

Political Economy

131 Undergraduate Public Economics
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OUTLINE

Chapter 9

9.2 Mechanisms for Aggregating Individual Preferences

9.3 Representative Democracy

9.4 Public Choice Theory: The Foundations of Government Failure

9.5 Conclusion

POLITICAL ECONOMY: DIRECT VS. INDIRECT DEMOCRACY

1) Direct Democracy: In the case of *direct democracy*, voters directly cast ballots in favor of or in opposition to particular public projects. Direct democracy takes two forms.

a) Referendum: A measure placed on the ballot by the government allowing citizens to vote on state laws or constitutional amendments that have already been passed by the state legislature.

b) Voter initiative: The placement of legislation on the ballot by citizens (Propositions in California)

2) Indirect Democracy: In the case of *representative democracy*, voters elect representatives, who in turn make decisions on public projects (example: US congress)

MAJORITY VOTING: WHEN IT WORKS

Majority voting: The typical mechanism used to aggregate individual votes into a social decision, whereby individual policy options are put to a vote and the option that receives the majority of votes is chosen.

Majority voting can produce a consistent aggregation of individual preferences only if preferences are restricted to take a certain form

Example: funding for local public schools using property taxes could be chosen as high (H), medium (M), or low (L)

Mechanisms for Aggregating Individual Preferences

Majority Voting: When It Works

There are three types of voters in a town, with equal numbers in each group:

- ▶ *Parents.*
- ▶ *Elders.*
- ▶ *Young couples without children.*

■ TABLE 9-1

		Types of Voters		
		Parents (33.3%)	Elders (33.3%)	Young Couples (33.3%)
Preference Rankings	First	H	L	M
	Second	M	M	L
	Third	L	H	H

In this example, the option chosen by majority voting will be the medium level of funding, the choice of the median voter (the young couples).

MAJORITY VOTING: WHEN IT WORKS

The town could proceed as follows:

- First, vote on funding level H versus funding level L: L wins
- Then, vote on funding level H versus funding level M: M wins
- Then, vote on funding level L versus funding level M: M wins

Because M has beaten both H and L, M is the overall winner. Indeed, no matter what ordering is used for these pairwise votes, M will be preferred to the other options

Majority voting has aggregated individual preferences to produce a preferred social outcome: medium school spending and taxes.

Mechanisms for Aggregating Individual Preferences

Majority Voting: When It Doesn't Work

■ TABLE 9-2

Majority Voting Doesn't Deliver a Consistent Outcome

		Types of Voters		
		Public School Parents (33.3%)	Private School Parents (33.3%)	Young Couples (33.3%)
Preference Rankings	First	H	L	M
	Second	M	H	L
	Third	L	M	H

In this example, there is no consistent outcome from majority voting.

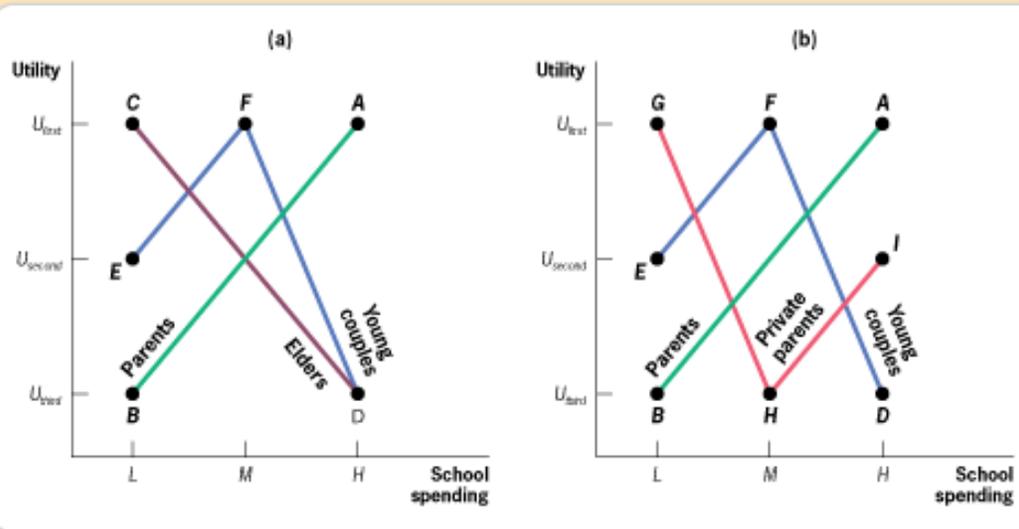
cycling When majority voting does not deliver a consistent aggregation of individual preferences.

Mechanisms for Aggregating Individual Preferences

Restricting Preferences to Solve the Impossibility Problem

single-peaked preferences Preferences with only a single local maximum, or peak, so that utility falls as choices move away in any direction from that peak.

■ FIGURE 9-2



Single-Peaked vs. Non-Single-Peaked Preferences • Panel (a) graphs the preferences from Table 9-1, which are all single-peaked; utility is always falling as each individual moves away from the preferred choice. Panel (b) graphs the preferences from Table 9-2; now the parents considering private school don't have single-peaked preferences since utility first falls then rises as spending levels increase.

MEDIAN VOTER THEOREM

Consider choice along a single dimension (e.g., level of funding)

Single peaked preferences: Preferences for funding increase and then decrease (always increasing, or always decreasing also fine). Peak is preferred funding level.

Median voter is the voter whose peak is at the median (half have lower peaks, half have higher peaks)

Voting Equilibrium (or Condorcet winner) is an outcome that wins in majority voting against any other alternative

Median Voter Theorem: Peak of median voter is a voting equilibrium

PROOF OF MEDIAN VOTER THEOREM

Let $a_1 < \dots < a_{median} < \dots < a_I$ be the peaks of individuals $1, \dots, I$

Suppose vote between a_{median} and a_j with $a_{median} < a_j$

a_{median} wins because $i = 1, \dots, median$ all prefer a_{median} to a_j (because they all have decreasing preferences for a beyond a_{median})

Symmetrically a_{median} wins against $a_j < a_{median}$ because $i = median, \dots, I$ prefer a_{median} to a_j

The median voter outcome from majority voting is very convenient. It implies that the government need find only the *one voter* whose preferences for the public good are right in the middle of the distribution of social preferences and implement the level of public goods preferred by that voter.

ABSTRACT SOCIAL CHOICE PROBLEM

$n = 1, \dots, N$ possible choices society can make

$i = 1, \dots, I$ individuals have preferences \prec_i over the N choices

Social decision rule: It aggregates individuals preferences $(\prec_i)_{i=1, \dots, I}$ into a social preference \prec_S over N choices that satisfies 3 key properties:

1) Pareto Dominance: if $a \prec_i b$ for all i then $a \prec_S b$

2) Transitivity: if $a \prec_S b$ and $b \prec_S c$ then $a \prec_S c$

3) Independence of irrelevant alternatives: whether $a \prec_S b$ or $a \succ_S b$ depends only on how individuals rank a vs. b (and not any other alternative). This rules out “intensity of preferences effects”

ABSTRACT SOCIAL CHOICE PROBLEM

ARROW'S IMPOSSIBILITY THEOREM: There is no social decision rule that converts individual preferences into a consistent aggregate decision without either

(a) restricting preferences or

(b) imposing a dictatorship (i.e. $\prec_S = \prec_i$ for some i)

This result was very influential and shows that the abstract social choice problem cannot have a general solution

Most common solutions are to:

(1) restrict preferences to single peaked preferences (median voter theorem),

(2) let intensity of preferences play a role (social welfare function and Samuelson rule)

MEDIAN VOTER AND EFFICIENCY

Efficiency requires \sum social marginal benefits = social marginal costs

⇒ Public good is worth providing if \sum benefits > costs

What matters for efficiency is the **average** marginal benefit across individuals and not the **median** marginal benefit

⇒ Median outcome is not efficient unless Median = Average (not true in general)

Example: bridge project would serve 10 people. 6 people value bridge at \$50, 4 people value bridge at \$100. Total social value of bridge is \$700 = $6 \cdot 50 + 4 \cdot 100$

Suppose cost is \$60 per person so total cost = \$600 = $\$60 \cdot 10$.

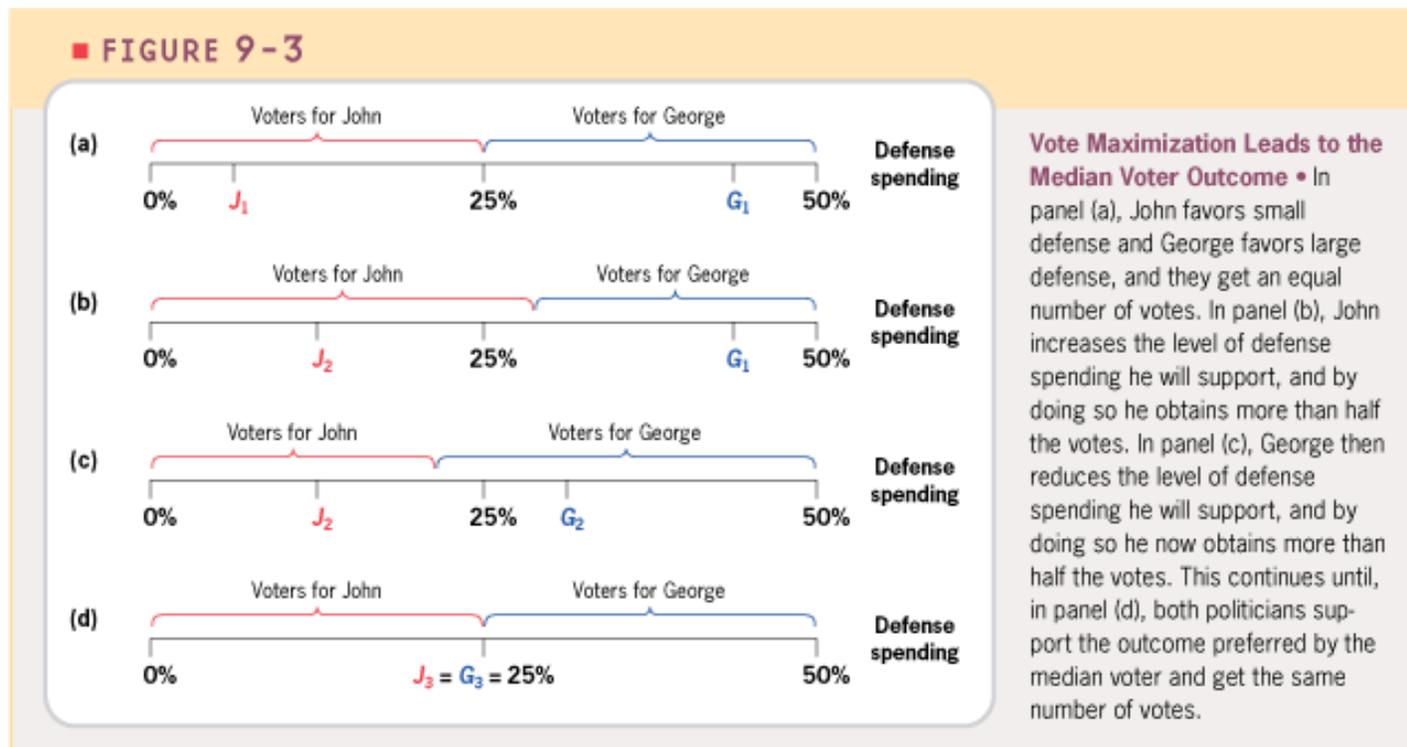
Mean net benefit is $70 - 60 = \$10$, median net benefit is $50 - 60 = -\$10$

Project is socially desirable but is opposed by 6 people to 4 in majority voting ⇒ Median voter leads to an inefficient outcome

Representative Democracy

Vote-Maximizing Politicians Represent the Median Voter

The median voter theory in the representative democracy context rests on the single key assumption that all politicians care about is maximizing the number of votes they get.



ASSUMPTIONS OF THE MEDIAN VOTER MODEL

Although the median voter model is a convenient way to describe the role of representative democracy, it does so by making a number of assumptions.

1) Single-dimensional Voting

The median voter model assumes that voters are basing their votes on a single issue.

In reality, representatives are elected not based on a single issue but on a bundle of issues.

Individuals may lie at different points of the voting spectrum on different issues, so appealing to one end of the spectrum or another on some issues may be vote-maximizing.

ASSUMPTIONS OF THE MEDIAN VOTER MODEL

2) Only Two Candidates

The median voter model assumes that there are only two candidates for office.

If there are more than two candidates, the simple predictions of the median voter model break down.

Indeed, there is no stable equilibrium in the model with three or more candidates because there is always an incentive to move in response to your opponents' positions.

In many nations, the possibility of three or more valid candidates for office is a real one.

ASSUMPTIONS OF THE MEDIAN VOTER MODEL

3) No Ideology or Influence

The median voter theory assumes that politicians care only about maximizing votes.

Ideological convictions could lead politicians to position themselves away from the center of the spectrum and the median voter.

4) No Selective Voting

The median voter theory assumes that all people affected by public goods vote, but in fact, only a fraction of citizens vote in the United States. Appealing to the base (by moving away from median voter) is a way to increase turnout.

ASSUMPTIONS OF THE MEDIAN VOTER MODEL

5) No Money

The median voter theory ignores the role of money as a tool of influence in elections.

If taking an extreme position on a given topic maximizes fundraising, even if it does not directly maximize votes on that topic, it may serve the long-run interests of overall vote maximization by allowing the candidate to advertise more strongly.

6) Full Information

The median voter model assumes perfect information along three dimensions: voter knowledge of the issues; politician knowledge of the issues; and politician knowledge of voter preferences.

All three of these assumptions are unrealistic.

LOBBYING

Lobbying: The expending of resources by certain individuals or groups in an attempt to influence a politician

In principle, lobbying could correct inefficiencies due to median voter theorem: those who really want the bridge pay politicians who can provide transfers to those who don't want the bridge as much and get it built

However, lobbying can also lead to inefficiencies if public does not have perfect information and hence does not care to pay attention

Example: 5 people value bridge net of cost at \$100, 100 people value bridge net of cost at -\$6. Median voter does not produce the bridge (the socially desirable outcome)

However, 5 people have strong incentives to lobby and may get the project approved (if the 100 do not pay attention)



APPLICATION

Farm Policy in the United States

The small sector of farmers receives \$25.5 billion in direct support from the federal government each year in two forms:

Direct subsidy payments.

Price supports.

The subsidies cost each American household about \$390 per year.

Why do American families pay such large costs to support the farm sector?

The typical answer provided by public policy makers of all political leanings is that this financial support is necessary to preserve the American “family farm” from larger agriculture companies and foreign competitors.

This example should not be taken to imply that large subsidies to farms is a uniquely American phenomenon. The European Union spends over \$100 billion annually supporting its farmers. Japan spends over \$54 billion on its farmers, with rice tariffs of nearly 500%.

EVIDENCE ON THE MEDIAN VOTER MODEL FOR REPRESENTATIVE DEMOCRACY

While the median voter model is a potentially powerful tool of political economy, its premise rests on some strong assumptions that may not be valid in the real world.

A large political economy literature has tested the median voter model by assessing the role of voter preferences on legislative voting behavior relative to other factors such as party or personal ideology.

TESTING THE MEDIAN VOTER MODEL (1)

As noted, empirical evidence on the median voter model is mixed. Some studies find strong support for the model.

At the same time, there is also clear evidence that “core constituencies,” as opposed to just the median voter in a district, matter for legislator behavior.

Direct evidence that ideology matters was also shown in a recent paper by Washington AER’08. She compares legislators who have daughters to those with the same family size who have sons

⇒ Finds that daughters increase a congressman’s propensity to vote liberally, particularly on reproductive rights issues.

Washington’s findings strongly support the notion that personal ideology matters: politicians are responding to their own experience, not just to the demands of the voters.

TESTING THE MEDIAN VOTER MODEL (2)

Evidence from US congress representatives:

1) Senate: 2 senators for each state in US senate: represent the same constituency and hence should vote in the same way in the senate if median voter model is right.

Yet, in the US, when a state has 1 republican senator and 1 democratic senator, those 2 senators vote very differently in the senate (contradicts the median voter model)

2) House: Using close elections for US representatives:

When a candidate crosses 50%, he/she gets elected. However, the constituency is the same whether a candidate gets 49.9% or 50.1% of the vote. Therefore, median voter implies that a Democratic representative elected with 50.1% should vote similarly in congress than a Republican representative elected with 50.1% of the votes.

Yet, in reality, closely elected representatives vote very differently if they are Democratic vs. Republican (Butler, Lee, Moretti QJE'04)

PUBLIC CHOICE THEORY: THE FOUNDATIONS OF GOVERNMENT FAILURE

Public choice theory: School of thought emphasizing that the government may not act to maximize the well-being of its citizens.

Government failure: The inability or unwillingness of the government to act primarily in the interest of its citizens.

Bureaucracies: Organizations of civil servants, such as the U.S. Department of Education or a town's Department of Public Works, that are in charge of carrying out the services of government.

In the model of the *budget-maximizing bureaucrat*, the bureaucrat runs an agency that has a monopoly on the government provision of some good or service.

LEVIATHAN THEORY

Under this theory, voters cannot trust the government to spend their tax dollars efficiently and must design ways to combat government greed.

This view of government can explain the many rules in place in the United States and elsewhere that explicitly tie the government's hands in terms of taxes and spending.

PUBLIC VS. PRIVATE PROVISION

The key question raised by this discussion is whether goods and services are provided more efficiently by the public or the private sector.

For the production of purely private goods and services, such as steel, telecommunications, or banking, it seems abundantly clear that private production is more efficient.

For some goods the public does not understand well (pension funds, health insurance), private competition can lead to wasteful advertising (private firms compete on neat mailings rather than underlying product quality) and higher administrative costs than public provision

PROBLEMS WITH PRIVATIZATION

Natural monopoly: A market in which, because of the uniformly decreasing marginal cost of production, there is a cost advantage to have only one firm provide the good to all consumers in a market.

In *economies of scale*, the average cost of production falls as the quantity of the output increases.

Private monopoly maximizes profits and under-produces and over-prices relative to efficient outcome: if the government runs or regulates the monopoly, it can restore efficient quantity

Contracting out: An approach through which the government retains responsibility for providing a good or service, but hires private sector firms to actually provide the good or service.



APPLICATION

Contracting Out with Non-Competitive Bidding

Science Applications International Corporation (SAIC) was hired to conduct a series of environmental testing and cleanup jobs at Kelly Air Force Base in Texas.

The contracts had been awarded without competitive bidding, and the government paid the negotiated price of \$24 million.

However, in 2002, the government brought a fraud suit against SAIC.

In the weeks following Hurricane Katrina, concerns were raised over the fact that more than 80% of the \$1.5 billion in contracts signed by FEMA were awarded without bidding or with limited competition.

One company that has come under scrutiny is Ashbritt, a company based in Pompano Beach, FL, which was awarded a \$568 million contract for debris removal.

CORRUPTION

Corruption: The abuse of power by government officials in order to maximize their own personal wealth or that of their associates.

Electoral accountability is the ability of voters to throw out corrupt regimes.

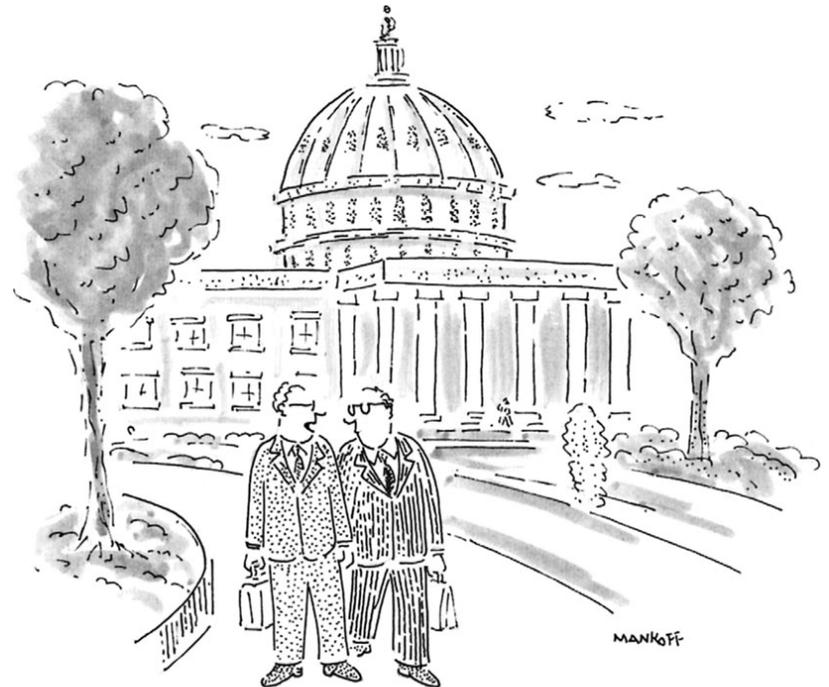
Corruption also appears more rampant in political systems that feature more *red tape*, bureaucratic barriers that make it costly to do business in a country.

▶ APPLICATION

Government Corruption

Corruption can take many forms, but the common theme is government officials using their power to enrich themselves or their associates.

1. In December 2003, former governor of Illinois George Ryan was indicted by a federal grand jury for selling state contracts to his friends in exchange for cash, gifts, loans, and trips for his family.
2. Carlos Menem was elected President of Argentina in 1989 and immediately rewarded members of his political party with cushy government jobs requiring only the occasional appearance to pick up a paycheck.



“But how do you know for sure you’ve got power unless you abuse it?”

IMPLICATIONS OF GOVERNMENT FAILURE

Do these failures have important implications?

Or can citizens use policies such as property tax limitations to limit harms imposed by government structure?

Some evidence suggests that government failures can have long-lasting negative impacts on economic growth

Government Failures and Economic Growth

Studies that suggest that poor government structure can have long-lasting negative impacts on economic growth

1) Acemoglu-Robinson (2012) *Why Nations Fail*: countries with “inclusive governments” (extending political and property rights broadly) grow faster than countries with “extractive governments” (power held by small self-serving elite)

Example: North and South Korea had similar economies when they split in 1948 and have had dramatically different economic development (10 to 1 per capita income ratio) ⇒ Government policies/failures can have a huge impact

2) Mauro (1995) uses data rating the quality of government along various dimensions (red tape, corruption, etc.): finds that countries with low quality government have lower growth

The difficulty is that the nations with high-quality governments (the treatment group) may differ from those with low-quality governments (the control group) for other reasons as well, biasing the estimates of the effect of government quality.

CONCLUSION

The government is assumed to be a benign actor that serves only to implement the optimal policies to address externalities, to provide public goods and social insurance, and to develop equitable and efficient taxation. In reality, the government is a collection of individuals who have the difficult task of aggregating the preferences of a large set of citizens.

The core model of representative democracy suggests that governments are likely to pursue the policies preferred by the median voter, which in most cases should fairly represent the demands of society on average. Yet, while that model has strong evidence to support it, there is offsetting evidence that politicians have other things on their mind.

The extent to which government serves or fails to serve the interests of its citizens is a crucial one for future research in political economy.