THE NUMBER OF PARTIES AND DECISION-MAKING IN LEGISLATURES

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Motivation

It is proposed a model of a legislature, formed by several parties, which have to vote for or against a certain bill in the presence of a lobbyist who is interested in a certain outcome of the vote. We show that the easiness to manipulate a legislature decision by the lobbyist is increasing with the number of parties. A high electoral threshold leads to fewer parties represented, and consequently, decreases the easiness to change a legislature decision by the lobbyist. On the other hand, high electoral threshold may cause a misrepresentation of voters. We show that if the threshold is higher that 6 %, the impact of the misrepresentation effect becomes significant.

Number of parties given

Legislature

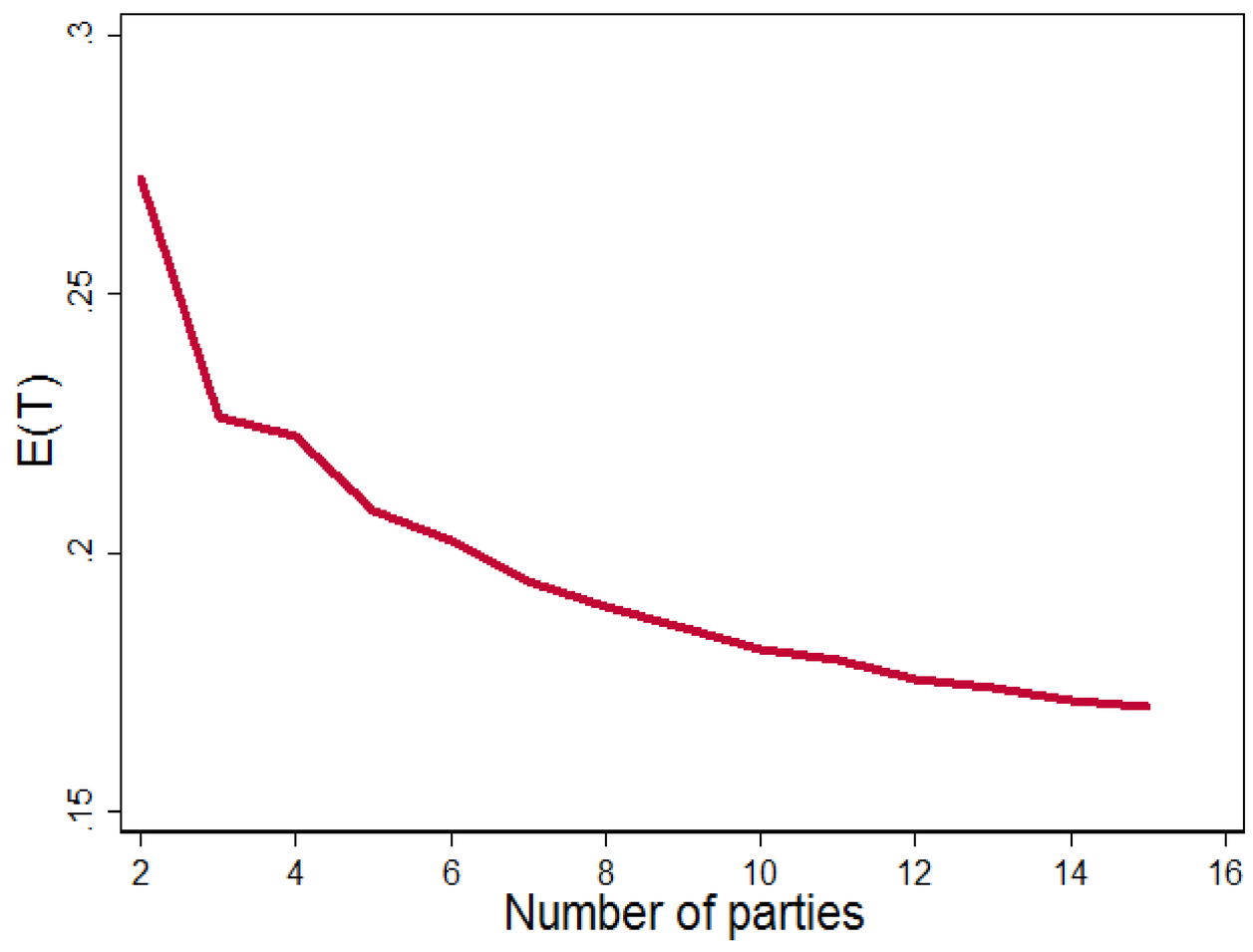
- n – **number of parties** in a parliament.
- Each party has a certain **position** about a bill under voting: $D_i \in [-1;1]$, $i = 1,\dots,n$, such that $D_i = 2X_i - 1$, where $X_i \in [0;1]$, $X_i \sim Beta(\alpha,\alpha)$, α is a given parameter, so that as $\alpha \to \infty$, then the political system is less ideologically polarized.
- Each party controls a certain number of seats, which defines its' **voting weight** $w_i \sim Poiss(\lambda)$ for each $i \in \{1,\dots,n\}$.
- **Simple majority** voting rule and .

Lobbyist

- The lobbyist offers to each party a nonnegative **payment** $P_i \in [0;1]$ for voting for the bill, and every party accepts the offer if $P_i - D_i \geq 0$
- L minimises the total amount of **payment to parties**, taking into account total weights of bribed parties:

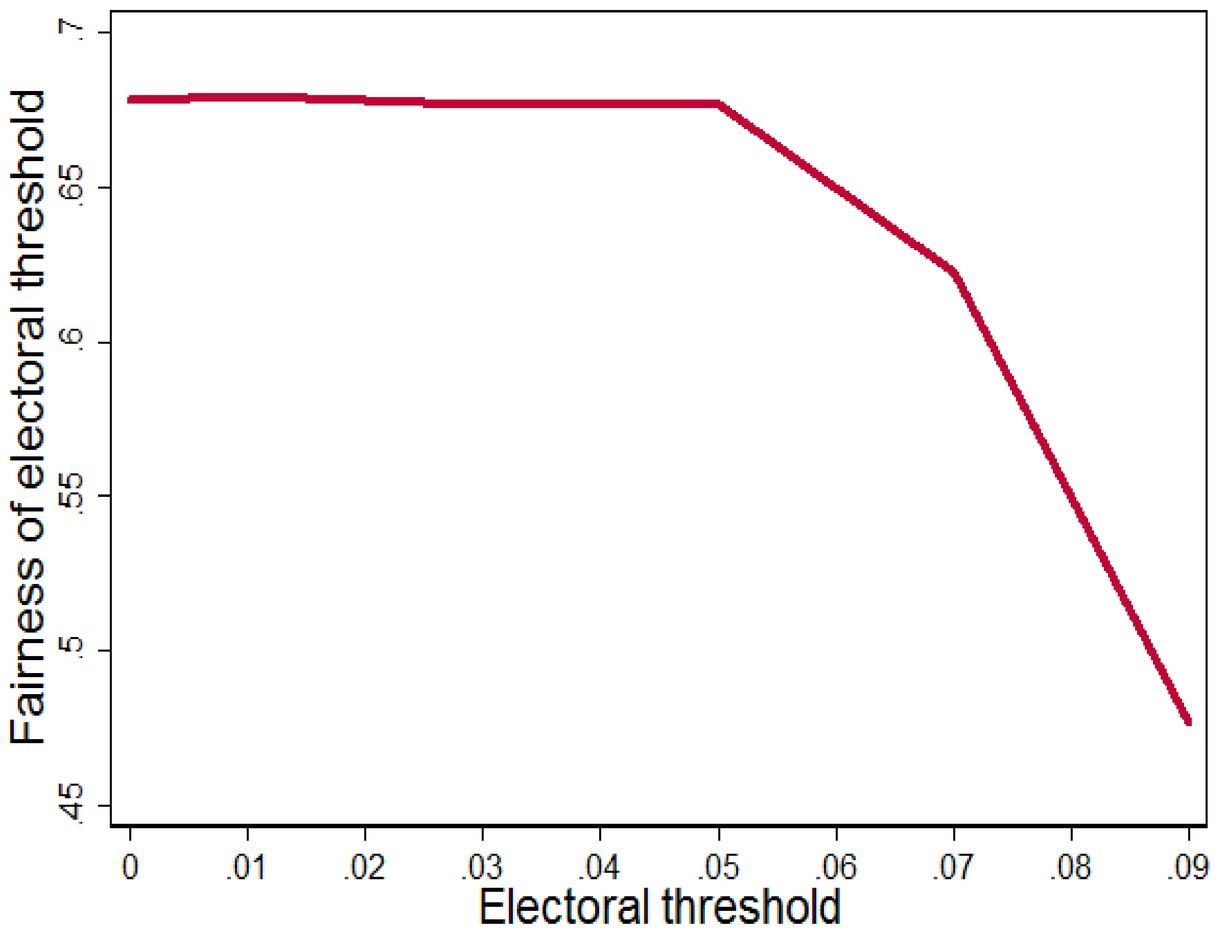
$$T(n) = \min\{\sum_{i=1}^{n} P_i\}, \text{ s.t. } \sum_{P_i - D_i} w_i > \frac{\sum_{j=1}^{n} w_j}{2}$$

- The ease of manipulation is the expected $T(n)$, denoted as $E_T(n)$



Number of parties ↑ → Ease of manipulation ↑ → Electoral threshold would decrease the number of parties → **Misrepresentation**?

Electoral threshold given



Elections

- Random number of parties compete in elections: $n' \sim Poiss(\lambda_p)$.
- Each party has a random position about the bill: $D'_i \in [-1;1]$.
- Each party obtains random number of votes: $v_i \sim Poiss(\lambda^*)$.
- Popular preference $\Pi = \{A, R, I\}$ about the bill ("Accept", "Reject", or "Indifferent") is based on v_i and D'_i.
- There is an electoral threshold t, so that some parties do not pass it and therefore, do not get any seat in legislature.

Lobbyist

- The lobbyist has random standing about the bill: $D_L \in [-1;1]$.
- He offers to each party a nonnegative **payment** $P_i \in [0;1]$ for voting for the bill, and every party accepts the offer if $P_i - D_i \geq 0$.
- If the lobbyist succeed to bribe parties, the legislature adopts the decision $\Pi_l(t) = \{A, R, I\}$, desired by the lobbyist.
- If the lobbyist cannot bribe the necessary parties, the legislature the legislature adopts the truthful decision, based on D_i and w_i.

$< 6\%$ 'fairness' does not suffer

$\geq 6\%$ 'fairness' is decreasing with the threshold.