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Polarized platforms and moderate policies with checks and balances

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Abstract

In standard spatial models of elections, parties with policy preferences take divergent positions. Their platform positions are less separated than are the parties' ideal policies. If policy is the result of an executive–legislative compromise, the policy preferences of the parties can be moderated by voter behavior. Divided government may result. Since parties anticipate the moderated outcomes, they have an added incentive to choose separated platforms. Consequently, divergence in platforms is greater than in the standard model, especially when uncertainty is high and the legislature more powerful than the executive. For some parameters, parties may even 'posture' by adopting platforms that are more extreme than their 'true' ideal points.

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1. Introduction

The goal of this paper is to reconcile the observation that political parties in two-party democracies adopt opposing, polarized platforms,[1] with the seemingly inexorable proposition that political competition should lead to identical or

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[1]Empirical results documenting this statement for the United States include (a) scaling of the 'thermometer' scores in the National Elections Studies (Rabinowitz, 1976; Poole and Rosenthal, 1984a); (b) analysis of interest group ratings (Fiorina, 1974; Poole and Rosenthal, 1984b; Poole and Daniels, 1985); (c) scaling of roll call votes, (Poole and Rosenthal, 1991, 1997; Snyder, 1996).

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near-identical policies.[2] In fact, despite their theoretical elegance, results of full convergence are clearly at odds with the reality of party platforms.[3] Many factors, including both the primary system[4] and the need to appeal to campaign contributors and party activists, are potentially polarizing. Here, instead, we emphasize the role played by institutional 'checks and balances'. In cases where the president is directly elected, such as the United States, we argue that the need for both the executive and the legislature to agree to policy compromises paradoxically induces the parties to polarize their platforms.[5] These electoral platforms are more extreme than the actual policies, according to the model.

Polarized platforms emerge only if the traditional model is enriched both by allowing parties to have policy preferences and by introducing some form of incomplete information. The seminal papers here are by Wittman (1977, 1983, 1990) and Calvert (1985). Roemer (1992) provides a more formal development of the policy preferences model. It is easy to see why policy-oriented candidates would adopt polarized platforms. Assume the candidates have taken the same, centrist position. If a party does not place too much emphasis on winning, it can do better by moving in the direction of its ideal policy (taking the other party platform as fixed) because it still gets the centrist policy if it loses the election but gets a preferable policy if it wins. More generally, since elections are uncertain, parties trade probability of victory for more preferred policy, at least up to a point.

Nonetheless, Calvert (1985) notes that, if the two parties are sufficiently 'symmetric' about the 'middle', care a fair amount about winning, and do not face too much uncertainty about voter preferences, their equilibrium platforms are close to each other in the middle.[6] Thus, he views the 'convergence to the middle' result as relatively robust. Introducing policy preferences into the standard two-party competitive model does not seem to account for the degree of polarization reported by Poole and Rosenthal (1984a), who found the candidates at the fringes of the distribution of voter preferences. This empirical result is consistent with the theoretical point of Alesina (1988), who questioned the basic premise of credible

[2] See Enelow and Hinich (1984), Ledyard (1984), McKelvey and Ordeshook (1985), and Tovey (1991).

[3] See Enelow and Hinich (1984) for a review of the earlier literature. While there is generally no equilibrium in complete information models with more than one dimension, Tovey (1991) has recently shown that, if small amounts of various 'frictions' (for example, a very small chance that a voter makes a mistake in voting) are introduced, parties continue to take 'middle of the road' positions in multidimensional environments. Models of convergence with incomplete information include Hinich (1977), Coughlin and Nitzan (1981), Ledyard (1984), McKelvey and Ordeshook (1985).

[4] See Gerber and Morton (1998).

[5] Throughout this paper, we use parties and candidates as synonyms since parties are assumed to be represented by a homogeneous set of candidates competing in a single jurisdiction. For analysis of heterogeneous parties, see Alesina and Rosenthal (1995).

[6] With complete information, even candidates who care only about policy will converge, in one dimension, to the median.

policy promises from policy-oriented parties. In a 'one shot' game, after the election, the parties want to implement their preferred policies. Consequently, voters will not believe campaign 'promises' and will vote as if the choice is between the two ideal policies of the parties. Polarized policies result, even if parties also care greatly about winning elections.

Even if parties cannot make credible commitments and even if entry of new parties is blocked, institutions may provide voters with an opportunity to obtain moderate, centrist policies (Alesina and Rosenthal, 1995, 1996). Specifically, in the United States, policy results as some form of compromise between the executive and the legislature. Even if the party winning the presidency were to seek to implement its preferred policy after the election, policy would be moderated by whatever strength the opposition has in Congress.

Although moderating institutions produce relatively 'middle' policies in the absence of credible commitment, the assumption that parties cannot commit is extreme in some sense, since it implies that candidates have no 'spatial mobility': they can only propose their preferred policy, at least in a oneshot electoral game. In this paper, therefore, we allow parties to make credible commitments to their platforms. As a consequence, they have full spatial mobility. At the same time, both parties and voters must respond to institutional 'checks and balances'. The assumption of complete and credible commitment is also extreme, like its opposite. However, the two different extreme assumptions, viewed together, offer the insights for the more realistic, intermediate case of costly commitment where results will lie between those developed here and the results of our previous work (Alesina and Rosenthal, 1989, 1995, 1996) on the no commitment case.

The set-up for our analysis of the choice of party platforms takes the form of a one-dimensional spatial game with two stages. In the first stage, the two parties simultaneously choose their platforms. In the second stage, voting occurs for both the executive and the legislature. The interest of 'middle of the road' voters in moderating the parties can result in both split-ticket voting and divided government. When the parties choose their platforms in the first stage, they can use their knowledge of the voter equilibrium that the platforms induce in the second stage to calculate the probability of various policies after the election. The Nash equilibrium to the party competition stage will therefore reflect the second stage outcomes.

The central result of this paper is that 'checks and balances' induces more divergence in platforms than occurs in the standard model with two parties competing without a legislature. In the compromise model, political parties know that if they win the executive they have to compromise with the legislature. Thus, in order to obtain the desired policy outcome they have an incentive to run on 'extreme' platforms. 'Checks and balances' leads to polarization of platforms. Since the post-election policies are, in contrast, the result of a compromise, the actual policy outcomes are only 'slightly' more extreme than in the standard model with no legislature as in Wittman's and Calvert's work. Therefore, our results are consistent with the observation of polarized platforms and relatively moderate policies.

Observation of platforms and, more generally, candidate positions that are more extreme than actual policies accords with much casual empiricism. For example, in the 104th Congress (1995–96), Newt Gingrich's rather extreme 'Contract with America' was compromised to accommodate the preferences of the president. At the same time, the Democrats' minimum wage bill was compromised by including tax provisions favorable to small business. To move from casual observation to rigorous empirical work is indeed difficult, but one central implication of our model appears to find some support. This is that polarization of platforms should increase as the power of the legislature increases. If we make the heroic assumption that the location of the ideal points of the parties relative to the distribution of voter ideal points has been constant throughout the 20th century, our results fully accord with the claim by Sundquist (1983) that the power of Congress declined until the 1970s and expanded afterwards and the finding by Poole and Rosenthal (1991, 1997) that the mean party positions in Congress drew closer together until the early 1970s and then diverged.

In Section 2, we analyze the second stage of the game. We solve, taking party platforms as fixed, for the voter equilibrium on the basis of our specification of the compromise in policy and of the uncertainty about voter preferences. In Section 3, we then take up the first stage, where parties determine their platforms given their knowledge of the second stage equilibrium. Section 4 concludes.

2. A model of executive–legislative interaction

The model features two parties, D and R. Utility for a party (u_D or u_R) is quadratic in policy plus a fixed bonus for winning:

$$u_j = -\frac{1}{2}(x - \theta_j)^2 + h\delta_j, \quad j = D,R \tag{1}$$

where x is the policy, θ_j is the ideal point, h is the utility of winning and $\delta_j = 1$ if and only if party j wins the presidential election.[7] Utility for an individual voter is also quadratic in policy but, obviously, does not contain a bonus for winning.

Party D is to the left of party R. Thus, the party ideal points satisfy:

$$\theta_D < \theta_R. \tag{2}$$

Party platforms are indicated by ψ_j. We denote by x_j the policy that is implemented if party j wins the presidential election.

In the traditional model, since the winner takes all, there is no moderation by a

[7] Qualitative results would be preserved were parties also to derive utility from winning legislative elections. For simplicity, we omit this generalization.

legislature and the actual policy equals the platforms of the party winning the (presidential) election:

$$x_D = \psi_D, \quad x_R = \psi_R. \tag{3}$$

In our model, instead, we allow for an executive–legislative interaction that embodies compromise. The model, set forth in detail in Alesina and Rosenthal (1995, 1996), is here briefly reviewed.

2.1. Elections

For analytical tractability, we assume that both the legislature and the president are elected in a single national district. The president is elected by majority rule,[8] the legislature by proportional representation. Alesina and Rosenthal (1989, 1995) and Ingberman and Rosenthal (1995) move the model closer to actual institutions through extensions to midterm elections, staggered terms, and legislatures elected by plurality in constituencies; introducing these topics here would complicate the analysis and divert us from this paper's basic concern with polarization. The 'stripped down' model of this section does capture what are perhaps the two most crucial features of American elections. Firstly, a single party (individual) is awarded the presidency. Secondly, Congress has representatives from both parties. Furthermore, as we discuss below, the qualitative nature of our results do not depend on the specific representation of the legislative influence over policy and on the specifics of the electoral rules for the legislature.

Let us define V_j as the proportion of votes in the legislative election obtained by party j. Given the strict proportionality of the voting rule, V_j also represent the share of seats in the single legislative body. We assume full turnout so $V_D = 1 - V_R$.

2.2. Policy formation

Policy results from a compromise that reflects the positions of the president and the legislature; the legislature's position reflects its composition. This compromise does not reflect any delay costs in bargaining or other forms of 'gridlock'. This simplification is supported by the work of Mayhew (1991) who found that major legislation in the United States was as likely to pass when the Presidency and Congress were controlled by different parties as when government was unified. We formalize this compromise as follows.

When j is president, the policy x is given by:

$$x_j = \alpha\psi_j + (1 - \alpha)[V_R\psi_R + (1 - V_D)\psi_D] \tag{4}$$

[8] A fair coin is tossed to decide a tie.

with $0 \leq \alpha \leq 1$.[9]

The parameter α represents the weight of the president in policy formation. If $\alpha = 1$, we have the standard model where the legislature has no role; in other words, $\alpha = 1$ is the special case in which 'the winner takes all'. In this case, policy is simply the president's platform. If $\alpha < 1$, the policy outcome, x_j, is a linear combination of the president's position and that of the legislature. The legislature's position is given by the term in the square bracket in (4), which is just an average of the platforms of the two parties weighted by their vote shares. The assumption of linearity is needed for tractability, but, as discussed later in this paper, the qualitative nature of the results is preserved when the compromise depends only upon which party controls the executive and which party controls the legislature.[10]

For expositional purposes it is convenient to rewrite (4) for the two parties as follows:

$$x_D = \psi_D + KV_R \tag{5}$$

$$x_R = \psi_R - K(1 - V_R) \tag{6}$$

where:

$$K \equiv (1 - \alpha)(\psi_R - \psi_D). \tag{7}$$

Note that, for V_R fixed, $\psi_D \leq x_D \leq x_R \leq \psi_R$, with all inequalities strict for $0 < \alpha < 1$. This result implies that all voters with ideal points exterior to the interval (ψ_D, ψ_R) have a dominant strategy of voting, in both elections, for the party closer to their ideal point. But with executive–legislative interaction, voters interior to (ψ_D, ψ_R) do not have this dominant strategy; their balloting depends on their beliefs about how others will vote.

2.3. Uncertainty

If the distribution of voter ideal points were common knowledge, both parties would, as in the traditional model, continue to choose platforms at the median. To obtain nonidentical platforms in the first stage, we need some uncertainty about voter preferences, an assumption, which is also much more realistic than common knowledge. For tractability, we assume that voter ideal points are uniformly distributed on the interval $[a, 1 + a]$ where a is a random variable itself uniformly

[9] In recent work, Grossman and Helpman (1996, 1999) have adopted an analogous formulation to model policy compromise.

[10] Krehbiel (1996), using an agenda-control framework, argues that policy will always be intermediate between the preference of a pivotal voter in the legislature and that of the president, the exact location depending on the status quo. Since the status quo will vary with the policy area (such as health care or foreign policy), one can view our linear model as an approximation to the 'average' liberal–conservative position of policy.

distributed on the interval $[-w,w]$. That is, the expected location of the median voter is $1/2$, but the actual location can range anywhere from $1/2-w$ to $1/2+w$. This formulation of uncertainty explicitly follows Alesina and Rosenthal (1989, 1996) and is consistent with the approaches of Ledyard (1984) and Roemer (1992).

For simplicity, we restrict w to guarantee that the (interior) voters without dominant strategies do not gain information about the realization of a from the observation of their own ideal points. The necessary condition is:

$$w \leq \min(\psi_D, 1-\psi_R). \tag{8}$$

Condition (8) has the realistic implication that there always exist voters to the left of the platform of party D and to the right of the platform of party R. This assumption, which rules out 'too much' uncertainty, does not appear very restrictive.

We also need to rule out too small an amount of uncertainty. Specifically, we require that there be enough uncertainty for the equilibrium outcome of presidential elections to remain uncertain. The necessary assumption is:

$$w > \max\left[\frac{1}{2} - \frac{\psi_D + \psi_R}{2(1-K)} + \frac{K\psi_R}{(1-K)(1+K)}, \frac{\psi_D + \psi_R}{2(1-K)} - \frac{1}{2} - \frac{K(\psi_D + K)}{(1-K)(1+K)}\right]. \tag{9}$$

The intuition is given in Alesina and Rosenthal (1995).[11] The bottom line is that with a very small amount of uncertainty (w), in equilibrium the results of presidential elections become certain and fully mobile parties converge.[12] Here we focus on the more interesting case where uncertainty is sufficiently large to promote platform divergence.

Conditions (8) and (9) identify a large and empirically reasonable range of possible values for w. Suppose $\alpha = 1/2$ and the parties adopt platforms at the expected quartiles of the voter distribution, that is $1/4$ and $3/4$. Then (8) and (9) imply $0.25 \geq w > 0.03$. How does this range match up to what is a reasonable 'back of the envelope' value for the uncertainty parameter, given the results of presidential elections in the United States? If we assume that parties locate symmetrically about the expected median of $1/2$, a tie is expected in the presidential election, with the smallest possible D vote being $50-100w$ percent and the largest $50+100w$. With a w of 0.2, the D vote could thus range from 30%

[11] Conditions (8) and (9) are expressed in terms of the choice variables ψ_j and not the model parameters θ_j. We could not derive closed-form expressions for conditions on w in terms of the model parameters. Hence, when solving the model computationally for given θ_D, θ_R, α, and w, we checked that the equilibrium values of the ψ_j satisfied (8) and (9).

[12] For second stage results when (9) does not hold, see Alesina and Rosenthal (1995).

to 70%. All presidential elections since the Civil War have had margins below 70–30, with the relatively few outcomes above 60–40 considered to be landslides. If we attribute all the variation in these outcomes to preference shocks (realizations of a), 0.2 would look like a reasonable, slightly high value for w. If we attribute some of the variation to the electorate's being informed that one party's ideal point is closer to the expected median than the other, 0.1 might be a more realistic value for the uncertainty parameter.

Finally, note that since uncertainty makes V_R a random variable, the outcomes x_j given by (5) and (6) are also random variables.

2.4. Equilibrium

We now proceed to summarize the equilibrium to the second stage. The reader is referred to Alesina and Rosenthal (1995, 1996) for a full development.

The behavior of the voters is characterized by cutpoint rules. In each contest, voters above the cutpoint vote R while voters with ideal points below the cutpoint vote D. Let $\tilde{\theta}$ be the cutpoint in legislative elections. It follows directly from the assumption that a is uniformly distributed that:

$$EV_R = 1 - \tilde{\theta}. \tag{10}$$

Let $\hat{\theta}$ be the presidential cutpoint and $P(\hat{\theta})$ be the probability that R wins the presidency. It follows that:

$$P(\hat{\theta}) = \begin{cases} = 1 & \hat{\theta} \leq \frac{1}{2} - w \\ = \frac{1}{2w}\left[\frac{1}{2} + w - \hat{\theta}\right], & \frac{1}{2} + w > \hat{\theta} > \frac{1}{2} - w \\ = 0, & \hat{\theta} \geq \frac{1}{2} + w \end{cases} \tag{11}$$

Eq. (11) simply shows that if $\hat{\theta}$ is below (above) a threshold, party R (D) wins for sure, for any possible realization of a. The second line of the equation shows the intermediate and more interesting case, where the probability of electing R is strictly between 0 and 1 and depends, monotonically, upon the position of $\hat{\theta}$.

In the traditional model, voters vote sincerely given that they have a forced choice between ψ_D and ψ_R. In the compromise model, the voter equilibrium is such that the cutpoints result in the voters voting conditionally sincerely. That is, given the legislative cutpoint $\tilde{\theta}$, voters can compute their expected utility were R president and their expected utility were D president. Conditional sincerity then implies that a voter's presidential vote is cast for the party offering greater expected utility.[13]

This implies that:

$$\hat{\theta} = \frac{\psi_D + \psi_R - 2K\tilde{\theta}}{2(1-K)}. \tag{12}$$

The fact that $\hat{\theta}$ is negatively related to $\tilde{\theta}$ shows how voters take advantage of institutional balancing. In fact, the higher is $\tilde{\theta}$, the stronger is D in the legislature; therefore, if R wins the presidency, the more 'moderate', i.e. less right wing, will be the policy. Thus, more voters are willing to vote R for president, the higher is $\tilde{\theta}$.

We now turn to the determination of $\tilde{\theta}$, the legislative cutpoint. If the voters knew that R were to be president for sure, they would also vote with conditional sincerity in the legislative election. That is, if one votes, say, R for the legislature one should not be better off if R's votes were to be decreased. This feature implies that the expected policy is equal to the ideal policy of the voter at the cutpoint, who is indifferent between voting for either party in the legislative elections.[14] This is the pivotal voter theorem of Alesina and Rosenthal (1989, 1995). They show that the cutpoints are given by:

$$\text{if } R \text{ president, } \tilde{\theta}_R = \frac{\psi_R}{1+K}; \quad \text{if } D \text{ president, } \tilde{\theta}_D = \frac{\psi_D + K}{1+K}. \tag{13}$$

That is, if R were president, for sure, the voters would use the power of the legislature to pull policy to the left of R's platform by a factor of $1/(1+K)$; similarly policy would be moved to the right of D's platform were D president.

When elections are uncertain, voters must hedge. The equilibrium legislative vote for R must be less than what it would be if R were president and more than what it would be if D were president. Alesina and Rosenthal (1995, 1996) show that, with uncertainty, the cutpoint is just the probability weighted average of the two certainty cutpoints:

$$\tilde{\theta} = P(\hat{\theta})\tilde{\theta}_R + [1 - P(\hat{\theta})]\tilde{\theta}_D = \frac{w(\psi_R + \psi_D + K) + \left(\frac{1}{2} - \hat{\theta}\right)(\psi_R - \psi_D - K)}{2w(1+K)}. \tag{14}$$

Note further that:

$$\tilde{\theta}_D < \tilde{\theta} < \tilde{\theta}_R. \tag{15}$$

[13] Note that the computation of the two expected utilities must allow for the fact that the random variable a affects voting in both elections. Thus, if the Republicans win the presidential elections, their legislative vote must also be relatively high.

[14] In fact, suppose not and, say, the cutpoint voter's ideal policy is on the right of the expected policy. Then the cutpoint voter would not be indifferent and would strictly prefer an increase in V_R. Thus some voters to the left of the cutpoint voter are voting the 'wrong way'.

As in (12), there is a negative, downward sloping relationship between the two cutpoints in (14). As the probability of an *R* presidential victory increases, the more the voters seek to moderate a potential *R* president with a strong legislative vote for *D*.

The equilibrium of the second stage game is represented by the solution of Eqs. (12) and (14). Condition (9) and the linearity of the equations guarantees us that a unique, stable solution exists.

Proposition 1. *The equilibrium to the second-stage game is given by*:

$$\tilde{\theta}^{**}(\psi_D,\psi_R;\alpha,w)=\frac{w(\psi_R+\psi_D+K)+\frac{1}{2}\left(1-\frac{\psi_R+\psi_D}{1-K}\right)(\psi_R-\psi_D-K)}{2w(1+K)-\frac{K}{1-K}(\psi_R-\psi_D-K)}$$
$$\hat{\theta}^{**}(\psi_D,\psi_R;\alpha,w)=\frac{\psi_D+\psi_R}{2(1-K)}-\frac{K}{1-K}\left[\frac{w(\psi_R+\psi_D+K)+\frac{1}{2}\left(1-\frac{\psi_R+\psi_D}{1-K}\right)(\psi_R-\psi_D-K)}{2w(1+K)-\frac{K}{1-K}(\psi_R-\psi_D-K)}\right] \quad (16)$$

The proof follows from Alesina and Rosenthal (1996).[15]

Corollary 1. *If the parties are equidistant from the median,* $P(\hat{\theta})=1/2$. *Otherwise, the party closer to the median has a probability greater than* $1/2$ *of winning*.

Proof. See Appendix A.

Corollary 2. *There is split-ticket voting if and only if the parties are not equidistant from the median and* $\alpha\neq 0$.

Proof. See Appendix A.

Corollary 3. *Unified government is expected if*

$$w>\frac{\alpha(\psi_R-\psi_D)}{2(1-(1-\alpha)(\psi_R\psi_D))}.$$

Divided government is expected if

$$w<\frac{\alpha(\psi_R-\psi_D)}{2(1-(1-\alpha)(\psi_R-\psi_D))}.$$

Proof. See Appendix A.

[15] That paper also treats midterm elections. Eq. (16) represents the solution when there is no second period (or when the discount rate, β, equals zero).

2.5. Discussion

When the parties adopt platforms that are symmetric about the median, thus $\psi_R + \psi_D = 1$, Corollaries 1 and 2 show that, in equilibrium, both cutpoints equal the expected median of 1/2. Given that both parties are equally likely to win the presidency, the legislative vote would be split equally. Given that the legislative vote is split equally, both parties are given an even chance of winning the presidency. There is no split-ticket voting, which arises in the model only when the platforms are asymmetric about the median. In this case, the cutpoints $\hat{\theta}^{**}$ and $\tilde{\theta}^{**}$ are not equal.

Divided government requires a relatively low level of uncertainty, as shown by Corollary 3. For fixed party platforms and presidential power, low uncertainty permits the greater voter coordination needed for divided government. Conversely, for w fixed, divided government becomes more likely as presidential power increases or as the party positions become more polarized.

The pattern of the two cutpoints (and therefore voting patterns) as a function of our exogenous parameter values (ψ_j, w, α) is quite complex. In fact the voters have to take into account three factors: the platforms of the parties, the relative power of the president, and their need to 'hedge', which depends on the amount of uncertainty.[16]

3. Equilibrium party platforms

When, in the first stage, parties choose platforms they know (from the second stage) the mapping between every pair of platforms ψ_D, ψ_R and the equilibrium voter cutpoints. This implies that they also know the probability with which R wins the presidency, abbreviated to $P(\cdot) \equiv P\big(\hat{\theta}(\psi_D, \psi_R)\big)$. More generally, we use the symbol '$(\cdot)$' to indicate variables that depend, through the second-stage equilibrium, on the platforms. We also abbreviate the policy component of utility with the notation $U(x_j) \equiv -1/2(x_j - \theta_R)^2$.

If D adopts platform ψ_D, the best response of R is given by:

$$\operatorname*{Max}_{\psi_R} Eu_R \equiv P(\cdot)[EU(x_R) + h] + (1 - P(\cdot))EU(x_D). \tag{17}$$

The notation $EU(x_j)$ signifies that, even given the identity of the president, one must compute expected utilities which reflect the uncertainty about the legislative vote induced by the preference shock, a.

Define $X_D = \psi_D + K\big(1 - \tilde{\theta}(\psi_D, \psi_R)\big)$ and $X_R = \psi_R - K\tilde{\theta}(\psi_D, \psi_R)$. That is, X_D and X_R correspond to the policies that would result were a equal to zero, namely the actual

[16]For more discussion and examples with various parameter values, the reader is referred to the working paper version of this article, available upon request.

median is equal to the expected median. We can then, after some algebra and integration, rewrite (17) as:

$$\begin{aligned}\underset{\psi_R}{\text{Max}}\ Eu_R \equiv & \underbrace{P(\cdot)[U(X_R(\cdot)) + h] + (1 + P(\cdot))[U(X_D(\cdot))]}_{a} \\ & \underbrace{-(1-\alpha)^2(\psi_R - \psi_D)^2 Var(a)/2}_{b} \quad \underbrace{-\alpha(1-\alpha)P(\cdot)(1-P(\cdot))w(\psi_R - \psi_D)^2}_{c}\end{aligned} \tag{18}$$

We decompose Eq. (18) into three parts. Part (a) is directly analogous to the problem parties face in the standard Wittman–Calvert model where $X_D = x_D = \psi_D$ and $X_R = x_R = \psi_R$. Part (b) reflects the loss that would result from the variance in the legislative elections even if the identity of the president were certain. Note that, since the parties are risk averse, the variance has a negative effect on utility. The third part reflects the fact that the policies associated with the variance in legislative elections are split into two parts, one associated with an *R* victory and the other with a *D* victory. The second and third parts vanish when there is no legislative power ($\alpha = 1$).

The best response problem of party *D* is symmetric. The best response is found by solving the first order condition:

$$\begin{aligned}0 = \frac{\partial Eu_R}{\partial \psi_R} = & \underbrace{\left\{ \frac{\partial P(\cdot)}{\partial \psi_R}[h + U(X_R) - U(X_D)] + \frac{\partial X_R \partial U(X_R)}{\partial \psi_R \partial X_R} P(\cdot) \right\}}_{\text{(i)}} + \underbrace{\frac{\partial X_D \partial U(X_D)}{\partial \psi_R \partial X_D}(1 - P(\cdot))}_{\text{(ii)}} \\ & \underbrace{-(1-\alpha)(\psi_R - \psi_D)\left[(1-\alpha)Var(a) + 2\alpha P(\cdot)(1-P(\cdot))w + \alpha(\psi_R - \psi_D)w \frac{\partial P(\cdot)}{\partial \psi_R}(1 - 2P(\cdot)) \right]}_{\text{(iii)}}\end{aligned} \tag{19}$$

Part (i) is essentially just the first-order condition for the standard Wittman–Calvert model. Part (ii) is an additional, important term that reflects incentives to polarize in order to influence policy when one’s opponent holds the presidency. Part (iii) is a ‘messy’ but less important part that reflects incentives to adjust to the risk imposed by variability in legislative outcomes.

We have only been able to solve these first order conditions numerically. Before doing so, it is, however, worthwhile to build some intuition concerning our main result of moderated policies and polarized platforms.

Consider, for a moment, the standard Wittman–Calvert model. In this special case of our model, parts (ii) and (iii) of (19) drop out and part (i) is simplified by $x_R = \psi_R$ and $\partial X_R / \partial \psi_R = 1$. Calvert (1985) shows that a necessary condition for equilibrium is that the first order conditions for the two parties be satisfied simultaneously, that the second order conditions are satisfied, and that the equilibrium is unique.[17] Let us denote the equilibrium positions by ψ_j^*. (Recall that the expected median of voter preferences is 1/2.)

[17] Calvert (1985) discusses technical conditions for existence and uniqueness in more general formulations of this model.

Proposition 2. *If* $h=0$ *and* $\theta_D < 1/2 < \theta_R$, $\theta_D < \psi^*_D < \psi^*_R < \theta_R$.

Proof. See Calvert (1985).

If h is greater than 0, Proposition 2 continues to hold as h increases, until h reaches a critical value where the parties converge. That is, the parties adopt positions interior to their ideal points, but they do not converge to identical positions unless they weight winning highly relative to the utility they derive from policy.

To illustrate Calvert's claim that, in the standard model, policy motivation does not engender very much polarization of platforms and policies, consider the extreme case of $\theta_D = 0$, $\theta_R = 1$, with a reasonably large amount of uncertainty, say $w=0.2$. Even when $h=0$, so the parties do not care about winning per se, R's equilibrium platform is 0.643, that is over 2/3 of the way from her ideal point of 1.0 to the expected median of 1/2. Thus, even 'fully ideological' and 'highly extreme' parties are drawn toward the median.[18]

Let us now turn to the regime of 'checks and balances'. To continue building intuition, consider the case of $\alpha=1$ (purely presidential regime) and let us ignore parts (ii) and (iii). Let us simply assume that, when a party chooses a platform, it knows that the actual policy, if this party wins, will be more moderate than the platform itself. This is due to some form of 'moderating institutions' that we leave, for the moment, unspecified.[19] In other words, we are studying a standard Wittman–Calvert model, except that platforms are 'moderated' when translated into policies, and both parties and voters know about the moderating process. Assume that the parties adopt platforms that lead to the equilibrium policies of the standard model. Are these platforms an equilibrium in the two-stage game? The answer is positive. In fact, voters care only about policy, and since the policies are unchanged, the second stage reproduces the Wittman–Calvert equilibrium in voting. Since parties care only about policy and the probability of winning, their platforms will represent a first-stage equilibrium. But since policies are moderated, that is less extreme than platforms, the platforms must be more polarized than in the standard model.

If platforms are moderated when turned into policies and if voters care about policies, rather than platforms per se, the parties choose 'extreme' platforms only to obtain, in equilibrium, more moderate policies. This is one critical building block of the basic intuition for our results. The nature of this intuition is quite general and does not depend on specific functional forms assumed in our model.

[18]Note that parties would converge even further if voter preferences followed a strongly unimodal rather than uniform distribution. On the other hand, non-quadratic utility or different objectives for parties might force more polarization than occurs in our specification.

[19]Note also, that since we are imposing that (ii) in (19) is zero, we are assuming that ψ_R does not influence the policy x_D if R loses the presidential election. (Formally, $\partial x_D / \partial \psi_R = 0$.)

We now turn to our numerical computations. Before computing the full blown model it is useful to establish the following.

Result 3.

$$\partial X_R / \partial \psi_R > 0, \partial X_D / \partial \psi_R > 0.$$

This result was established by first using (7) and (16) to express the two derivatives above as functions of the four parameters ψ_D, ψ_R, α, and w. Although the partial derivatives pose no conceptual difficulty, their complexity required use of the symbolic mathematical package MAPLE V. We then exhaustively searched the feasible parameter space delimited by Eqs. (8) and (9). Within the feasible range, ψ_D and ψ_R were incremented in steps of 0.04 (with $\psi_D < \psi_R$), and α and w in steps of 0.02. For all points evaluated in the grid search, the signs of the partial derivatives were positive. Of course, while the result holds subject to the fineness of the grid search, the search was sufficiently fine to make the generality of the result a safe bet.

Therefore, the implication of Result 3 is that our model implies an incentive to polarize in that a change in platform moves expected policy, no matter who wins the presidency, in the direction of the platform change. The cost of a move in the direction of the ideal point is a lower probability of winning the presidency.

We now proceed to numerical analysis of the full model. We solved for the equilibrium policies for the case where the parties are symmetric about the expected median.[20] Note that we are able, in this special case, to take advantage of the facts that, in equilibrium, both the legislative and executive cutpoints equal 1/2 and D's platform is symmetric to R's ($\psi_D^* = 1 - \psi_R^*$). As a consequence, the expected policy when R is president is $E(x_R) = \psi_R - K\tilde{\theta} + Kw/2$ and the expected policy when D is president is $E(x_D) = \psi_D - K(1 - \tilde{\theta}) - Kw/2$.

In Fig. 1, we show the equilibrium platforms for three values of R's ideal point and two levels of uncertainty as α is varied. The curves do not extend to $\alpha = 0$. Before $\alpha = 0$ is reached, party platforms become sufficiently polarized that we cannot solve for the voter equilibrium and satisfy (8).

Several observations are in order.

1. As the legislature becomes stronger, platforms become more polarized. In fact, when the parties have ideal points (either R at 0.75 or R at 0.55) interior to the expected voter distribution ([0,1]), for low α the parties can be said to posture, in the sense that they take positions more extreme than their ideal points. This is especially evident for the case where R's ideal point is 0.55, very close to the

[20] The Gauss code is available upon request.

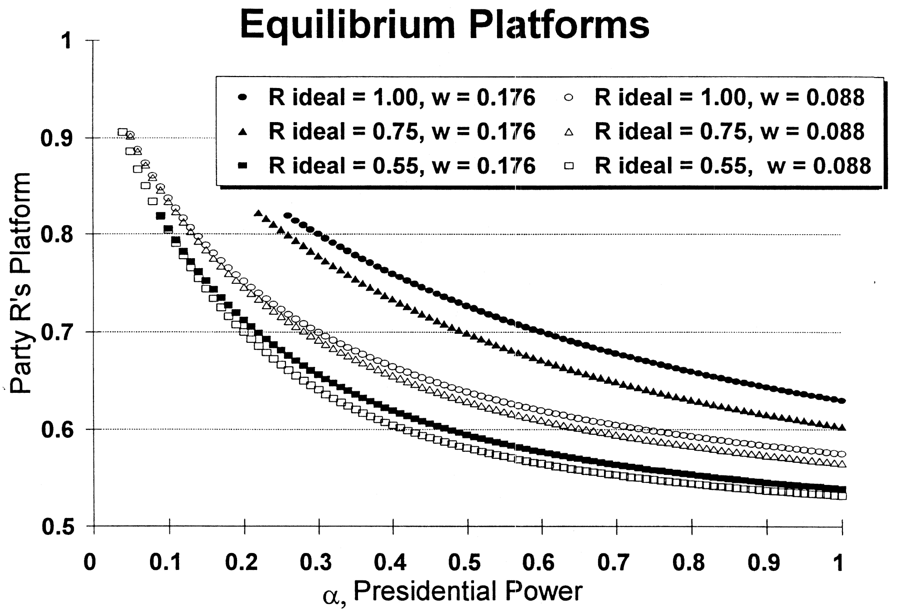

Fig. 1. Platforms as a function of uncertainty, party ideal points and presidential power.

expected median but, for sufficiently low α, R's platform is to the right of 0.75, to the right that is, on average, of three-fourths of the voters.

2. For α fixed and the party ideal points fixed, platforms are always more polarized when uncertainty is greater. This observation extends the result for the Wittman–Calvert model, that is the model with $\alpha = 1$.
3. For α and w fixed, platforms are more polarized when the ideal points are more polarized. However, because platforms respond to the incentive to win the presidency and to the anticipated moderation brought about by the voter equilibrium as well as to ideal points, platforms are relatively insensitive to variation in the ideal points. This is especially evident at the low uncertainty level, $w = 0.088$, in comparing party R with an ideal point of 1.00 to party R with an ideal point of 0.75. The curves for these two cases in Fig. 1 are virtually identical. In such cases, one would find it difficult to ascertain the true preferences of a party from observation of its platform. Variation with the ideal point increases as the ideal point approaches the expected median of 0.5. If both parties in fact had ideal points at 0.5, their platforms would be 0.5, for all values of α. But the more the ideal points are distant from 0.5, the less further change in ideal points matters to platforms. The story for policies, shown in Fig. 2, differs sharply from that for platforms. The key observations here are as follows.
4. Expected policy is now largely invariant to variation in the power of the

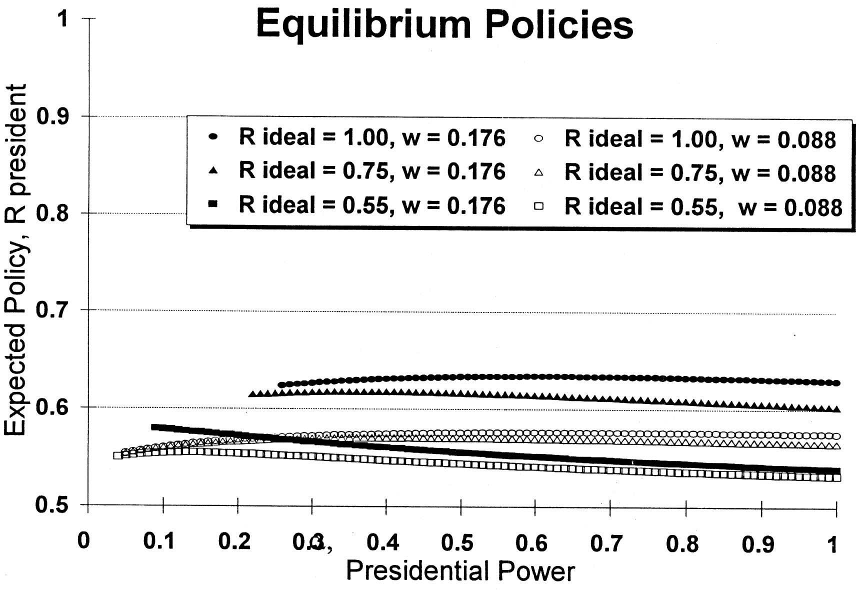

Fig. 2. Policies as a function of uncertainty, party ideal points and presidential power.

president. Moderation by the voters offsets polarization in platforms. Although there is a slight increase in policy polarization as presidential power is decreased from 1.0, for sufficiently low values, policy polarization decreases. Moderation more than offsets platform polarization. The intuition here is given by the extreme case of pure proportional representation of $\alpha=0$. For any symmetric platforms adopted by the parties, the voters, by using a cutpoint of 0.5, can obtain an expected policy of 0.5 under proportional representation, no matter which party wins the (valueless) presidency. There is no policy polarization at all under proportional representation.

5. For fixed α and ideal points, the expected policies are always more polarized when uncertainty is higher.
6. For fixed α and w, the expected policies are always more polarized when the ideal points are more polarized. However, Fig. 2 always shows expected R policies less than 0.65, even when the ideal point is at the extreme value of 1.00. Thus, even though the median voter result is not 'Calvert' robust in platforms, there is robustness in policies.

We conclude this section by considering the robustness of our results to two seemingly important features of our model, proportional representation and the linear effect of legislative vote share on policy.

As an alternative to proportional representation, consider electing a unicameral legislature in a single-member district system. Policy would be formed as in (4) except that vote share would be replaced by seat share. Ingberman and Rosenthal (1995) show that a result analogous to the pivotal voter theorem characterized by (13) and (14) would hold except that the pivotal voter in the national legislative constituency is replaced by the median (or 'expected' median) voter in a pivotal constituency. Thus, as the second stage equilibrium would be qualitatively similar to that in this paper, our results would go through with this change in the electoral system.

As an alternative to the linear compromise function (4), consider the polar opposite case where control of both the executive and the legislature are decided by simple majority rule. Let the policy $x = \alpha\psi_E + (1-\alpha)\psi_L$, where ψ_E denotes the platform of the party winning the executive and ψ_L, the platform of the party winning the legislature. In the case where the parties have symmetric ideal points ($\theta_D = 1-\theta_R$) and where $\alpha = 1/2$, it is possible to derive closed-form results (available on request) for equilibrium platforms and compare them to those for the standard model of $\alpha = 1$. As in the model presented in this paper, platforms are more polarized in the compromise model than in the standard model.[21] Thus, what drives our results is the basic process of compromise induced by checks and balances rather than either the specific electoral system or the specific form of compromise we have used in our formal analysis.

4. Conclusion

The basic implications of our model of checks and balances are well conveyed by our analysis of the case where the parties are symmetric about the median. In this case, as far as polices are concerned, the results are close to the Wittman–Calvert–Roemer outcomes. We know, from the theory presented in Section 3, that if a change in platform has no impact on the policy associated with the opposition's victory, policies will always exactly equal the Wittman–Calvert policies, whatever the platforms. Even when, in our model, the parties have the ability to pull the opposition's policy, we found that policies were only slightly more polarized than the Wittman–Calvert policies. This is because the electorate takes advantage of the 'checks and balances' represented by the compromise function to moderate the policy represented by the platform of the party winning the presidency.

Moderating institutions do, however, have a big impact on platforms. They cause them to be more divergent than in a purely presidential regime. For our specification, the divergence can be substantial; when the legislature is sufficiently strong, parties may even adopt policies more extreme than their ideal points. The

[21] However, we do not find posturing in the majoritarian model. The intuition is that in the majoritarian model an extremist party risks losing the legislature in toto whereas in the linear model (4), an extremist party will retain some influence even as a minority party in the legislature.

intuition is that the parties, as well as the voters, ultimately care about policies not platforms. Thus, on the one hand parties know that, since they will be moderated by the opponent, they have to adopt extreme positions to pull the actual policy close to their ideal. On the other hand, extreme policies are not 'punished' by the voters because they know that they will translate into moderate policies. Obviously, the parties do not want to be so extreme as to make too great a sacrifice of the probability of victory, but the moderation effect of checks and balances affects the nature of this trade-off.

The amount of divergence depends, in our model, on the relative strength of the electoral motivation versus the partisan motivation. The more the parties are motivated to win, the more they will converge. In fact, it can be shown that whenever parties are sufficiently electorally motivated to converge in a purely executive regime they also converge under our executive–legislative compromise institution. But whenever parties are sufficiently policy-oriented to diverge, divergence is accentuated in a system of checks and balances.

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Appendix. Proof of the Corollaries to Proposition 1

A.1. Corollary 1

1. If the parties are equidistant from the median, $P(\hat{\theta}) = 1/2$ follows immediately from (16).
2. If $1/2 \leq \psi_D < \psi_R$, $P(\hat{\theta}) < 1/2$ since voters to the left of D have a dominant strategy of voting D for president.
3. Reparametrize (16) in terms of $\varepsilon \equiv \psi_R - \psi_D$ and $\gamma = \psi_R + \psi_D - 1$. Then for ε fixed, algebraic manipulation shows $\partial\hat{\theta}/\partial\gamma$ is a constant. From steps 1 and 2, we know that, since the derivative is constant, its sign must be positive.

Therefore, the party closer to the median, for ε fixed, must be favored to win the election. Since ε is arbitrary, the corollary is proved. Q.E.D.

A.2. Corollary 2

Algebraic manipulation of (16) shows that the two cutpoints are equal if and only if either $\gamma = 0$ or $\alpha = 1$ (in which case the legislative cutpoint is irrelevant) or $\alpha = 0$ (in which case the presidential cutpoint is irrelevant). Q.E.D.

A.3. Corollary 3

We must find the condition for which $\hat{\theta}$ and $\tilde{\theta}$ are simultaneously greater than one-half. From Corollary 1 we know $\hat{\theta} > 1/2$ if $\gamma = 0$. Using this result, Eq. (16) and further algebraic manipulation of the inequality $\tilde{\theta} > 1/2$, leads to the result. Q.E.D.

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