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# Political motivations and electoral competition: Equilibrium analysis and experimental evidence



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## ABSTRACT

We study both theoretically and experimentally the set of Nash equilibria of a classical onedimensional election game with two candidates. These candidates are interested in power and ideology, but their weights on these two motives are not necessarily identical. Apart from obtaining the well known median voter result and the two-sided policy differentiation outcome, the paper uncovers the existence of two new equilibrium configurations, called 'one-sided' and 'probabilistic' policy differentiation, respectively. Our analysis shows how these equilibrium configurations depend on the relative interests in power (resp., ideology) and the uncertainty about voters' preferences. The theoretical predictions are supported by the data collected from a laboratory experiment, as we observe convergence to the Nash equilibrium values at the aggregate as well as at the individual levels in all treatments, and the comparative statics effects across treatments are as predicted by the theory.

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### 1. Introduction

The *spatial* theory of electoral competition begins with the seminal contributions of Hotelling (1929) and Downs (1957). The basic model considers a majority rule election where two political candidates compete for office by simultaneously and independently proposing a platform from a unidimensional policy space (e.g., an income tax rate). As is well known in the literature, the equilibrium predictions of this model depend crucially on candidates' motivations for running for office. In this paper, we study the implications of the so-called *mixed motivations* hypothesis, according to which candidates are concerned not only about winning the election and being in power, but also about the ideological position of the policy implemented afterwards.<sup>1</sup>

Although this assumption is thoroughly familiar in its symmetric version, that is, when both candidates assign the *same* relative weight to their policy preference versus their desire to win office, what happens in the asymmetric scenario remains an open question. As we argue below, this case is not only interesting from a theoretical point of view, but also empirically relevant. Here, we offer a full characterization of the set of Nash equilibria for both cases, the symmetric and the asymmetric one, uncovering interesting (and sometimes counter-intuitive) equilibrium predictions that had not been identified yet in the literature. In addition, we conduct a laboratory experiment to assess whether the predictions of the model possess

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<sup>&</sup>lt;sup>1</sup> This was first suggested by Calvert (1985), and it has been recently used in a number of papers, including Ball (1999), Groseclose (2001), Aragones and Palfrey (2005), Duggan and Fey (2005), Saporiti (2008), Callander (2008), Bernhardt et al. (2009), and Saporiti (forthcoming).

any empirical relevance, studying in a rich set of treatments not only convergence of subjects' behavior to the theoretical predictions, but also learning and a number of comparative statics effects resulting from changing the interests in power (resp., ideology) and the uncertainty about voters' preferences.<sup>2</sup>

An important motivation for this research is that conceptually the mixed motivations hypothesis is more realistic than the traditional hypotheses of candidates' motivations, according to which candidates care in the *same* way and *only* about either winning power or policy. In a democracy, the mixed motivations probably emerge naturally from the fact that candidates are representatives of complex political organizations. To elaborate, in real world politics to reach the stage of being in competition for public office, citizens must first be nominated within the political parties; and for that to happen they need the support of regular party members, who are arguably much more concerned about the policies implemented after the election than about the actual winner of the contest. Thus, although politicians as other professionals might be more interested in their careers and, therefore, in winning the elections, it seems reasonable to expect that policy considerations will also enter into the candidate's payoff function with some weight.<sup>3</sup>

These weights need not be the same for all candidates. They could depend for instance on the features of the political organization that the candidate represents, such as the number of regular members, the level of activism within the organization, the internal process to nominate candidates, etc. The value of winning the election might also vary depending on whether the party of the candidate is the incumbent in office or a challenger. Thus, there seem to be ample reasons why one might expect asymmetric electoral motivations to be quite general. Some evidence seems to suggest that they may have some empirical relevance as well. An interesting case in this regard is the Radical and the Peronist Parties in Argentina. These two parties are the main political actors of the country. The Radical Party has been ever since its creation an ideological party, whereas Peronism has been a "movement", as Perón used to call it, basically motivated by being in power. Another case is the Labour and the Conservative Party in the UK election of 1997, in which both located on the center-right of the political spectrum.

A second motivation for this work is that from a theoretical point of view, the mixed motivations hypothesis has been shown to have nontrivial implications for the predictive power of the theory of electoral competition. In effect, Ball (1999) pointed out that, due to the discontinuities of the payoff functions, the electoral contest with hybrid motives does not always possess a Nash equilibrium in pure strategies. Moreover, it has been shown that the source of this instability can be attributed entirely to the asymmetric nature of the political goals (Saporiti, 2008). Yet, in spite of this, the analysis of the full set of Nash equilibria under this assumption remains an open question. Clearly, filling out this gap seems quite important, because elections play a central role in many economic models, particularly in models of political economy and public finance.

The main results of this paper can be summarized as follows. On the one hand, consistent with the theory already known, our equilibrium analysis shows that when the value of being in office is the *same* for the two candidates, both players announce either (i) a platform located on the estimated median ideal point (policy convergence) if the electoral uncertainty is *low* compared with the interest in office, or (ii) a platform located on their own ideological side (two-sided policy differentiation) if the uncertainty is *high.*<sup>4</sup>

On the other hand, when candidates have *asymmetric* motivations, the median voter result still dominates for low levels of uncertainty. However, as the uncertainty increases, i.e., as the length of the interval over which the median is distributed increases, first an equilibrium in pure strategies fails to exist. In that region, both candidates randomize optimally on one side of the median to avoid being copied and undercut by their rival (probabilistic differentiation). Second, outside that region, a pure strategy equilibrium is reestablished, but the two candidates assign all of the probability mass to a different platform. These policies are located initially on the same ideological side (one-sided policy differentiation), and then, as uncertainty further increases, on each candidate's political ground (two-sided differentiation).

The data collected from the experiment are largely supportive of these theoretical predictions. First, we find in all treatments that the median behavior of the left- and the right-wing subjects converge to the Nash equilibrium values. This happens even in the probabilistic differentiation treatment, with a unique mixed strategy equilibrium (MSE). In that treatment, we observe not only that subjects' choices approximate the bounds and the median of the MSE support, but also that the empirical cumulative distributions are close to the theoretical ones, with the cumulative distribution of the left-wing players first-order stochastically dominating the distribution of the right-wing players.

Second, in the symmetric motivations treatments, we note that the confidence intervals we construct around the medians shrink over time as well, indicating behavior that is consistent with the Nash equilibrium not only at the aggregate level but also at the individual level. In the asymmetric treatments, with one-sided policy differentiation in either pure or mixed strategies, some noise in the individual choices persists even after sixty rounds (elections) of play. This is consistent with equilibrium behavior in the treatment with a mixed strategy equilibrium, but not with equilibrium behavior in the treatment

 $<sup>^2</sup>$  The use of experimental methods as opposite to field methods seems preferable to test the theory because the former allow for a level of control that cannot be achieved with the latter given the large number of confounds that influence the behaviors of interest.

<sup>&</sup>lt;sup>3</sup> Morton (1993) reports on subjects in a laboratory experiment placing a weight of approximately 32% on winning the election, and 68% on the expected utility from the implemented platforms.

<sup>&</sup>lt;sup>4</sup> In this paper, candidates' preferred policies are assumed to be distributed on either side of the median ideal point, so that the ideology of one candidate lies on the left and the other on the right.

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