Theory

In this section, I use the canonical vote-buying model proposed by **(author?)** [2] and **(author?)** [1] to model mayor's strategy to engage in patronage in Brazil. For any given term, a mayor seeks to enact her preferred policy, but to do so needs to garner legislative support in the city council. The preferences of these legislators vary: some of these councilors are more inclined to supporting the government (*governista*), while others would rather oppose it. These different preferences translate into differential costs to sway their vote: city councilors aligned with the mayor are cheaper than their opposition counterparts.

In this set-up, the mayor competes with the opposition to buy votes. The strategy of the mayor focuses on how to pre-emptively coopt some of these councilors so that they ultimately vote in favor of the mayor's proposal. Building this winning coalition requires side payments of various forms, but my primary focus is on patronage appointments. City councilors who vote for the mayor's proposal are rewarded, as loyalists, with positions in government. This arrangement is mutually beneificial: as pointed out by **(author?)** [3], these appointments tie the councilor's fate to the patron. Because patronage appointments are discretionary, in order to maintain these appointments the city councilor must remain loyal to the government and vote in favor of the mayor's proposal.

The main prediction of the model is that, in equilibrium, the cost of passing the mayor's preferred policy decreases monotonically as the legislative support for the mayor increases. Substantively, the model predicts that municipalities in which the mayor has more (less) councilors favorable to her, we should observe less (more) patronage. Fragmented governments, marked by a strong opposition in the legislature, therefore translate into a greater degree of patronage, with negative consequences for the electorate. Below, I outline the setting of the model and derive key comparative statics that guide the empirical estimation of this paper.

The Setting

The mayor M and opposition O compete over legislative votes to enact their preferred policies. There are two possible outcomes: a policy x favored by the mayor, and the status quo, denote as y, preferred by the opposition. In order to implement her policy the mayor must gain the approval of the city council, comprised of an odd N number of voters, through a simple majority rule. The mayor and opposition spend political resources W_M and W_O to win over votes, which for the mayor includes patronage appointments into the public sector.

Each city councilor is characterized by a publicly observed policy preference v_i for all $i \in N$, where $v_i > 0$ entails that the mayor's proposal x is preferred. Let $\mathbf{v} = (v_1, ..., v_n)$ denote a preference profile for the city council. Let v_i measure the degree to which an individual city councilor supports the mayor, with higher values denoting stronger support for the mayor and vice versa. Payoff gets realized when city councilor i votes, independent of the outcome of the voting procedure.

We solve the game through backward induction. The timing of the game is as follows:

1. Mayor M offers a bribe schedule $m \in (m_1, ..., m_n) \in \mathbb{R}^n_+$.

2. Opposition O observes the bribe schedule m and makes a counter-offer $o \in (o_1, ..., o_n) \in \mathbb{R}^n_+$.

3. City councilors cast their votes and payoffs are realized.

Given a bribe schedule (a, b), councilor i prefers to vote for the mayor's proposal x if $a_i + v_i > b_i$ and the status quo y otherwise. Since indifferent councilors vote for the status quo, the opposition needs to only match bribes from M, adjusting for individual preferences, i.e. $o_i = m_i + v_i$. For the mayor, she needs to construct the cheapest winning coalition in order to beat the opposition.

Following Groseclose and Snyder (1996) and Banks we focus our analysis on the set of equilibria in which the mayor wins. In this context, the amount of patronage resources W_M is sufficiently large relative to W_O and $\mathbf{v}$ that the mayor's preferred policy x is implemented over y. Let $U(\mathbf{v}, W_O)$ denote the set of unbeatable patronage schedules for the mayor, and for any patronage schedule let $S(m) = \sum_{i=1}^{n} m_i$ be the total amount of patronage disbursed. The mayor then solves

$$\min_{a}\{S(a) : a \in U(\mathbf{v}, W_B)\} \tag{1}$$

Note that for any equilibrium strategy, it must be the case that mayor M uses a leveling schedule: every city councilor in her coalition C is equally expensive for the opposition O to bribe.

References

[1] Jeffrey S Banks. Buying supermajorities in finite legislatures. *American Political Science Review*, pages 677–681, 2000.

[2] Tim Groseclose and James M Snyder Jr. Buying supermajorities. *American Political Science Review*, pages 303–315, 1996.

[3] James A. Robinson and Thierry Verdier. The political economy of clientelism. *The Scandinavian Journal of Economics*, 115(2):260–291, 2013.