This lesson focuses on the fourth question of public finance: *Why* do governments do what they do? We start by discussing the “best case scenario” in which government appropriately measures and aggregates the preferences of its citizens in deciding what projects to undertake. Then we examine both direct democracy and representative democracy. Finally, we examine government failure, the inability (or unwillingness) of government to appropriately address market failures.

**UNANIMOUS CONSENT ON PUBLIC GOODS LEVELS: Lindahl Pricing**

*Lindahl pricing* is a system where individuals report their willingness-to-pay for each quantity of the public good, and the government aggregates preferences to form a measure of the social benefit.

- First, the government announces *tax prices* for the public good, that is, the share of the cost that each individual must bear.
  - Each person announces how much of the public good he or she wants at those tax prices.
  - If the individual announcements differ, the government raises the tax price for the person who wants more of the good, and lowers it for the person who wants less.
- When a tax price is arrived at where both individuals want the same amount of the public good, the government has reached Lindahl equilibrium.
- The government produces the public good at that level, and finances it by charging each person their tax price.

**Figure 1. Lindahl pricing**

- Jack's surplus is this area
- Ava's surplus is this area
- Adding up their individual demand curves vertically gives the aggregate demand.
Lindahl Pricing

- Lindahl pricing corresponds to the concept of benefit taxation, which occurs when individuals are being taxed for a public good according to their valuation of the benefit they receive.
- With Lindahl pricing, the government does not need to know the utility functions of individual voters: it gets the voters to reveal their preferences by stating their willingness to pay for different levels of the public good.

Problems with Lindahl Pricing

- Lindahl pricing is unlikely to work in practice, however.
  - Preference revelation problem: Individuals may behave strategically, and pretend their willingness to pay is low in order to get others to bear a larger cost of the public good.
  - Preference knowledge problem: It is hard for people to properly value goods they do not shop for on a regular basis.
  - Preference aggregation problem: Aggregating millions of voters’ preferences is difficult in reality.

MECHANISMS FOR AGGREGATING INDIVIDUAL PREFERENCES

- Let’s turn now to how voting can serve to aggregate individual preferences into a social decision.
  - Focus on direct democracy, whereby voters directly cast ballots in favor of or in opposition to particular public projects.
  - A common mechanism used to aggregate individual votes into a social decision is majority voting, in which individual policy options are put to a vote, and the option that receives the majority of votes is chosen.

Majority Voting: When It Works

- Majority voting does not always provide a consistent means of aggregating preferences.
- To be consistent, an aggregation mechanism must satisfy three goals:
  - Dominance: If one choice is preferred by all voters, then the aggregation mechanism must be such that this choice is made by society.
  - Transitivity: Choices must satisfy this mathematical property.
  - Independence of Irrelevant Alternatives: The introduction of a third choice does not change the ranking of the first two choices.
Table 1

A town is deciding on education spending. There are 3 possibilities: high, medium, and low spending. There are also 3 groups, represented in equal proportions.

The preferences of parents are for high spending, then medium spending, then low spending.

While the elderly are exactly opposite. Finally, the “young couples” do not have kids and do not want to pay high taxes right now. Their preferences are for medium spending, then low, then high.

Consider pair-wise voting: High vs Low, High vs Medium, and Medium vs Low.

High vs Low: Parents vote for H, Elderly & Young vote for L. L wins 2-1.

High vs Medium: Parents vote for H, Elderly & Young vote for M. M wins 2-1.

Medium vs Low: Parents and Young vote for M, Elderly vote for L. M wins 2-1.

Since M has beaten both H and L, M is the overall winner in this case.

Table 2

A town is again deciding on education taxes (and spending). The elderly have been replaced with “private parents.” The other 2 groups are the same as before.

Consider pair-wise voting: High vs Low, High vs Medium, and Medium vs Low.

Private parents, first and foremost, want low taxes so they can afford to send their kids to private schools. Assuming that doesn’t happen, however, private parents want high quality public education. Thus, their ordering is low, then high, then medium.

High vs Low: Only “public parents” vote for H, L wins 2-1.

High vs Medium: Only Young Marrieds vote for M, so H wins 2-1.

Medium vs Low: Only private parents vote for L, so M wins 2-1.

Hmmm … There is no clear winner. L is preferred to H. H is preferred to M. M is preferred to L. This violates the transitivity assumption and leads to cycling.

Majority Voting: When It Doesn’t Work

This set of outcomes is problematic because there is no clear winner. These results violate the principle of transitivity resulting in cycling—when majority voting does not deliver a consistent aggregation of individual preferences.

Note that the failure to get a consistent winner from majority voting does not reflect a failure on the part of individuals—each group has a sensible set of preferences.

The problem is aggregation—we are unable to use voting to aggregate these individual preferences into a consistent social outcome.
Arrow’s Impossibility Theorem

- In fact, there is no voting system that will produce a consistent outcome here.
- **Arrow’s Impossibility Theorem** states that there is no social decision (voting) rule that converts individual preferences into a consistent aggregate function without either restricting preferences or imposing a dictatorship.

Restricting Preferences to Solve the Impossibility Theorem

- One way to solve this problem is to restrict preferences to “single-peaked” preferences.
  - A “peak” in preferences is a point that is preferred to all its immediate neighbors. Utility falls in any direction away from this point.
  - Multi-peaked preferences mean that utility may first rise, then fall, then rise again.
  - If preferences are single peaked, majority voting will yield a consistent outcome.
  - We can visualize our earlier examples. See Figure 2.

The failure of these preferences for the “private parents” in this second case is what leads to the inability of majority voting to consistently aggregate preferences.

Fortunately, single-peakedness is a reasonable assumption in many cases.
Median Voter Theory

- When preferences are single-peaked, then majority voting will deliver a consistent aggregation of preferences of the individual voters.
- Even stronger, the median voter theorem states that majority voting will yield the outcome preferred by the median voter if preferences are single peaked.
- The median voter is the voter whose tastes are in the middle of the set of voters, so an equal number of other voters prefer more and prefer less of the public good.

Potential Inefficiency of the Median Voter Outcome

- Thus, the voting would suggest that the government only needs to find the preferences of the median voter, and implement that level of public goods.
- This does not account for intensity of preferences, however, so it does not follow that the social marginal benefits equal the social marginal cost.
- For example, if small numbers of individuals derive enormous benefits from the public good, this should be accounted for in the total social marginal benefits.

Representative Democracy: Vote-Maximizing Politicians

- In reality, voters elect representatives, who are supposed to aggregate their preferences and take them into account when they vote on the appropriate level of public goods.
- If politicians care about maximizing the number of votes they get, they choose the outcome preferred by the median voter.
### Assumptions of the Median Voter Model

- The median voter model is a powerful tool, but relies on a number of assumptions worth mentioning:
  - Single-dimensional voting: Voters only care about one issue.
  - Only two candidates: With a 3rd candidate, there is no stable equilibrium.
  - No ideology or influence: Assumes politicians only care about votes, not ideological positions.
  - No selective voting: All citizens actually vote.
  - No money as a tool of influence.
  - Perfect information along three dimensions: voter knowledge of the issues, politician knowledge of the issues, and politician knowledge of voter preferences.

### Evidence on the Median Voter Model

- While the median voter model is a potentially powerful tool, does it have predictive power?
- The empirical evidence is mixed. It certainly does not completely explain legislator behavior. There is strong evidence that legislators consider their own ideology, and that of their core constituency, when they vote on policies.

### Lobbying

- The issues of money and information make it likely that elected officials will be lobbied by highly interested and informed subgroups.
- **Lobbying** is the expending of resources by certain individuals or groups in an attempt to influence a politician.
- Lobbyists can:
  - Inform politicians
  - Reward politicians
- The problem with lobbying arises when an issue benefits a small group and imposes small costs on a larger (perhaps even a majority) group.
  - In this case, politicians might support socially inefficient positions.
  - Large groups of people with small individual interest on an issue suffer from a free rider problem in trying to organize politically.
  - Small groups with large interest overcome the free-rider problem.

### Public Choice Theory: The Foundations of Government Failure

- The analysis in most of this course assumes a benign government intent on maximizing social welfare.
- **Public choice theory** questions this assumption by noting that governments often do not behave in an ideal manner, so that traditional assumption of a benevolent social-welfare maximizing government may be inappropriate.
- **Government failure** is the inability or unwillingness of the government to act primarily in the interest of its citizens. Reasons include:
  - Size maximizing bureaucracy
  - Leviathan theory
  - Corruption
Size-Maximizing Bureaucracy

- Niskanen (1971) developed a model of the *budget maximizing bureaucrat*. In this model, the bureaucrat runs an agency that has a monopoly on the government provision of some good or service.
- The Bureaucrat’s salary is sometimes unrelated to efficiency. His compensation may consist of salary, but also perks like the size of his office and support staff.
- The larger government tries to rein in the bureaucrat.

Leviathan Theory

- *Leviathan theory* sees individual bureaucrats and the larger government as one monopolist that simply tries to maximize the size of the public sector.
- This view would help explain rules that explicitly tie the government’s hands in terms of taxes and spending.

Corruption

- Finally, *corruption* is where government officials abuse their power in order to maximize their own personal wealth or that of their associates.

The Implications of Government Failure

- There is clear evidence that governments fail in some instances to benevolently serve the interests of their citizens.
- Can citizens “undo” these harms through actions like direct democracy?
  - There is some evidence that more “open” and more well-funded governments have less corruption.
- Some evidence suggests that government failures can have long-lasting negative impacts on economic growth.