ECON 3510: Poverty and Economic Development
Lecture 5: Median Voter Theorem

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Overview

- In the next few lectures, we will discuss the fundamental institutional arrangement in democracies, elections.
- Elections are a tool to **aggregate heterogeneous preferences** among citizens.
- We will discuss two broad topics.

1. **Voting:** How do people make decisions in elections? How do many people's choices influence policies?
   - We will present a simple theory that helps thinking.
   - We will see some evidence on how policies respond to voters' preferences.
2. **Turnout:** Why do people even vote?
   - The literature has documented that various factors can play a role in turnout: opportunity cost of voting (relative to returns from other activity), education, habit formation, campaigns, civic duties, etc.

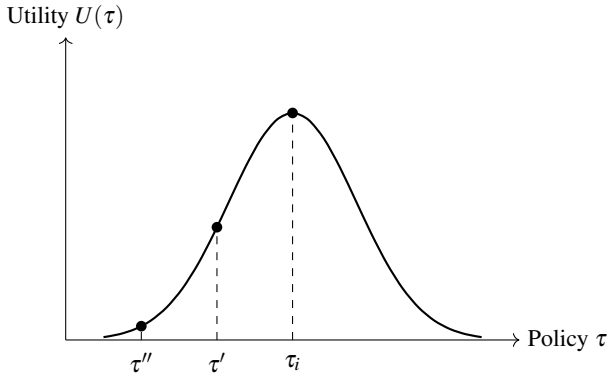
Settings

- Downs (1957): a simple model for the politics of policy choice.
  - The framework presented is sometimes called the "Downsian model."
- The policy space is one-dimensional. The policy is denoted by scalar τ.
  - E.g., general liberal vs conservative social policies, tax rate, expenditures on public goods, ...
- Voters are indexed by i.
- **"Single-peaked" voter preferences:**

  (i) Voter i's most preferred policy is τ_i. $\tau_i \sim$ cdf $F(\cdot)$.

  (ii) Voter i prefers a policy closer to τ_i over a more distant policy.
  - Formally, if $\tau'' \leq \tau' \leq \tau_i$ or $\tau'' \geq \tau' \geq \tau_i$, then τ' is preferred over τ''.

Examples of Single-Peaked Preferences



- An analytical example of single-peaked preferences could be:

$$u_i = a - (\tau - \tau_i)^2.$$

Clearly, u_i is maximized at τ_i and decreases as τ deviates from τ_i.

Additional Assumptions

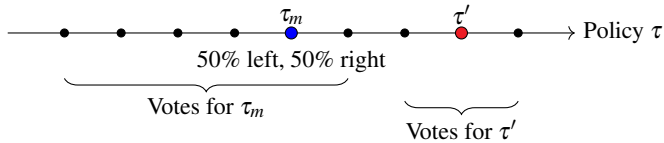
- The election is decided by majority rule with a fair random tiebreaker.
- Assume **sincere voting**: voters vote for the available option that yields the highest utility.

Median Voter Theorem

Theorem (Median Voter Theorem)

No policy can defeat the policy preferred by the median voter, namely, τ_m such that $F(\tau_m) = \frac{1}{2}$.

- Why? Consider τ_m vs. τ', where $\tau' \neq \tau_m$.



τ_m wins: 6 vs 3 votes.

Electoral Competition

- Now introduce electoral competition. Suppose there are two candidates, indexed by L and R.
- They can *commit* in advance in advance their policy platforms, τ_L and τ_R, respectively.
- Assume that both candidates only care about winning the office.
- Again, the election is decided by majority rule.
- What is the political equilibrium, i.e., what policies will the candidates commit to?

Corollary (Convergence of Policy Platforms)

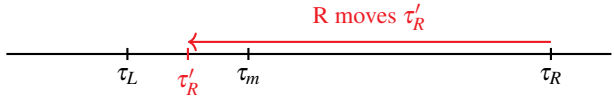
In the equilibrium, two candidates choose the meidan voter's most preferred policy:

$$\tau_L = \tau_R = \tau_m,$$

where τ_m is the median voter's most preferred policy.

Proof

- Suppose not. Then, $\tau_L, \tau_R \neq \tau_m$.
- Without loss of generality, suppose that L gets more votes than R and $\tau_L < \tau_m$.
- What will R do? R can claim a new policy platform $\tau'_R = \tau_L + \varepsilon$; $\varepsilon > 0$ is small so that $\tau_L < \tau'_R < \tau_m$.



- R has the incentive to do so: by single-peakedness, all voters with $\tau_i \geq \tau'_R$ vote for R; these voters account for more than 50% of the electorate, thus, R can win by claiming τ'_R.
- Then, by similar reasoning, L can claim $\tau'_L = \tau'_R + \varepsilon$ to win the election.
- Both candidates would continue moving closer to τ_m until $\tau_L = \tau_R = \tau_m$, since no policy can defeat τ_m. Then, a coin flip determines which candidate is elected, but the policy outcome is τ_m.

Remarks

- The MVT is a key result in voting theory.
  - The median voter's preference determines the equilibrium policy.
  - The incentive to win the election would push candidates to move toward the median voter's preference. They need to get 50% votes to win. If one doesn't move toward the median voter's preferences, the other will.
  - This may not hold exactly in reality. A Democratic candidate does not claim the same position as a Republican candidate. However, the incentive to win is a force that pushes a candidate to choose a policy platform that is more moderate than their own preferences.

- The simple model assumes **direct democracy**—voters vote on policy alternatives that candidates can credibly commit to policy platforms.
  - Direct democracy is rare. **Representative democracy** is more common: voters elect legislators, governors, or presidents who then choose policy.
    - How these representatives coordinate and negotiate raises further questions.
  - Politicians' commitments may not be credible: *ex post* they do what they think the best (to them).
    - We might hope that (re-)elections can hold politicians accountable, which is a deeper issue.
  - We assume that candidates only care about winning. They don't care about policy.
    - It says that Democrats would be happy to move to Republicans' positions so long as they can get 50% votes. This may not be strictly true.

Remarks (Cont'd)

- We assume majority rule. This is okay with a two-party system. There exist other electoral systems: plurality rule (first past the post), two-round system (runoff), proportional representation, etc.
- Despite the abstractions from reality, the MVT provides a benchmark for thinking about the relationship between voters and policies.

The MVT in Practice: Two Predictions

1. Changing the electorate would shift the policy.
   - Suppose the most preferred policy τ_i is distributed uniformly over $[0,1]$.
   - What is the equilibrium policy? The median voter's most preferred policy $\tau_m = \frac{1}{2}$.
   - What if we extend suffrage so that now the electorate is $[0,2]$? By the MVT, now the equilibrium policy is $\tau_m^{\text{new}} = 1$.

2. Candidates/parties converge on the same policy platform.

▶ Next, we discuss some empirical studies surrounding these predictions.

References I

Downs, Anthony (1957). “An economic theory of political action in a democracy”. *Journal of Political Economy* 65.2, pp. 135–150.