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The Optimal Degree of Polarization

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Introduction

Part of the literature on electoral politics in a two-party system is based on the assumption that political parties are motivated by policy outcomes. The seminal papers are Wittman (1977, 1983) and Hibbs (1977). One of the objectives of this literature is to provide an explanation for policy divergence. In partisan models, political parties usually have incomplete information about voters' preferences. The implication is probabilistic voting: the probability that a party wins the elections is a smooth function of parties' policies. When parties can commit themselves to implement their platform, if elected, probabilistic voting is a necessary condition for policy divergence (Calvert, 1985).

On the normative side, full convergence of parties' platforms is regarded as socially optimal. Myerson (1995, p.78) writes:

> In fact, with risk-averse voters, an equilibrium in which both parties have a positive probability of winning can be Pareto-efficient only if the two parties converge to the same position.

Persson and Tabelini (2000, p.100) state:

> Because candidates and pivotal voters have concave utility over [the policy variable] g, they all have long-run preferences for a stable policy in the middle rather than a policy that shifts back and forth as governments change.

Furthermore, in quite a few extensions of the median voter model, the optimality of the convergence of parties' platforms is taken as a starting point. Alesina (1988), for example, examines an infinitely repeated election game as a way to Pareto-improve on the one-shot Nash with no convergence. More recently, Ortuno Ortin and Schultz (2000) compare different systems of the public funding of political parties, using as criterion the degree to which these systems promote policy convergence.

This paper points out that when probabilistic voting is the result of incomplete information about voters' preferences, full convergence of policy is not socially optimal. footnote The reason is that policy divergence enables voters to correct policies that are based on a wrong perception of voters' desires.

This paper is organized as follows. The next section discusses a simple model of electoral competition that follows the lines of Wittman (1983) and Calvert (1985). However, like Roemer (1994), we explicitly model the way party platforms affect the election outcome. Section 3 presents the equilibrium of the political game. In Section 4, we derive the optimal degree of policy divergence. We show that more uncertainty about voters' preferences increases the optimal degree of policy divergence. Section 5 concludes.

The Model

This section discusses a simple model of two-party electoral competition. The parties, labeled L and R, have preferences defined on policy outcomes. In addition, the parties receive (exogenous) rents from holding office. Party L's preferences are represented by the following function:

$$U^L = -(X-\theta^L)^2 + \lambda dum_L \qquad \lambda > 0 \qquad \#$$

where X denotes the policy outcome, θ^L is party L's bliss point, λ denotes the rents from holding office, and dum_L is a dummy variable, taking the value one if party L is in office, and taking the value zero otherwise. Party R's preferences are represented by a similar function:

$$U^R = -(X-\theta^R)^2 + \lambda(1-dum_L), \qquad \#$$

where θ^R is party R's bliss point. Parties have different preferences over policy outcomes. To minimize straightforward algebra, we assume that $\theta^R = -\theta^L > 0$. Voters know (ref: 1) and (ref: 2).

Voters differ in their preferences over policy outcomes. Voter i's preferences are represented by:

$$U^i = -[X - (\theta^i + \mu)]^2, \quad \#$$

where $\theta^i + \mu$ denotes voter i's ideal policy. To reduce notation, we assume that the median voter is characterized by $\theta^i = 0$. The parameter μ captures that voters' bliss points are subject to shocks. We assume that μ is uniformly distributed on $[-z, z]$. Parties do not observe μ when choosing their policies. There are several interpretations of μ. Let us mention three of them. First, political parties may be more dogmatic than voters in the sense that parties are less sensitive to changes in the environment than voters (Harrington, 1993). Second, political parties are alienated from voters and do not observe the real consequences of their policies. Third, between the moment that parties announce their policies and the election date, new information about policy may become available. The idea that parties are uncertain about voters' preferences is supported by the fact that parties often turn to polls to ascertain voters' preferences. In practice, polls do not speak in one voice. Consequently, parties are not perfectly able to predict voters' responses to policies.

The assumption that μ is the same for all voters is extreme, especially against the background that parties do not know μ when choosing X^L and X^R. However, this assumption is not crucial for our results. What matters is that parties are uncertain about the median voter's bliss point.

Platforms

An electoral equilibrium of the voting game is a pair of policies (X^L, X^R) such that (i) X^L maximizes party L's expected utility given X^R; and (ii) X^R maximizes party R's expected utility, given X^L. Let us first determine how X^L and X^R affect the probability that party R wins the elections. In line with our assumptions about parties' preferences, we assume that $X^R \geq X^L$. Since preferences are single peaked and policy is one-dimensional, the vote of the median voter is decisive. The median voter casts her ballot for party R if X^R delivers higher utility than X^L: footnote

$$-(X^R - \mu)^2 > -(X^L - \mu)^2. \quad \#$$

Party R thus wins the elections if:

$$\mu > \frac{1}{2}(X^R + X^L). \quad \#$$

Equation (ref: 5) shows that the party whose policy is closest to the median voter's bliss point wins the elections. Since parties do not know μ when choosing their policies, the election outcome is uncertain. The probability that party R wins the election is equal to:

$$\Pr\left[\mu > \frac{1}{2}(X^R + X^L)\right] = \frac{1}{2z}\left[z - \frac{1}{2}(X^R + X^L)\right] \quad \#$$

Equation (ref: 6) reflects a well-known property of probabilistic voting models (Wittman, 1977, 1983; Calvert, 1985; Alesina, 1988). The probability that a party wins the elections is a continuous function of X^L and X^R. Ruling out corner solutions, party R decreases its chances of winning the elections by increasing X^R. Likewise, an increase in X^L decreases party R's probability of winning the elections. Thus, if one party moves its platform toward that of the other party, it increases its chances of winning the elections.

When choosing X^R, party R maximizes:

$$- \frac{1}{2z}\left[z - \frac{1}{2}(X^R + X^L)\right](X^R - \theta^R)^2$$
$$- \frac{1}{2z}\left[z + \frac{1}{2}(X^R + X^L)\right](X^L - \theta^R)^2 + \lambda \frac{1}{2z}\left[z - \frac{1}{2}(X^R + X^L)\right] \quad \#$$

with respect to X^R, yielding:

$$\frac{1}{4z}\left[(X^R - \theta^R)^2 - (X^L - \theta^R)^2 - \lambda\right] - \frac{1}{z}\left[z - \frac{1}{2}(X^R + X^L)\right](X^R - \theta^R) = 0 \quad \#$$

An analogous equation can be derived for party L. Since we have a perfect symmetric model, in equilibrium both parties choose opposite platforms: $X^L = -X^R$. From (ref: 8) it directly follows that

$$X^R = -X^L = \frac{4z\theta^R - \lambda}{4\theta^R + 4z} \quad \#$$

if $\lambda < 4z\theta^R$ and $X^R = 0$ if $\lambda \geq 4z\theta^R$. From (ref: 9) it is easy to show that $\frac{\partial X^R}{\partial z} \geq 0$, $\frac{\partial X^R}{\partial \lambda} \leq 0$ and $\frac{\partial X^R}{\partial \theta^R} \geq 0$. Thus, a higher degree of uncertainty about voters' preferences increases policy divergence. Moreover, policy divergence is inversely related to the rents parties receive from holding office. These results are common in probabilistic voting models, in which parties have different preferences over policy outcomes.

The Optimal Degree of Policy Divergence

This section analyzes the equilibrium of our electoral model from a normative point of view. More specifically, we address the question: what is the optimal degree of policy divergence from voter *i*'s point of view, given that the political parties do not know μ when choosing X^L and X^R? Our focus is on *ex ante* efficiency. That is, voter *i* chooses the degree of policy divergence before she knows μ. footnote

Voter *i* anticipates that party R wins the election if $\mu > 0$ and that party L wins the election if $\mu < 0$. Voter *i*'s expected utility is:

$$- \frac{1}{2}E\{[X^R - (\theta^i + \mu)] \mid \mu > 0\}^2 - \frac{1}{2}E\{[X^L - (\theta^i + \mu)] \mid \mu < 0\}^2$$
$$= -(X^R)^2 + X^R z - (\theta^i)^2 - \frac{1}{6}z^2 \quad \#$$

It is easy to see that $X^R = -X^L = \frac{1}{2}z$ maximizes (ref: 10). Each voter thus prefers some degree of policy divergence to complete policy convergence. The optimal degree of policy divergence $(X^R - X^L)$ equals z. The intuition behind this result is straightforward. In our model, political parties are uncertain about voters' preferences. The implication is that parties' policies might be based on a wrong perception of voters' preferences. Policy divergence offers voters a choice. This choice enables voters to correct partially for parties' wrong perception.

So far, we have assumed that parties can commit themselves to implement, if elected, their announced policy. Alesina (1988) argues that when parties are sufficiently impatient, policy commitments are not credible. As a consequence, each party chooses its ideal policy, if elected ($X^L = \theta^L$ and $X^R = \theta^R$). It is easy to see that the assumption that parties can commit themselves does not affect our results. The optimal degree of policy divergence $X^R - X^L$ remains z.

Conclusion

The view that full convergence of policy platforms in a two-party system is socially optimal, is widely accepted in the literature on electoral politics. In this paper we use a simple model of electoral competition, in which probabilistic voting is the result of incomplete information about voters' preferences, to show that the voters may prefer some degree of policy divergence. The intuition is that policy divergence enables voters to correct policies that are based on a wrong perception of their desires.

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