1978, $-.00058$ and .00029; 1982, $-.0034$ and .0018; 1986, $-.0030$ and .00018; 1990, $-.0052$ and .0014; 1994, $-.0023$ and .0017; 1998, $-.0058$ and .0016.

[38]Because an elector may abstain from voting for president, from voting for the House, or from both, the presidential-year model would have to include nine choice alternatives.

[39]By year, the number of voters and nonvoters is: 1976, 982 and 887; 1980, 802 and 551; 1984, 1,099 and 617; 1988, 940 and 725; 1992, 1,244 and 841; 1996, 996 and 600.

ence between *i*'s ideal point and the position of the party that won the presidential election. The absolute difference is $|\theta_i - \theta_{Di}|$ if the Democrat won the election and $|\theta_i - \theta_{Ri}|$ if the Republican won. Each panel in Figure 1 displays for each year the median of the absolute differences for a different set of electors. Panel (a) shows the medians for all voters and nonvoters, and the remaining panels show the medians for each of the seven NES types of party identifiers.

*** Figure 1 about here ***

Figure 1 provides little support for the idea that surge and decline explains the varying magnitudes of changes from the presidential-year to midterm reported in Table 5. Among all voters (Figure 1(a)), the median absolute difference between each voter's ideal point and the position the voter attributes to the presidential winner's party is always greater at midterm than it is during the preceding presidential election year. That does match the pattern predicted by the surge and decline theory. But in every case except one, the median absolute difference is also greater at midterm among all nonvoters. The sole exception is 1994, when the median absolute difference is slightly smaller among nonvoters than it is among nonvoters in 1992. The pattern among nonvoters does not match what surge and decline theory predicts.

The closest match to the pattern predicted by the surge and decline theory occurs among Independent Independents (Figure 1(b)), but even there the support for surge and decline is weak at best. In three of the six cases there are decreases at midterm in the median absolute difference among nonvoters. The decreases occur in 1978, 1990 and 1994. But in the remaining three midterms the median absolute difference increases from the preceding presidential year among nonvoters. Moreover, in one of the six cases (1990) the median absolute difference decreases among voters. There is hardly any support for surge and decline in the data for Independent Democrats and Independent Republicans (Figure 1(e) and 1(f)). Among nonvoters there are nine instances where the median absolute difference increases at midterm and only three instances where it decreases at midterm. Moreover, among Independent Democrats there are two instances (1990 and 1998) where the median absolute difference for voters decreases at midterm and among Independent Republicans

there is one instance (1998).

Instead of the pattern that the surge and decline theory predicts, what we see is that typically both voters and nonvoters are farther from the policy of the president's party at midterm than they were at the time that the party won the presidency in the preceding election. Compared to voters, nonvoters are somewhat more likely to be on average closer to the president's party at midterm, but the difference between voters and nonvoters does not occur with a regularity sufficient to make surge and decline a compelling summary of what is going on.

### Moderation by Changes in Policy Positions

Figure 1 shows that the absolute difference between electors' ideal points and the policy positions of the party that won the presidential election usually increases at midterm. The increase among all voters in the median absolute difference is larger than 0.1 in one of the six election cycles and larger than 0.05 in two others.[40] This is on a policy scale that has a defined range of zero to one. Notwithstanding that the pattern does not match the predictions of the theory of surge and decline, the increases are large enough to contribute significantly to the magnitudes of the policy-related midterm losses shown in Table 5. Figure 1 is a bit one-sided, however, because it summarizes the relationship between electors' ideal points and only one party's policy positions. But the expected policy-related losses that affect vote choices depend on both parties' policies.

Alesina and Rosenthal's (1995, Chapter 4; 1996) model uses a stylized perturbation of voters' policy preferences to generate uncertainty about the presidential election outcome. The perturbation they define shifts voters' ideal points relative to both parties' positions, but the perturbation is unbiased and therefore does not systematically increase either the absolute distance between voters and the party that won the presidency or the net distance compared to the other party. Moreover, the difference between the midterm

[40] By cycle, the increases in the median differences from presidential election to midterm (see Figure 1(a)) are: 1976–78, 0.03; 1980–82, 0.04; 1984–86, 0.12; 1988–90, 0.06; 1992–94, 0.08; 1996–98, 0.03.

and presidential-year legislative cutpoints that occurs in their model does not depend on those distances.[41] The changes from presidential year to midterm in ideal points and in party positions that underlie Figure 1, and the degree to which such changes contribute to midterm losses by the president's party, are therefore not encompassed by this aspect of Alesina and Rosenthal's theory.

To assess the components of change it is important to consider not merely the magnitudes but also the directions in which the aggregate of voters moves with respect to the parties. Consider a situation in which all voters think the Democratic party policy position is left of the Republican party position, i.e., $\theta_{Di} < \theta_{Ri}$ for all voters $i$. We may characterize the aggregate movement across elections in terms of two median statistics: the median difference between ideal points and Democratic positions, denoted $\text{med}_i(\theta_i - \theta_{Di})$, and the median difference between ideal points and Republican positions, denoted $\text{med}_i(\theta_i - \theta_{Ri})$. Let $\Delta_D = \text{med}_i^M(\theta_i - \theta_{Di}) - \text{med}_i^P(\theta_i - \theta_{Di})$ denote the difference between the median policy difference with respect to the Democratic party at midterm and the median difference in the preceding presidential year. If $\Delta_D < 0$, then at midterm voters have ideal points more to the left of the positions they attribute to the Democratic party than in the preceding presidential year. Other things equal, $\Delta_D < 0$ implies that there is a greater proportion of votes for Democratic candidates at midterm than in the preceding presidential year. On the other hand if $\Delta_D > 0$, then midterm voters have ideal points more to the right of Democratic party positions and, other things equal, a smaller proportion vote for Democratic candidates at midterm. Analogously we use $\Delta_R = \text{med}_i^M(\theta_i - \theta_{Ri}) - \text{med}_i^P(\theta_i - \theta_{Ri})$ to denote the difference between midterm and the preceding presidential year of the policy differences with respect to the Republican party. If $\Delta_R > 0$, then midterm voters have ideal points more to the right of Republican party positions and, other things equal, Republican candidates receive a greater proportion of votes at midterm than in the preceding presidential year. If $\Delta_R < 0$, then other things equal Republican candidates receive a smaller proportion of votes at midterm. Because $\theta_i$, $\theta_{Di}$ and $\theta_{Ri}$ vary independently, all combinations of positive and negative values for

[41] Alesina and Rosenthal (1995, Chapter 4) constrain the magnitude of the perturbations they introduce and derive conditions under which their theory's midterm cycle might be reversed.

$\Delta_D$ and $\Delta_R$ are possible.

Of particular interest are circumstances in which $\Delta_D$ and $\Delta_R$ are either both positive or both negative. If $\Delta_D > 0$ and $\Delta_R > 0$, then between elections the distribution of voters' ideal points has moved to the right relative to both parties' positions. Other things equal, Republican House vote share $\bar{H}$ increases. If a Democrat is president, the result is a kind of policy moderation: the Republican party's increased presence in the House means that policy outcomes are expected to be closer to the midterm Republican position.[42] If $\Delta_D < 0$ and $\Delta_R < 0$, then between elections the distribution of voters' ideal points has moved to the left relative to both parties' positions, Republican House vote share decreases and, if a Republican is president, there is moderation of expected policy toward the midterm Democratic position.

Moderation via such a pattern of changes occurs in five of the six midterm elections from 1978 through 1998, according to NES data. Using NES data to compute the median differences between ideal points and the parties' positions, it is necessary to adjust for the fact that some voters place the Democratic party policy position to the right of the Republican party position: for some voters, $\theta_{Di} > \theta_{Ri}$. Because moderation essentially refers to movement from one party toward the other and does not depend on the orientation with which each voter interprets its ideal point and the parties' positions, we use the sign of the difference between $\theta_{Ri}$ and $\theta_{Di}$ to orient all voters the same way. Hence we compute $\text{med}_i^M[(\theta_i - \theta_{Di})\,\text{sgn}(\theta_{Ri} - \theta_{Di})]$ and $\text{med}_i^M[(\theta_i - \theta_{Ri})\,\text{sgn}(\theta_{Ri} - \theta_{Di})]$ for each midterm year and analogous quantities for each presidential year. In Figure 2 we plot the values for all voters who report at least one complete set of policy position values (as in Figure 1) and, in separate panels, for party identifier subsets. The interelection differences with

[42] This is assuming that the president's influence on policy ($\alpha$) does not increase after midterm. Recall (footnote 33) that our midterm estimates of $\alpha$ are smaller than the values estimated by Mebane (2000) for the winner of the preceding presidential election, except for 1986.

respect to each party are now:

$$\Delta_D = \text{med}_i^M[(\theta_i - \theta_{Di})\,\text{sgn}(\theta_{Ri} - \theta_{Di})] - \text{med}_i^P[(\theta_i - \theta_{Di})\,\text{sgn}(\theta_{Ri} - \theta_{Di})] \tag{19a}$$

$$\Delta_R = \text{med}_i^M[(\theta_i - \theta_{Ri})\,\text{sgn}(\theta_{Ri} - \theta_{Di})] - \text{med}_i^P[(\theta_i - \theta_{Ri})\,\text{sgn}(\theta_{Ri} - \theta_{Di})]. \tag{19b}$$

The sign of each $\Delta_D$ and $\Delta_R$ value is indicated by the slope of the line that joins each presidential-year median to the succeeding midterm median.

*** Figure 2 about here ***

Figure 2(a) shows that among all voters, in every midterm except 1998 there is moderation based on interelection changes in the location of voters' ideal points relative to the parties' positions. In 1978 and 1994, with Democratic presidents, we have $\Delta_D > 0$ and $\Delta_R > 0$, and in 1982, 1986 and 1990, with Republican presidents, we have $\Delta_D < 0$ and $\Delta_R < 0$. In 1998 there is a Democratic president but nonetheless $\Delta_D < 0$ and $\Delta_R < 0$: Democrats' House vote share was pushed up, because between 1996 and 1998 the distribution of voters' ideal points shifted to the left relative to both parties' positions.[43] The pattern of interelection changes is similar across all of the partisan subsets and within each subset is by and large similar to the pattern among all voters, except for 1988–90. Between 1988 and 1990 we have $\Delta_R < 0$ among all voters but within each partisan subset $\Delta_R > 0$. The reason for the difference is that a higher proportion of voters identified as Democrats and a lower proportion as Republicans in 1990 than in 1988,[44] and $(\theta_i - \theta_{Ri})\,\text{sgn}(\theta_{Ri} - \theta_{Di})$ is more negative among Democratic voters than among Republican voters.

The moderating pattern associated with having either a Democratic president, $\Delta_D > 0$ and $\Delta_R > 0$ or a Republican president, $\Delta_D < 0$ and $\Delta_R < 0$ differs from the mechanism of disappearing uncertainty that is the primary focus of Alesina and Rosenthal's analysis, but it is not necessarily inimical to their theory. The

[43] The pattern of changes is similar among nonvoters.

[44] Among the subset of voters used to compute the statistics plotted in Figure 2, in 1988 the proportions identifying as Strong Democrats, Democrats, Republicans and Strong Republicans were, respectively, .20, .16, .14 and .20. In 1990 the corresponding proportions were .28, .18, .14 and .14.

fluctuations in policy positions may be related to the idea that parties may commit to policies different from their ideal policies (Alesina and Rosenthal 1995, 127–136). The consequences of such an extension for Alesina and Rosenthal's formal analysis are complicated, but an important result they report is that under a wide range of circumstances parties announce policies that are more polarized than their ideal policies are. Moreover, polarization increases as the president's power ($\alpha$) falls. As we mentioned previously (footnote 33), the combination of our estimates with those of Mebane (2000) shows that $\alpha$ is usually smaller at midterm than at the time of the presidential election: voters usually believe the president will be more powerful before midterm than after. Alesina and Rosenthal (1995) do not examine models in which $\alpha$ changes at midterm, but it is reasonable to speculate that in such models—with as well the parties being allowed to change their positions at midterm—there would be a tendency for polarization to increase at midterm. In that case one should expect the relationships between voter ideal points and the parties' positions to change by larger and more systematically biased amounts than the changes produced by random perturbations.

The NES data from 1976 through 1998 mostly support the idea that polarization is greater at midterm. Among voters, the median absolute difference between the parties' positions is smaller in the presidential election than at midterm in five of the six pairs of elections (the exception is 1988–90).[45] The interelection changes in the median absolute differences are, however, small compared to the observed magnitudes of $\Delta_D$ and $\Delta_R$. These results are only suggestive, because by construction our measures of party positions are within the unit interval $[0, 1]$ in every year. Moreover, different voters attend to different combinations of substantive issues, and the mix of salient issues changes over years (the changes over the years in the issue scales included in the NES partly reflects the variation in substantive concerns over time). Increased polarization may take the form of greater emphasis being placed on substantive issues about which voters' preferences are more intense.

[45] By pairs of elections, the $\text{med}_i\,|\theta_{Ri} - \theta_{Di}|$ values among the voters used to compute the statistics plotted in Figure 2 are: 1976–78, .20 and .21; 1980–82, .33 and .39; 1984–86, .36 and .45; 1988–90, .33 and .29; 1992–94, .37 and .41; 1996–98, .34 and .36.

The changes $\Delta_D$ and $\Delta_R$ may also arise because voters learn something after the presidential election. They may learn more about what a party's true policy position is, or about a policy position's consequences. Or they may learn how competent the elected officials are to implement whatever policy happens to be in effect.[46] Either kind of discovery might be a reason for a voter to update the relationship between the voter's ideal point and the positions the voter attributes to the parties. A party's actions either in the presidency or in Congress might be informative. Perhaps, for instance, the Democrat-favoring changes shown in Figure 2 for 1996 to 1998 stem from judgments that Republicans in the House were especially incompetent or extreme.[47] The unanswered question is why are movements away from the president's party more typical. Why do electors not learn more often that the president's party is more competent or less extreme than they previously thought.

One of the difficulties of explaining why moderation by policy position changes occurs is that our policy position measures are based on the gaps between electors' ideal points and the perceived positions of the two major parties. Across elections, we cannot distinguish between movement in electors' ideal points and movements in the positions of the political parties. Therefore, we cannot say much regarding a large number of possible explanations for policy position moderation. For example, notwithstanding Alesina and Rosenthal's polarization argument, it is possible that once a party is in office it follows policies that are more extreme than the ones it proposed at election time. Electors may learn this and consequently the relative gap between the president's party and electors increases at midterm. Electors' ideal points remain fixed but their

[46] Alesina, Londregan and Rosenthal (1993) develop a model of competence as part of an aggregate time-series model of economic growth (see also Alesina and Rosenthal 1995, 191–195). Competence there refers to a president's ability to produce a noninflationary increase in growth. The concept is not part of Alesina and Rosenthal's policy moderation theory. For instance, the competence construction ignores the legislature, while the basic institutional assumption of the strategic policy moderation theory is that voters believe that policy outcomes depend on the combined actions of the president and the legislature.

[47] Voters may have taken the extraordinary July 1997 plot to remove Newt Gringrich as Speaker as a sign of disarray among the Republican House leadership. Gingrich did resign shortly after the 1998 election. Polls during 1998 showed that most voters disliked the Republican effort to impeach the president. See, e.g., polls reported by the Pew Research Center for the People and the Press (accessed May 17, 2001): "Most Foresee Embarrassment, Not Impeachment: Americans Unmoved by Prospect of Clinton, Lewinsky Testimony" (August 4, 1998, http://www.people-press.org/aug1rpt.htm); "Turnout Indicators Slightly Below '94 Level: GOP Congressional Lead Not Undercut by Backlash" (October 21, 1998, http://www.people-press.org/oct98rpt.htm); "44% Republican, 46% Democrat Final Generic Ballot Measure: Democrats Erase GOP Congressional Lead" (November 1, 1998, http://www.people-press.org/nov98rpt.htm).

perceptions of the parties change. Such a theory would have the problem that it leaves unexplained how electors are repeatedly misled to believe that the party that wins the White House is more moderate than it actually is. In any case, with our data we cannot distinguish such a pattern from one in which electors change their ideal points because, say, they learn more about the consequences different policies have.

## Conclusion

The evidence that Americans coordinate their vote choices at midterm is strong. The NES data strongly confirm the strategic theory of policy moderation. The estimated parameters of the coordinating model satisfy all of the conditions necessary to describe coordinating behavior. The parameters of the nonstrategic model fail to describe policy-moderating behavior, and the nonstrategic model's fit to the data is significantly worse than that of the coordinating model. Coordination also affects decisions whether to vote, but the effects on turnout probabilities are typically small.

Midterm loss is in part caused by policy moderation that occurs because uncertainty about which party will control the presidency disappears after the presidential election. But the mechanism of disappearing uncertainty does not itself explain why midterm losses are as large as they are, nor why midterm losses occur as frequently as they do.

The largest source of loss of support for the president's party at midterm is a regularly repeated pattern in which by midterm the median differences between voters' ideal points and the parties' policy positions have become less favorable for the president's party than they were at the time of the presidential election (the same pattern occurs among nonvoters). Such a pattern occurs in all five of the interelection periods during 1976–98 after which the president's party suffered a midterm loss. Between 1996 and 1998 the pattern reverses: the distribution of voters' ideal points and party positions becomes more favorable to the Democratic party notwithstanding the fact that Democrat Bill Clinton is president. That reversal reduced the proportion of midterm voters who would minimize their policy-related losses by voting for a Republican, to such an extent that on the whole the Democrats enjoyed a small midterm gain in 1998.

The policies involved in the interelection changes are not limited to macroeconomic policy. Indeed, only in 1980 do the NES survey items we use to measure ideal points and party positions include scales that refer to macroeconomic policy. It may be that preferences about macroeconomic policy are strongly related to preferences about policies to which NES survey items do refer. For instance, every NES survey includes scale items about fiscal policy (taxing and spending). But the plain fact is that the interelection changes we document involve a wide range of policies, and the composition of the set of policies changes over time. Nonetheless, changes go in the same direction—away from the president's party—during five of the six interelection periods our data cover.

Why the interelection changes in the distribution of ideal points and policy positions typically cut against the president's party is not clear. The dynamic is not explained by variations in turnout: nothing like surge and decline is behind the pattern.

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Table 1: Parameter Estimates for the Coordinating and Nonstrategic Models

| | Coordinating | | Nonstrategic | | | Coordinating | | Nonstrategic | |
|---|---|---|---|---|---|---|---|---|---|
| parm | MLE | SE | MLE | SE | parm | MLE | SE | MLE | SE |
| $q$ | 1.557 | .137 | 1.433 | .208 | $\tau$ | .769 | .068 | .732 | .068 |
| $b_C$ | 1.491 | .217 | — | — | $d_{0,78}$ | −1.184 | .185 | −1.249 | .187 |
| $b_{NS}$ | — | — | 1.390 | .387 | $d_{0,82}$ | −1.256 | .215 | −1.318 | .218 |
| $\alpha_{78}$ | .463 | .167 | .359 | .176 | $d_{0,86}$ | −1.518 | .187 | −1.594 | .190 |
| $\alpha_{82}$ | .143 | .141 | 0* | .192 | $d_{0,90}$ | −1.630 | .200 | −1.706 | .203 |
| $\alpha_{86}$ | .570 | .111 | .408 | .125 | $d_{0,94}$ | −1.790 | .212 | −1.827 | .211 |
| $\alpha_{90}$ | 0* | .118 | 0* | .189 | $d_{0,98}$ | −2.048 | .227 | −2.095 | .229 |
| $\alpha_{94}$ | 0* | .072 | 0* | .154 | $d_1$ | .292 | .033 | .292 | .033 |
| $\alpha_{98}$ | .272 | .140 | 0* | .177 | $d_2$ | 1.099 | .071 | 1.098 | .071 |
| $\rho_{78}$ | 0* | .353 | 0* | .373 | $d_3$ | 1.773 | .087 | 1.770 | .087 |
| $\rho_{82}$ | .780 | .434 | .086 | .515 | $d_4$ | 2.029 | .119 | 2.026 | .119 |
| $\rho_{86}$ | 1* | .424 | 1* | .393 | $d_5$ | .031 | .002 | .031 | .002 |
| $\rho_{90}$ | 1* | .386 | 1* | .402 | $d_6$ | .423 | .051 | .425 | .051 |
| $\rho_{94}$ | .752 | .430 | .641 | .423 | $d_7$ | .117 | .007 | .117 | .007 |
| $\rho_{98}$ | 1* | .467 | 1* | .523 | $d_\varsigma$ | −.605 | .115 | −.585 | .115 |
| $c_{0,78}$ | −1.018 | .093 | −.990 | .093 | $d_{\theta,78}$ | −.057 | .222 | −.024 | .223 |
| $c_{0,82}$ | −.898 | .114 | −.923 | .119 | $d_{\theta,82}$ | .245 | .312 | .282 | .313 |
| $c_{0,86}$ | −.772 | .097 | −.744 | .097 | $d_{\theta,86}$ | .381 | .295 | .427 | .295 |
| $c_{0,90}$ | −.864 | .124 | −.775 | .124 | $d_{\theta,90}$ | −.169 | .260 | −.107 | .262 |
| $c_{0,94}$ | −.871 | .091 | −.871 | .092 | $d_{\theta,94}$ | .961 | .280 | .934 | .280 |
| $c_{0,98}$ | −1.063 | .110 | −.992 | .118 | $d_{\theta,98}$ | .881 | .347 | .881 | .349 |
| $c_{EC,78}$ | .078 | .112 | .080 | .111 | $d_{EC,78}$ | −.023 | .117 | −.023 | .117 |
| $c_{EC,82}$ | .096 | .109 | .107 | .109 | $d_{EC,82}$ | .015 | .132 | .015 | .133 |
| $c_{EC,86}$ | .066 | .094 | .048 | .094 | $d_{EC,86}$ | −.146 | .110 | −.146 | .110 |
| $c_{EC,90}$ | .284 | .143 | .285 | .143 | $d_{EC,90}$ | −.156 | .131 | −.149 | .131 |
| $c_{EC,94}$ | .023 | .101 | .031 | .101 | $d_{EC,94}$ | −.404 | .121 | −.408 | .121 |
| $c_{EC,98}$ | −.061 | .144 | −.067 | .141 | $d_{EC,98}$ | .152 | .156 | .153 | .156 |
| $c_D$ | .493 | .074 | .485 | .074 | $d_D$ | −.833 | .081 | −.816 | .081 |
| $c_{ID}$ | .603 | .083 | .604 | .083 | $d_{ID}$ | −.880 | .094 | −.860 | .094 |
| $c_I$ | .946 | .093 | .931 | .093 | $d_I$ | −1.265 | .104 | −1.242 | .105 |
| $c_{IR}$ | 1.408 | .087 | 1.386 | .086 | $d_{IR}$ | −.712 | .099 | −.691 | .100 |
| $c_R$ | 1.433 | .082 | 1.418 | .082 | $d_R$ | −.780 | .091 | −.760 | .091 |
| $c_{SR}$ | 1.892 | .094 | 1.862 | .094 | $d_{SR}$ | −.114 | .103 | −.103 | .103 |
| $c_{DEM}$ | .683 | .066 | .685 | .066 | $d_{DEM}$ | −.260 | .085 | −.269 | .085 |
| $c_{REP}$ | .636 | .067 | .631 | .067 | $d_{REP}$ | −.343 | .087 | −.348 | .087 |

Note: Maximum likelihood estimates. * indicates a boundary-constrained parameter. Pooled NES Post-Election Survey data, 1978–98, $n = 9639$ cases. Log-likelihood values: coordinating model, −6824.7; nonstrategic model, −6825.4.

Table 2: Likelihood-ratio Test Statistics for the Constraint $\alpha = 1$, by Year

| year | $-2(L_{\text{constrained}} - L)$ | sig. prob. |
|---|---|---|
| 1978 | 13.2 | .0008 |
| 1982 | 35.2 | $< .0001$ |
| 1986 | 12.0 | .0014 |
| 1990 | 28.6 | $< .0001$ |
| 1994 | 53.3 | $< .0001$ |
| 1998 | 26.7 | $< .0001$ |

Note: The constraint is imposed separately for each year's $\alpha$ parameter. The significance probability is the upper-tail probability for the $\chi^2_1$ distribution under the null hypothesis $\alpha = 1$, using the method of Davies (1987, eqn. 3.4) to adjust for the nuisance parameter $\rho$.

Table 3: 95% Confidence Intervals for $\alpha$

| parameter | lower bound | upper bound |
|---|---|---|
| $\alpha_{78}$ | .157 | .787 |
| $\alpha_{82}$ | $0^*$ | .423 |
| $\alpha_{86}$ | .348 | .775 |
| $\alpha_{90}$ | $0^*$ | .196 |
| $\alpha_{94}$ | $0^*$ | .127 |
| $\alpha_{98}$ | .007 | .541 |

Note: Estimates are based on tabulation of an asymptotic mixture distribution of the kind derived in Self and Liang (1987), under the hypothesis that $\alpha_{90} = \alpha_{94} = \rho_{78} = 0$ and $\rho_{86} = \rho_{90} = \rho_{98} = 1$. $^*$ indicates a boundary-constrained value.

Table 4: Expected Proportion Republican in National House Vote ($\bar{H}$) and Expected Proportion of Electors Voting ($\bar{V}$), by Year

| year | $\hat{\bar{H}}$ | $\hat{\bar{V}}$ |
|---|---|---|
| 1978 | .393 | .477 |
| 1982 | .437 | .550 |
| 1986 | .418 | .481 |
| 1990 | .373 | .439 |
| 1994 | .544 | .558 |
| 1998 | .524 | .455 |

Note: Computed using the parameter MLEs in Table 1 and 1978–98 NES data.

Table 5: House Vote Choices That Minimize Policy-related Losses, by Year

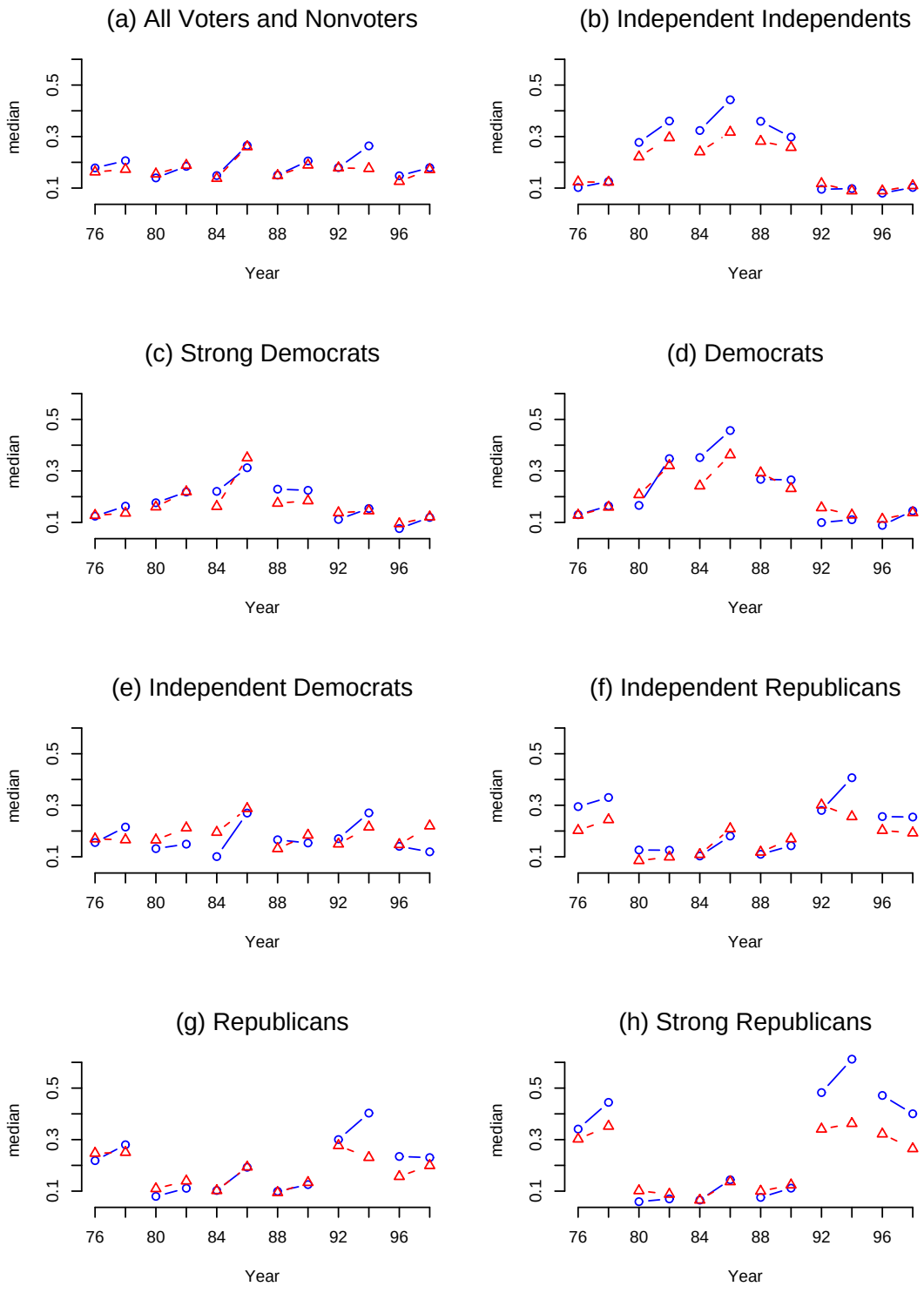
| midterm year | president's party | preceding presidential year[a] | | midterm coordinating model[b] | |
|---|---|---|---|---|---|
| | | *D* | *R* | *D* | *R* |
| 1978 | *D* | .500 | .500 | .333 | .667 |
| 1982 | *R* | .337 | .663 | .566 | .434 |
| 1986 | *R* | .593 | .407 | .799 | .201 |
| 1990 | *R* | .337 | .663 | .461 | .539 |
| 1994 | *D* | .635 | .365 | .357 | .643 |
| 1998 | *D* | .544 | .456 | .516 | .484 |

Note: Entries show the proportion of voters in each year for whom a vote for a House candidate of the indicated party is associated with a smaller policy-related loss than is a vote for the other party. Midterm entries are computed using the parameter MLEs in Table 1 and 1978–98 NES data. Each observation is weighted by the sampling weight $1/\omega_i$.

[a] Proportion of voters in the preceding presidential election year for whom the indicated House candidate choice minimizes the expected policy-related loss according to the coordinating voting model estimates of Mebane (1990, Table 7).

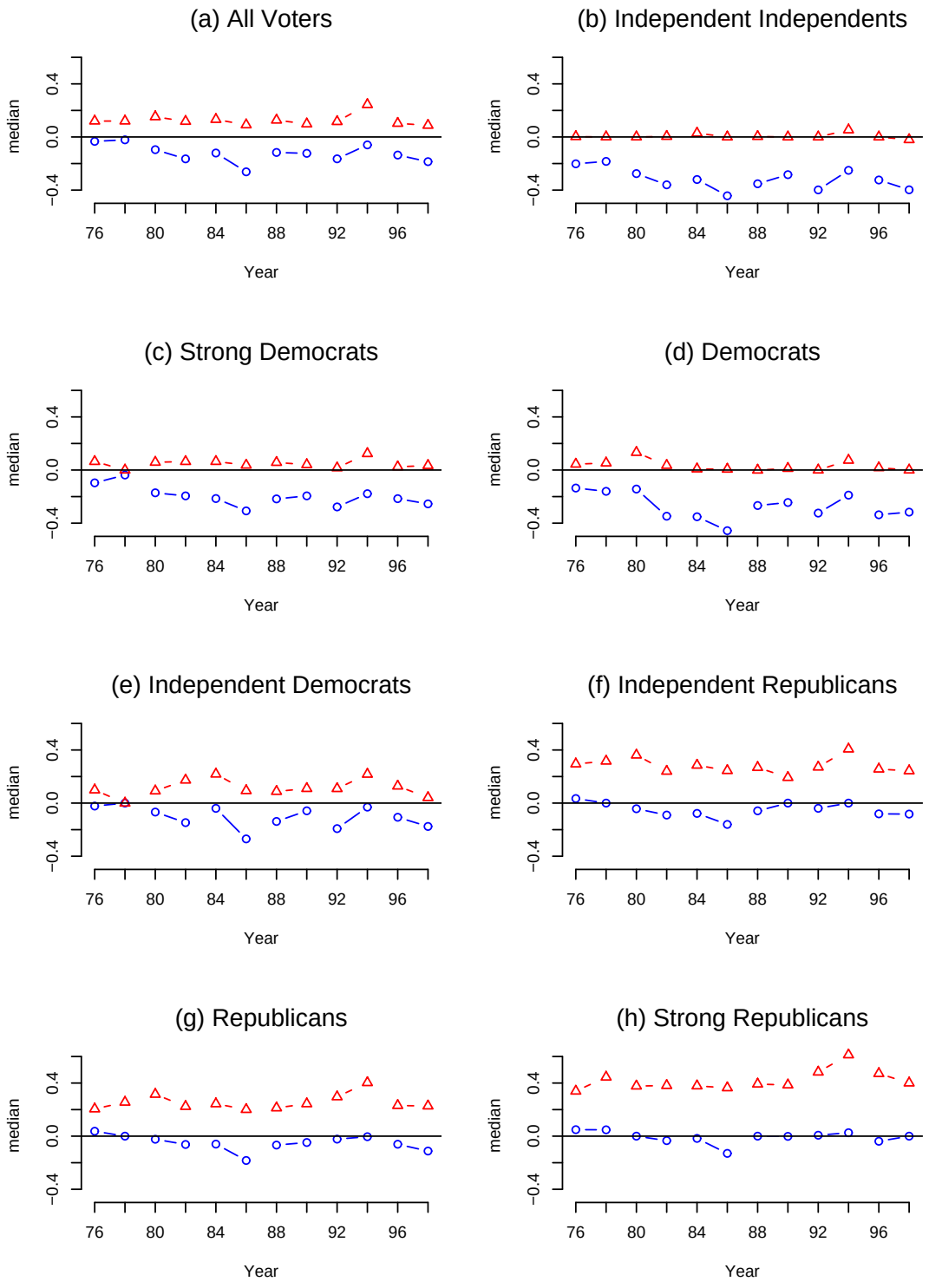
[b] Of voters with $\varsigma_i = 1$ and $w_{Ci} \neq 0$, the proportion under *D* have $w_{Ci} > 0$ and the proportion under *R* have $w_{Ci} < 0$.

Figure 1: Median Absolute Differences between Self and Presidential Election Winner's Party, Voters and Nonvoters




Legend: Circles denote voters. Triangles denote nonvoters.

Figure 2: Median Signed Differences between Self and Democratic and Republican Parties, Voters




Legend: Circles denote Republican party. Triangles denote Democratic party.