Dynamic Policy-Making with Endogenous Default

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EXTENDED ABSTRACT

Consider two parties, Democrats and Republicans for example, that have to decide on the level of taxation. The consensus level of taxation will be a result of some bargaining process between the parties and will stay in place until a new policy is implemented. The preferences of each party are likely to vary over time: their most preferred level of taxation may depend on the ideological positions (e.g. Republicans on average prefer lower taxation than Democrats), but also on some exogenous circumstances (e.g. a global recession might call for bigger government spending). Hence, while voting on the level of taxation, each party should take into account what bargaining power will result in the future from the policy adopted today. If the policy on the table is likely to favor the opponent in the future, the subsequent agreements might share the same feature. As a result, some parties might vote against this policy even if it is optimal in the current period. For example, Republicans might be unwilling to agree to higher taxes during the recession, as it might be difficult to revert to low taxes once the economy recovers.

How will the policies evolve? Will they be efficient in every period? If not, when are they likely to be inefficient? How does allowing for pork-barrel spending affect the efficiency of the policy-making? We aim to answer these questions in a dynamic, infinite horizon bargaining game.

Two or more parties must decide on a policy every period. A policy is a point in a unidimensional space, and each party has single-peaked preferences over this space. In the first period there is some exogenously given policy that serves as a status quo. The status quo remains in place until the period in which a new policy is agreed upon, at which point this policy becomes the new status quo. Each period the parties receive utility from the policy in place and the transfers exchanged between the parties. We assume that stage utility is quasilinear in money and payoffs in the dynamic game are given by the expected discounted sum of stage utilities.

The bargaining is as follows: every period one party is the proposer (chosen at random or according to a predetermined order) and suggests a new policy together with the scheme of transfers between parties. After this, the vote takes place. If a sufficient set of players vote in favor of the proposal, the new policy is implemented, and the transfers are exchanged. Otherwise, the status quo remains in place. In the subsequent period the policy implemented in the last

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period, be it the new policy or the previous status quo, becomes the default option and the legislative process repeats itself.

The preferences of the parties evolve over time. The preferences are independent across periods, but might be correlated across the parties. Evolving preferences generate the incentive to renegotiate current policy and, together with the status quo, create the intertemporal link.

We say that a policy is strongly efficient if in each period it maximizes the sum of the utilities. A policy is Pareto efficient if in each period there is no other policy that could improve this period's utility of every player.

First, we focus on the simplest case in which transfers are fully efficient, that is \$1 spent by one player is worth \$1 to the recipient. We show that in such a model there exists a unique stationary Markov equilibrium. We characterize the equilibrium and show that in each period the strongly efficient policy is chosen. If the preferences are identical ex ante, the parties are indifferent between any status quo and expect to receive the same discounted stream of transfers. When parties differ ex ante, the expected stream of benefits depends on the current status quo. We are currently working on characterizing the transfer scheme as a function of the preference distributions.

Next, we allow the transfers to be arbitrarily inefficient to capture the common assumption that pork-barrel spending and other distributive policies might come at a cost. In particular, infinitely inefficient transfers represent the case in which no transfers are allowed. The model with inefficient transfers, and the model with no transfers in particular, are difficult to tackle because of possible discontinuities in the value function. Assuming a continuous policy space, these games belong in a class of stochastic games for which existence of Markovian equilibria is not guaranteed. In a similar problem with no transfers, Duggan and Kalandrakis (2007) prove the existence of the equilibrium when the current policy determines only the distribution of the next period status quo. The analytical solutions remain, however, elusive, and Duggan and Kalandrakis (2007) resort to numerical methods when analyzing particular applications.

We take a different approach. Let the policy function map each period preferences and the status quo into a new policy. We look at the set of policy functions that could be implemented if the social planner could commit to it. An implementable policy function must offer each player in each period the expected discounted utility that is at least as high as the one expected from the status quo. Such policy set contains the stationary Markov equilibrium policies under any bargaining protocol in which an equilibrium exist. This allows us to sidestep the existence issue. Any property shared by all policies in this set must be shared by any stationary Markov equilibrium of some bargaining protocol.

We show that with inefficient transfers, an implementable policy function is never strongly optimal in each state. The level of optimality decreases with the inefficiency of transfers. When transfers are infinitely inefficient (i.e., not allowed), each implementable policy function is even not Pareto efficient, that is, in certain states even if everybody agrees on which policy is the best in the current period, they will enact a different, period-suboptimal policy. We show that when the distribution of the peaks of the players is identical and unimodal,

the policies will be closer to the mean than the strongly optimal policy. This implies, that policies will be less efficient in extreme situations. We analyze the properties of the optimal policy for different distributions of the preferences.

This paper sheds some light on the nature of policy dynamics and shows under what conditions the variability of the policies might be lower than the variability of the underlying state. It also provides a voice in the discussion on the efficiency of pork-barrel spending. According to conventional wisdom, pork barrel spending and other distributive policies lead to inefficiencies. Keeping in mind the limitations of the model, we conclude that transfers between the legislators, however inefficient, may increase the welfare of the citizens, but increase the volatility in the policies implemented.

Our paper contributes to the literature on the theory of political failure and the legislative bargaining approach. It is related to the work of Baron and Ferejohn (APSA, 1989) and the political science literature spawned from it such as Baron (APSA,1996) Kalandrakis (JET, 2004), Cho and Duggan (JET, 2035), and Battaglini and Coate (AER, 2008), to mention just a few.