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Policy experimentation, political competition, and heterogeneous beliefs ☆

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ABSTRACT

We consider a two period model in which an incumbent political party chooses the level of a current policy variable unilaterally, but faces competition from a political opponent in the future. Both parties care about voters' payoffs, but they have different beliefs about how policy choices will map into future economic outcomes. We show that when the incumbent party can endogenously influence whether learning occurs through its policy choices (policy experimentation), future political competition gives it a new incentive to distort its policies — it manipulates them so as to reduce uncertainty and disagreement in the future, thus avoiding facing competitive elections with an opponent very different from itself. The model thus demonstrates that all incumbents can find it optimal to 'over experiment', relative to a counterfactual in which they are sure to be in power in both periods. We thus identify an incentive for strategic policy manipulation that does not depend on parties having conflicting objectives, but rather stems from their differing beliefs about the consequences of their actions.

1. Introduction

Many of the most important public policy problems democratic countries face require cumulative efforts by successive governments to be successfully managed. Consider environmental policy (in particular regulation of stock pollutants such as greenhouse gases), social security reform, sovereign debt management, and public infrastructure development. None of these issues can be tackled in a single legislative term, and the total quantity of resources devoted to them will likely be the result of decisions taken by several governments. As such, the policies incumbent political parties choose to address these issues are heavily influenced by the incentives that the political system provides for them to make sound 'long-run' policy decisions, even if the effects of those decisions may only be realized once they have left office.

The lack of future political control that is characteristic of democratic systems means that, for the purposes of setting 'long-run' policies, incumbents have incentives to manipulate their current policy choices so as to influence both who gets elected in the future and the policy choices future governments will make (Persson and Svensson, 1989; Aghion and Bolton, 1990; Tabellini and Alesina, 1990; Milesi-Ferretti and Spolaore, 1994; Besley and Coate, 1998; Persson and Tabellini, 2000; Azzimonti, 2011). These strategic incentives exist even if parties are not purely office seeking, but have interests that coincide with those of a group of voters, e.g. in models of partisan politics. These effects have traditionally been studied in models with heterogeneous preferences: parties are assumed to have intrinsically different preference parameters, which induce heterogeneous preferences over policies, and hence a strategic incentive for an incumbent party to manipulate present policy choices given that its reelection is uncertain.

While heterogeneity in preference parameters undoubtedly accounts for some of the divergences between political parties' preferred policies, heterogeneity in beliefs is likely to be an equally important factor. Milton Friedman famously argued that "differences about economic policy among disinterested citizens derive predominantly from different predictions about the economic consequences of taking action… rather than from fundamental differences in basic values" (Friedman, 1966). More recently, public surveys in the US demonstrate a strong

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polarization in the beliefs of Democrats and Republicans about a variety of policy issues, including, for example, the likely causes and severity of climate change (Leiserowitz et al., 2012; Borick and Rabe, 2012). Despite the empirical plausibility of belief heterogeneity, the consequences of relaxing the common prior assumption have been largely unexplored in the political economy literature on strategic policy choice.[2]

The crucial new feature of political competition induced by heterogeneous beliefs is that beliefs are dynamic, and potentially endogenous. Parties' policy preferences may change over time as their beliefs evolve in response to new information. Moreover this learning process may, at least to some extent, be under the control of the incumbent, who may choose policies with the express purpose of revealing information about their consequences in the future; learning may be 'active'. Active learning — the idea that current policy choices influence how much is learned in the future — is an old concept in economics (e.g. Prescott, 1972; Grossman et al., 1977), which has been applied to problems in monetary policy (Bertocchi and Spagat, 1993), environmental regulation (Kelly and Kolstad, 1999), and firm behavior (Keller and Rady, 1999). It can be seen as a form of experimentation — we choose an action, observe its consequences, and so learn something new about the relationship between choices and outcomes. In addition, it is often the case that the more intensely we pursue a policy, the more we can separate the 'signal' from the 'noise', and the more we learn about its effects.[3] Thus when learning is active, and parties have divergent beliefs that they update rationally, the incumbent party has a measure of control over its own, and its opponent's, future policy preferences. This gives rise to strategic incentives for policy manipulation that are entirely absent when parties merely have different preference parameters.

Our core contribution is to elucidate the interaction between belief heterogeneity, active learning (or experimentation), and political competition, and how this affects the size of public programs with uncertain deferred benefits (or costs). We focus on how the interaction between these factors determines an incumbent's response to the intertemporal tradeoff inherent in such problems. We thus abstract from questions of taxation and redistribution, and consider a stylized model in which voters differ only in their beliefs about the benefits of the policy, and parties that represent the beliefs of groups of voters must decide only on the level of some policy variable. We show that the interaction between active learning and political competition gives rise to a new incentive for incumbents to distort their policy choices. This incentive pushes incumbents to choose policies that increase their chances of resolving uncertainty in the future, regardless of their beliefs: they will over experiment. The intuition behind this result is simple — since the preferences of parties with different a priori beliefs converge when learning occurs, incumbents avoid future competitive elections with an opponent very different from themselves by choosing policies that reduce disagreement.

We demonstrate this mechanism in a two period model that combines the literature on intertemporal decision making under uncertainty and learning (Arrow and Fisher, 1974; Henry, 1974; Epstein, 1980; Gollier et al., 2000), with a simple but flexible model of political competition (Wittman, 1973, 1983; Roemer, 2001). To demonstrate the effects cleanly, the model assumes that parties care only about the voters' well-being, and disagree only in their beliefs. Thus, in the absence of belief heterogeneity all parties in our model would agree on the correct policy choice, which would also be the optimal policy for the voters. Yet even in the sanguine case where parties are well intentioned and have common objectives, heterogeneous beliefs and political competition will distort their policy choices. We show that when learning is active enough, all incumbents will over-experiment relative to a counterfactual in which they are sure to be in power in the future, regardless of their beliefs and the beliefs of their political opponents.

Section 2 sets out the model structure. Section 3 examines how the interaction between active learning and political competition affects policy choices when beliefs are heterogeneous, without specifying the actual form of the political competition between parties. To build intuition, a simple model with binary policy choices is discussed first, followed by a more complex model with continuous policy choices. Section 4 specializes to a specific model of political competition: the Wittman model. In our version of this model parties know the distribution of the voters' beliefs, voters vote for their preferred platform, and elections are decided by majority rule. We show that our results hold under plausible primitive conditions on the parties' payoff functions in this case, which apply in both 'full commitment' and 'no commitment' versions of the model. We reflect on the application of our results to a variety of policy issues in Section 5, before concluding.

1.1. Related literature

While the consequences of heterogeneous beliefs and strategic experimentation for the policy choices of incumbents are (to the best of our knowledge) unexplored, several papers investigate some of these factors in other contexts.

Piketty (1995) considers a model of social mobility and redistributive taxation, in which agents hold different beliefs about the relative importance of effort and social class in determining economic outcomes. The beliefs of different agents are updated based on their income mobility experience, and transmitted to their descendants. Piketty shows that belief heterogeneity persists in the steady state, and that experience of income mobility, and not simply income level, contributes to forming political attitudes. While heterogeneous beliefs are at the core of this work, it focusses on the voters' belief formation processes, and not on strategic policy experimentation by incumbent governments.

Strulovici (2010) is explicitly concerned with strategic experimentation, but focusses on strategic voters, rather than strategic parties. In his model pivotal voters recognize that experimentation reduces their likelihood of being pivotal in the future — this results in under-experimentation in equilibrium. We focus on the behavior of strategic parties that manipulate their current policies in part to influence the beliefs of future voters. In contrast to Strulovici (2010), we show that when parties have good faith disagreements with their political opponents, they have an incentive to over experiment.

Callander and Hummel (2013) consider a model that is in some respects close to ours. They examine the efficiency of political turnover, when the only link between successive governments is the information they possess. Incumbents can experiment strategically to influence the information that their successors will use to make their policy choices. They show that, due to the time inconsistency issues that are inherent in political systems with turnover, experimentation can improve the efficiency of policies, as it creates a channel for intertemporal influence. This informational channel of influence is also present in our work, but the political context differs. Parties have common beliefs but heterogeneous objectives in their model, and political turnover is imposed exogenously. By contrast, parties in our model have common objectives but heterogeneous beliefs, and the identity of future governments is determined endogenously via competitive elections. This allows us to

[2] Morris (1995) reviews the theoretical arguments for and against the common prior assumption. Acemoglu et al. (2008) demonstrate that Bayesian updating does not generically lead to agreement on posteriors when agents are uncertain about the distribution of possible signals. Glaeser and Sunstein (2013) and Fryer et al. (2013) consider alternative models of belief polarization, and Van den Steen (2004, 2010) consider models of 'rational' overoptimism that results from heterogeneous beliefs. We will simply treat belief heterogeneity as an empirical fact, and investigate its consequences for policy choice.

[3] Here are two examples: Consider a policy that decentralizes educational decision making (e.g. management and curriculum decisions) from a central ministry to individual schools. Our ability to discern the causal effect of such a policy on e.g. test scores increases as more schools are included in the program. Next consider a policy that aims to set the allowed level of emissions of a stock pollutant (e.g. greenhouse gases). Suppose that the evolution equation for the stock of pollutant is parametrically uncertain, and contains additive noise. The more of the pollutant we emit, the greater the level of the stock, and the more our observations of the system depend on the underlying dynamics than on stochastic variation. Hence our ability to learn the parameters of the system increases the more we emit (see e.g. Kelly and Kolstad, 1999). Analogous reasoning holds for many public policies.