



Sequential elections and overlapping terms: voting for US Senate

Jac C. Heckelman *

Department of Economics, Wake Forest University, P.O. Box 7505, Winston-Salem, NC 27109-7505, USA

Received 14 July 1998; received in revised form 8 March 1999; accepted 15 December 1999

Abstract

This paper presents a model in which voters attempt to balance the ideological positions of their Senate representatives. Candidate positions are determined endogenously through a primary system. The median voter theorem is applied in each election to determine winning platforms based on voter preferences which may differ from their individual bliss points. Contrary to the original median voter theorem, the main implications of this model are that: (i) convergence on platform positions is not achieved in the general election, and (ii) extremist candidates defeat moderates in the stable long-run equilibrium. ©2000 Elsevier Science B.V. All rights reserved.

JEL classification: D72; H11

Keywords: Divided government; Median voter model; Primary elections

1. Introduction

The traditional median voter model predicts that two candidates will converge to identical positions in policy space when announcing their policy position (Hotelling, 1929; Downs, 1957). This model has often been criticized (Hinich, 1977; Shepsle, 1991; Bender and Lott, 1996) and does not usually hold up to empirical scrutiny (Jung et al., 1994; Levitt, 1996; Schmidt et al., 1996). There have been several advances in the spatial competition literature which try to reconcile this empirical observation, two of which are incorporated into the model proposed here.

Aranson and Ordeshook (1972) envision elections as a two-stage game in which party nominees must first be supported by party voters prior to the general election. Non-convergence in the general election is thus to be expected once the role of primary elections is included in the Downsian model.

* Tel.: +1-336-758-5923; fax: +1-336-758-6028.
E-mail address: heckeljc@wfu.edu (J.C. Heckelman).

In a separate vein, divided government models seek to explain why voters split their tickets across parties for different offices in the same election. In this branch of the spatial location literature, voters seek to balance the overall representation of government.

Fiorina (1988) describes a scenario in which voters in the middle of the political spectrum vote for opposite parties for president and Congress. Voters look to achieve a balance between their congressional candidate and the president. Which of the voters split their tickets depends upon their perception of policy power for the president vis-a-vis Congress.

In Alesina and Rosenthal's (Alesina and Rosenthal, 1995) highly stylized model, a single electorate votes for president and the legislature, where legislative seats are assigned by proportional representation. Policy outcomes are then a weighted average of the executive and legislative composition.

Uncertainty in the form of random preference shocks leads to electoral cycles although the expected policy outcome from each election coincides with the position of the pivotal voter (who is not necessarily the median voter).

In this paper, a model is developed which integrates both of these aspects in a standard Downsian median voter framework. It will be shown that a model utilizing many of the standard assumptions governing electoral behavior used throughout the median voter literature, when combined with primary elections and balancing representation, predicts that extremists will often be elected to counter current representation.

Jung et al. (1994) criticize the median voter model for being unable to explain why senators from the same state often vote differently, and still get re-elected.¹ This paper will be able to answer that question. Since convergence to the median position does not occur in an election with a primary system, future elections are affected by this outcome when politicians serve overlapping terms. As Senate terms overlap, senatorial elections are interdependent with the previous election. Tracing the effect of interdependent Senate elections over time suggests that voters from each state will be represented by extremely divergent positions. A direct result of the model leads to the persistence of these extremist politicians over a series of elections, presenting a theoretical justification for the well documented trend of an incumbency advantage (Zupan, 1991).

Aranson and Ordeshook considered primaries in a static model because they implicitly assumed that elections involving a different set of candidates are independent of other election results. Although candidates do not converge in policy space in their model, the same two choices should be expected in every election. There is no reason to expect the median voter to alter her choice, except by randomizing. In that case, it is unlikely to have incumbents remain in office for very long. Either both senators should hold the same position, or turnover should be much higher than it actually is. Thus, primary elections by themselves are not enough to explain divergent Senate representation.

A common trait in the divided government models is that platform positions are determined exogenously. Platform divergence is assumed rather than derived. Parties have different ideological positions and the politicians are defined only by party. Thus, the electorate votes for the party, not individual candidates, since all candidates within each party are homogenous.

¹ A similar objection is also raised by Bender and Lott.

A slightly different approach to divided government is taken in this paper. Candidate positions are determined endogenously through a primary system where, as in Wittman (1990), the median voter of each party determines the winner. Thus, it will be shown that even pure office-seeking politicians can result in divided government and extremist success. Since the concern here is with Senate representation, the model assumes voters balance across politicians in a single branch of government, instead of across branches of the government. Although the role of the executive is not included in the analysis here, a similar approach can also be used to develop a more fully integrated model.

Although derived independently, this study has much in common with an important working paper by Alesina et al. (1991) (A-F-R, hereafter). Both studies attempt to explain the prevalence of divergent Senate positions in a given state and utilize many of the same assumptions. However, there still are important differences. A-F-R follow the traditional mold of most divided government models by simply assuming that the two parties hold different positions, whereas this study derives this implication by including the party nomination process. When they do allow for endogenous positioning, A-F-R invoke the additional assumption of uncertainty over voter preferences, whereas, in this paper, preferences are common knowledge and voting is deterministic. The two studies also complement each other. Although A-F-R only explicitly consider a static model, they conjecture that Senate divergence will increase over time. The dynamic model presented here formally derives this result and thus offers support for their hypothesis. A-F-R also offer empirical support for their predictions of Senate position balancing, and therefore, also for the model presented here.

The rest of the paper is outlined as follows. Section 2 outlines the median voter model and the importance of primary elections. Section 3 discusses the dynamics of sequential elections when officials serve overlapping terms. Section 4 offers suggestions for further research through extending the model and outlining potential empirical implications. Section 5 concludes the paper by summarizing the results.

2. Sequential elections

2.1. Assumptions

Down's (Downs, 1957) median voter model utilizes the following assumptions:²

1. The issue space is single-dimensional.
2. Voters have symmetrical single-peaked preferences.
3. There are no abstainers.
4. Voters vote sincerely.
5. There are two candidates in each election.
6. Elections are decided by plurality rule.

To simplify the analysis, the following additional assumptions are also invoked:

7. Voters' bliss points are uniformly distributed.
8. Policy positions are fixed once they are announced.

² Many of these assumptions are also implicit in Alesina, Fiorina and Rosenthal.

The assumption of a uniform distribution of voters is not critical. Downs also considered several alternatives, including normal and bimodal distributions. The median voter result held each time. A uniform distribution will greatly simplify the analysis in the next section.

Assumption (8) is admittedly very restrictive, but still common in the literature on spatial voting. It is tantamount to assuming that changing positions is infinitely costly. Candidates cannot react to rival positions and must choose the best position a priori. This often results in the curious prediction that incumbents are at a disadvantage to their challengers who are free to pick any position (Bernhardt and Ingberman, 1985). Even with this assumption, the sequential model presented in Section 3 will quickly result in an advantage for the incumbent. Early models often assumed costless relocation, so two candidates would be expected to eventually converge to the median voter regardless of their initial positions (Hotelling, 1929; Downs, 1957; Eaton and Lipsey, 1975). The assumption of costly movements can be rationalized on the grounds that constant movement abuses the voters' trust. In a dynamic setting, politicians have reputations they need to preserve (Bernhardt and Ingberman, 1985; Harrington, 1993).

2.2. Median voter result

Using the assumptions listed in the previous section, I will now outline the basic median voter result and then consider how primary elections alter the result. I rely upon Nash equilibria to determine the optimal candidate locations. A Nash equilibrium exists when neither candidate will be able to gain additional votes by changing his position in the policy space given the position of his opponent.

Denote the set of voters $V = \{1, \dots, N\}$ and voter i 's bliss point as b_i . Under the assumption of two-party competition, let the parties each control half the electorate on the line interval $[-X, X]$ such that all $V_L \in [-X, 0)$ vote in the leftwing primary and all $V_R \in (0, X]$ vote in the rightwing party primary. The uniform distribution of voters thus implies $N_L = N_R = 1/2N$.³ Candidates can choose any platform on their party's side. The Nash equilibrium results in an announced outcome $\Pi = \{L, R\}$ where $L \in [-X, 0]$, $R \in [0, X]$. Voters can choose to vote for either the leftist candidate, L , or the rightwing candidate, R , in the general election. For the purposes of this paper, define any candidate located exactly at the median position as a 'moderate' ($L=0$ or $R=0$). Similarly, define any candidate located at either endpoint of the spectrum as an 'extremist' ($L=-X$ or $R=X$).

We can expect the median voter to be decisive in the general election. Assumption (7) places the median voter, V_M , at 0 so her bliss point is denoted by $b_M=0$. If, for example, the leftist candidate chose $L \neq 0$, that candidate would certainly lose to an opponent who chose $R=0$. Both candidates should choose the median position, since all other positions are inferior, resulting in $\Pi = \{0, 0\}$. This is the basis for the median voter theorem, which predicts candidates will moderate their positions to gain as many votes as possible.

The question remains as to how these candidates came to represent their respective parties in the general election. Parties nominate their candidates in a primary election first, and the winner of the primary election advances to the general election. The median voter

³ Technically, $N_L = N_R < 1/2N$, but asymptotically, voters at any one point (in this case, $V_i=0$) can be ignored without any loss of information.

of the primary election decides who represents her party (Wittman, 1990). Denote the median party voters as V_{ML} , V_{MR} . Since voters are uniformly distributed in their parties and everyone votes, a leftist candidate choosing the b_{ML} position cannot lose the primary election. Similarly, R will choose b_{MR} . This results in the outcome $\Pi = \{-1/2X, 1/2X\}$.

The implication from this result is that candidates do not enter the general election at the overall median position. They first had to secure their primary victory resulting in the announced positions at the party medians.⁴ In the general election, then, L and R split the electorate and V_M is indifferent. The median voter will be decisive, but the median position is not held by either candidate and the election winner is a toss-up. However, it will be shown in the next section that the sequential election result $\Pi = \{-1/2X, 1/2X\}$ is an unstable equilibrium when voters do not view elections as independent events.

3. The role of overlapping terms

Consider now political offices where terms overlap, such as in US Senate elections where senators serve staggered 6-year terms. Realizing this, and assuming voters care about overall office representation, the results from Section 2.2 will not hold in senatorial elections. Voters need to elect their senators while another senator is already in office.

If voters recognize that state representation is likely to be a *compromise* among both office holders, they should vote for candidates that represent the compromise which comes closest to their bliss point. The dynamics of the senatorial primaries will then be fundamentally different from the single representative scenario described in the previous section. Voters' bliss points remain stable, but their preferred candidate positions will change. These voters favor candidates that can offer representation that coincides with their bliss point. The independent elections model predicts that voters always vote for candidates closest to their bliss point but that should only hold if that candidate can be expected to deliver those policies.

Should voters care about balancing the positions only of their individual senators or for the entire Senate? It seems more plausible that voters would reward their senators based upon their personal voting record and not upon specific legislation that is enacted or not. For example, an individual voter should be happy with the performance of a senator that votes against (for) legislation she opposes (favors), even if this senator is in the minority and it does (not) pass. Similarly, this voter should not be satisfied with the performance of a senator that votes against (for) legislation she likes (opposes), even if the proposal is (not) passed; i.e. voters do not hold their own senators accountable for how other senators, who are not designated to represent their state, vote on legislation.

Having two state representatives should be accounted for by voters. Denote these voters as 'Dual-representation voters' to reflect their consideration of both of their potential state representatives during each election. This is consistent with recent studies of Senate voting. For example, Francis and Kenny (1996) define the median state position in their empirical

⁴ If candidates could costlessly change their positions, we would expect them to converge to $\Pi = \{0,0\}$ for the general election. It is more realistic to assume that candidates need to protect their reputations; otherwise, they risk alienating their primary supporters by announcing new positions (Aranson and Ordeshook, 1972). Assumption (8) ensures this will not occur.

model to be the average of the two senatorial positions, which would be consistent with the notion of conscious voter balancing of the two senators. To make this behavior explicit in the model developed here, it is necessary to invoke an additional assumption on how voters view their senators, which is based on the notion that each senator is allowed one and only one vote per issue.

Assumption (9): senators share representation equally.

Let W_{it} , represent V_i 's preferred candidate in the t -th election and S_{t-1} , represent the position of the incumbent office holder not up for re-election, i.e. the senator who has not yet fulfilled his current term in office.⁵ Finally, let $\Pi_t = \{L_t, R_t\}$ represent the announced positions for the t -th election where L_t, R_t , are the primary winners for that election.

Voters know S_{t-1} is still in office and will have an impact on policy decisions. Dual-representation voters want to support a politician who, when combined with the other senator already in office, will tend to support policy decisions that adequately represent their interests. The divided government models generally assume policy is based upon an undetermined weighted average between presidential and legislative preferences. Fiorina (1988) suggested a 3:2 ratio would be an appropriate approximation for this parameter. In the Senate model considered here, the balancing representation is across individuals within the Senate, rather than across branches of the government. Thus, Assumption (9) indicates that an equal weight for each senator would be proper and is consistent with Francis and Kenny as explained above.

This suggests the first result for Senate elections.

Proposition 1. *Dual-representation voters prefer senatorial candidates to hold position $W_{it} = 2b_i - S_{t-1}$.*

Proof. From Assumption (9), we have

$$b_i = \frac{1}{2}(W_{it} + S_{t-1}). \quad (1)$$

To discover the preferred candidates, solving (1) for W_i yields

$$W_{it} = 2b_i - S_{t-1}. \quad (2)$$

□

For example, if $R=1/2X$ is currently in office, V_M prefers a candidate located at $W_{Mt} = -1/2X$ in the next election since $b_M=0$, and $S_{t-1}=1/2X$. As the sitting senator is relatively conservative, V_M does not wish to elect a new senator that exactly matches her bliss point knowing the compromises will still be too conservative for her tastes. She prefers instead a more liberal politician who can fully offset the current conservative.

Proposition 1 is a general condition for all voters. By concentrating on the party medians, a result can be derived for party representation in the general election.

Proposition 2. *If Assumptions (1)–(9) hold, any candidate holding position $L_t = \text{MAX}\{-X, -X - S_{t-1}\}$ cannot lose the Left party primary and any candidate holding position $R_t = \text{MIN}\{X - S_{t-1}, X\}$ cannot lose the Right party primary, i.e. $\Pi_t = \{\text{MAX}\{-X, X - S_{t-1}\}, \text{MIN}\{X - S_{t-1}, X\}\}$.*

⁵ Alesina, Fiorina, and Rosenthal refer to this senator as the ‘anchor’.

Proof. Since (2) is a monotonic transformation of voter bliss points, the party medians will still be decisive in their respective primaries. Voter bliss points are stable, so we can solve directly for the median voters' preferred candidates in each primary election. Substituting $b_{MR}=1/2X$ and $b_{ML}=-1/2X$ into (2) yields

$$W_{MRt} = X - S_{t-1} \tag{3}$$

$$W_{MLt} = -X - S_{t-1}. \tag{4}$$

Since this result is derived for any S_{t-1} position, (3) or (4) may be outside the line interval endpoints of which politicians are constrained. If $S_{t-1} \leq 0$, $W_{MLt} = -X - S_{t-1} \in (-X, 0]$ from (4). But if $S_{t-1} > 0$, $W_{MLt} = -X - S_{t-1} < -X$. This can be interpreted as claiming that V_{ML} wants the most extreme liberal possible. Thus, to constrain voters and politicians to intervals established in Assumption (1), this result can be generalized as $W_{MLt} = \text{MAX}\{-X, -X - S_{t-1}\}$, since $-X - S_{t-1} > -X$ if and only if $S_{t-1} > 0$. Similarly for W_{MRt} . \square

The main implication from this model yields a result in stark contrast to the original median voter theorem of candidate convergence to the median position.

Proposition 3. *Extremists will always be elected to the Senate.*

Proof. Without loss of generality, assume $S_{t-1} \in (0, X]$ is currently in office. In the general election, the overall median voter is still decisive. From (2),

$$W_{Mt} = -S_{t-1} \tag{5}$$

Assumption (2) implies V_M votes for L_t if and only if $|W_{Mt} - L_t| < |W_{Mt} - R_t|$. From (3) and (4), $\Pi_t = \{-X, X - S_{t-1}\}$. Then,

$$|W_{Mt} - L_t| = |-S_{t-1} - (-X)| = X - S_{t-1} \tag{6}$$

$$|W_{Mt} - R_t| = |-S_{t-1} - (X - S_{t-1})| = X \tag{7}$$

Since $S_{t-1} > 0$ by construction, it follows that (6) < (7). Thus, all voters $V_i \in [-X, 0]$, which includes V_M , vote for $L_t = -X$ ensuring that candidate's election to the Senate.

If instead $S_{t-1} = 0$, it is not clear who V_M will vote for in the general election. But in this case, $\Pi_t = \{-X, X\}$, so whichever way she does vote, her only choice is between two extremists, so again, an extremist must win. \square

The implication from the proof of Proposition 3 is that V_M will always prefer the opposite party nominee to balance the positions of the current sitting senator. This is supported by Schmidt et al. (1996) who found that Democratic senatorial candidates are more likely to win an election when the other Senate seat is already held by a Republican.

Proposition 3 also reveals that the median voter never votes for a candidate located at her bliss point. The only time she wants to vote for a median candidate ($W_{Mt} = b_{Mt} = 0$) is when $S_{t-1} = 0$, but as shown above, her ideal candidate preference will not be available due to the primary system. Whereas the original median voter theorem predicts the best success for moderate candidates and the absence of extremists, Proposition 3 suggests just the opposite. There will always be an extremist candidate in the general election, and the extremists will collect the most votes.

The long-run equilibrium follows directly from the proof of Proposition 3. One extremist in office will then be balanced by an extremist from the other party in the next election. Voters will continue to balance their representatives in future elections. This implication is formalized in the next proposition.

Proposition 4. *The stable long-run equilibrium returns opposing extremists to office.*

Proof. Starting from any position $S_{t-1} \in [0, X]$, it was shown in Proposition 3 that the winner of the next election will be an extremist. Following the same analysis, if $S_t = -X$, it can be shown that the next election will result in $\Pi_{t+1} = \{0, X\}$, and from (5), $W_{Mt+1} = X$, so $S_{t+1} = X$.

At this point, both office holders are extremists and the process will continue to repeat. Specifically,

$$\begin{cases} \Pi_{t+f} = \{0, X\}, & S_{t+f} = X, & \text{when } f \text{ is odd,} \\ \Pi_{t+f} = \{-X, 0\}, & S_{t+f} = -X, & \text{when } f \text{ is even,} \end{cases} \quad (8)$$

□

Thus, $S_t = -X$ and $S_{t+1} = X$ will win their own future primaries and the general elections.

This results in a stable equilibrium where each election entails the persistence of differentiated extremists. Proposition 4 suggests an alternative rationale for Jung, Kenny, and Lott's (Jung et al., 1994) finding of two opposite party, ideologically-opposed senators in office. Their model relied upon each senator campaigning on separate issues to win re-election but the Dual-representation Senate model explains that even a single issue policy space can result in split-representation under a given set of assumptions.

Eq. (8) also makes clear that, in each election in the stable equilibrium, voters are faced with both an extremist and a moderate. The original median voter theorem, in which voters vote for the candidate who comes closest to their bliss point, suggests that the moderate should win easily in this election, capturing $3/4N$ votes. However, by implication of Proposition 1, a Dual-representation electorate that chooses to balance representation awards the moderate only $3/8N$ votes, and he loses to the extremist.

4. Avenues for future research

4.1. Model extensions

The model presented here was limited to the case of two candidate elections. The median voter theorem is not applicable for more than two candidates and Cox (1987) has shown that three or more candidates will typically not result in platform convergence. Extensions of the Senate model, presented in an earlier version of this paper (Heckelman, 1997), show that, when an independent party candidate enters the general election or a continuum of candidates is considered for primary elections, Proposition 4 will still hold true.

The analysis thus far has only considered the case of sincere voting where each voter chooses the candidate who minimizes the spatial distance between the announced position and their own preferred position for the candidate (which may diverge from their own personal bliss point when balancing). In the primary elections, strategic voters may also

consider who their nominee will eventually face in the general election. This would add an additional level of complexity to the voter calculus as these sophisticated voters would need to make conjectures as to the winning position of the other party's nominee; at the same time, voters in that primary are forming conjectures regarding the position of their nominees. This type of uncertainty would require a game-theoretic formulation to voter choices. For the case of purely independent elections, Aranson and Ordeshook (1972) and Coleman (1972) show concerns that the general election will lead candidates to move closer to the overall median position in the primaries, but convergence to the overall median will still not be achieved. Although the stable long-run equilibrium of opposite extremists holding office simultaneously is not upset by strategic voting in the primaries,⁶ this type of voter behavior may prevent the long-run equilibrium from being achieved. Thus, a potential extension of the model would be to fully characterize the dynamics of highly sophisticated voters who consider both the known position of the sitting senator and also the unknown position of the other primary winner. On the other hand, Southwell (1991) has determined empirically that strategic behavior properly characterizes less than 20% of the primary voters and does not alter the primary outcomes.

Finally, as noted in Section 1, a fully integrated model in which voters balance the weight of their representatives in both houses against the remaining members of Congress and the president could be attempted, while still incorporating the importance of primary elections. This model would then require voters to make additional conjectures on who will be elected by other states and districts since the ensuing overall composition of Congress (and the presidency in 1-year elections) will be unknown at any given election. The framework developed here is rich enough to deserve further applications to sequential elections which I leave for future work.

4.2. Empirical applications

The Dual-representation model reveals the importance of including relevant political institutions when studying voting behavior. The analysis suggests that outcomes may be altered by the presence of primaries and active voter balancing. Without primaries, only the state median voter is pivotal and balancing by other voters will be ineffective. Primaries, however, force candidates away from the state median towards the party medians, and thus, primary winners will not hold moderate positions, forcing the state median voter to adopt a balancing position in the general election. Without primaries, the uniqueness of overlapping terms for senators is irrelevant. Primaries, along with overlapping terms, lead to Senate divergence within each state.

Thus, one testable implication from the model turns on the relationship between primaries and Senate divergence. This is the main difference between the model presented here and the model by A-F-R. It would be ideal to compare those states with primaries against

⁶ The intuition behind this result, formalized in Heckelman (1997), is as follows. The stable equilibrium requires both senators to be extremists. Without loss of generality, let $S_{j-1} = X$. From (5) and (4), $W_{M_i} = W_{M_{L_i}} = -X$. Thus, leftist voters need not nominate a more centrist candidate to ensure that their nominee wins the general election. Similarly, no rightwing party nominee can achieve electoral victory. Thus, no voter has an incentive to misrepresent their preferences in the primary.

those without, but unfortunately, only Louisiana has a purely non-partisan single election without an initial primary screening. However, not all states employ the pure closed primary system as developed here. For example, some states allow unaffiliated voters to enter either primary each election or allow affiliated voters to choose which primary they wish to vote in on primary election day. As the pure closed primary predicts the maximal amount of divergence, and no primary predicts minimal divergence, these semi-closed or semi-open primaries are likely to generate divergence in between the two extremes. To properly answer this question, it would be useful to develop a model of how independent and partisan voters allocate themselves in different primary systems, even if for purely independent elections such as for governor, and then adapt that model to the case of balancing across Senate seats.

There is also an implication from the model developed here regarding the importance of dual-representation. Recall that, without over-lapping terms, there is no need to balance politicians across elections and we return to Aranson and Ordeshook's original single-period primary election model. This difference could be potentially exploited by contrasting the two senators against the state governor since the same electorate elects all three politicians. Since each state has only a single governor, but two senators, voters do not need to balance gubernatorial candidates as they do senatorial candidates, and the model presented in Section 2.2 shows candidates converging to the party median positions in each primary. Without the need to balance candidates, the primary dynamics remain stable in each election year. The state median must then choose between one of the two party median positions in each general election. Thus, governors would be expected to be more moderate than either of the two senators who are predicted to hold opposing extremist positions.

Unfortunately, while senators are rated by a large number of interest groups, no ranking for gubernatorial ideology currently exists since governors do not vote directly on pending legislation. Until an ideology index for governors can be constructed similar to that for senators, this implication regarding the relative ideological positions of governors vis-a-vis senators will likely remain an untestable hypothesis.

5. Conclusions

The inclusion of primary elections can result in platform divergence, even within a median voter framework. The medians of the two parties nominate their preferred candidates, and if announced positions are fixed, convergence in the general election does not occur.

Analyzing the process over a series of elections results in differentiated candidates being elected in order to counter-balance the policy preferences of the other office holder. Voter preferences 'change' because voters are not solely concerned with the election outcome, instead caring about the governmental representation that results. Since a single elected official is not all-powerful, voters will weigh the politician's potential contribution to state representation.

The median voter will alternate her party support in successive elections. This results in what appears to be a strong party advantage in every election, but not necessarily an incumbency advantage. Eventually, extremists will be elected, and only they enjoy repeated electoral success. The long-run stable equilibrium results in extremists from each party gaining office in alternate elections.

This implies that the original median voter theorem results in an unstable equilibrium for offices with over-lapping terms. If at some point a non-zero candidate is elected, the median voter will not vote for future zero candidates since there will be a need to counter the non-zero in office. Additionally, primary elections ensure that the long-run equilibrium for these elections will result in two extremists from opposite parties holding office. This divided government result should not be interpreted as support for grid-lock or the status quo (Zupan, 1991); voters may prefer compromised policies to be enacted that will accurately reflect the moderate view of the median voter.

Acknowledgements

This paper has benefitted substantially from critical comments by Lawrence Kenny, Dennis Coates, Jonathon Morstein, Darren Grant, Andrew Yates, participants at the IRSS Working Group in Political Economy at University of North Carolina, Chapel Hill, Public Economics workshop at University of Maryland, Department of Economics workshop at Wake Forest University, and the 1997 Public Choice Society meetings in San Francisco.

References

- Alesina, A., Rosenthal, H., 1995. *Partisan Politics, Divided Government, and the Economy*. Cambridge University Press, Cambridge.
- Alesina, A., Fiorina, M., Rosenthal, H., 1991. Why are there so many divided senate delegations? NBER working paper no. 3663.
- Aranson, P., Ordeshook, P., 1972. Spatial strategies for sequential elections. In: Niemi, R., Weisberg, H. (Eds.), *Probability Models of Collective Decision Making*. Merrill, Columbus, OH, pp. 298–331.
- Bender, B., Lott Jr, J.R., 1996. Legislator voting and shirking: a critical review of the literature. *Public Choice* 87, 67–100.
- Coleman, J., 1972. The positions of political parties in elections. In: Niemi, R., Weisberg, H. (Eds.), *Probability Models of Collective Decision Making*. Merrill, Columbus, OH, pp. 332–357.
- Cox, G., 1987. Electoral equilibria under alternative voting institutions. *American Journal of Political Science* 31, 82–108.
- Bernhardt, M.D., Ingberman, D., 1985. Candidate reputations and the ‘incumbency effect’. *Journal of Public Economics* 27, 47–67.
- Downs, A., 1957. *An Economy Theory of Democracy*. Harper and Row, New York.
- Eaton, B.C., Lipsey, R., 1975. The principal of minimum differentiation reconsidered: some new developments in the theory of spatial competition. *Review of Economic Studies* 27, 27–49.
- Fiorina, M., 1988. The Reagan years: turning to the right or groping to the middle? In: Cooper, B., Kornberg, A., Mishler, W. (Eds.), *The Resurgence of Conservatism in Anglo-American democracies*. Duke University Press, Durham, pp. 430–459.
- Francis, W., Kenny, L., 1996. Position shifting in pursuit of higher office. *American Journal of Political Science* 40, 768–786.
- Harrington, J., 1993. Electoral selection and the survival of idealogues, paper presented at the American Political Science Association meetings in Washington, DC.
- Heckelman, J., 1997. A dynamic model of sequential elections with overlapping terms, paper presented at the Public Choice Society meetings in San Francisco, CA.
- Hinich, M., 1977. Equilibrium in spatial voting: the median voter result is an artifact. *Journal of Economic Theory* 16, 208–219.
- Hotelling, H., 1929. Stability in competition. *Economic Journal* 39, 41–57.

- Jung, G.-R., Kenny, L., Lott Jr, J., 1994. An explanation for why senators from the same state vote differently so frequently. *Journal of Public Economics* 54, 65–96.
- Levitt, S., 1996. How do senators vote? Disentangling the role of voter preferences, party affiliation and senator ideology. *American Economic Review* 86, 425–441.
- Schmidt, A., Kenny, L., Morton, R., 1996. Evidence on electoral accountability in the US Senate: are unfaithful agents really punished? *Economic Inquiry* 34, 545–567.
- Shepsle, K., 1991. *Models of Multiparty Electoral Competition*. Harwood Academic Publishers, Chur, Switzerland.
- Southwell, P., 1991. Open versus closed primaries: the effect of strategic voting and candidate fortunes. *Social Science Quarterly* 72, 789–796.
- Wittman, D., 1990. Spatial strategies when candidates have policy preferences. In: Enelow, J., Hinich, M. (Eds.), *Advances in the Spatial Theory of Voting*. Cambridge University Press, Cambridge, pp. 66–98.
- Zupan, M., 1991. An economic explanation for the existence and nature of political ticket splitting. *Journal of Law and Economics* 34, 343–370.