In 2004, President Bush threatened to use his first veto to kill a highway spending bill written by a Congress controlled by his own party. The reason? The bill contained so many projects of dubious value that he could not justify increasing the deficit further. (The bill would cost $275 billion over the next six years.) Perhaps the most egregious offenders were two bridges slated for construction in Alaska.\textsuperscript{1}

One bridge would cost $200 million to build and would be among the tallest in America, nearly the height of the Golden Gate Bridge in San Francisco. Unlike the Golden Gate, however, it would not serve millions of travelers a year. Instead, it would connect the town of Ketchikan (population 7,845) with an island that houses 50 residents and the area’s airport (offering six flights a day). The crossing from Ketchikan to the island is now made by a ferry that takes five minutes and that one resident calls “pretty darn reliable.” The other bridge, which would cost taxpayers up to $2 billion, would be two miles long, connecting Anchorage to a port with one resident and almost no homes or businesses.

Such economically useless endeavors are clear examples of politicians deriving power by bringing funds, and thus jobs, to their home districts. One resident of Ketchikan observed, “Everyone knows it’s just a boondoggle that we’re getting because we have a powerful congressman.” That congressman is Alaska’s lone representative, Republican Don Young (also called “Mr. Concrete”). As chairman of the Transportation and Infrastructure Committee when the 2004 highway bill was written, he declared, “This is the time to take advantage of the position I’m in.... If I had not done fairly well for our state, I’d be ashamed of myself.” In defending the provision of such political “pork” (federal spending for local projects that serve mostly to transfer federal dollars to a politician’s constituents), Missouri senator Kit Bond once said, “Pork is a mighty fine diet for Missouri, low in fat and high in jobs.”\textsuperscript{2}

\begin{itemize}
  \item \textsuperscript{1} Egan (2004).
  \item \textsuperscript{2} Mallaby (2004).
\end{itemize}
In July of 2005, the House and Senate approved the transportation bill, which was signed by President Bush in August. Ultimately, $286.4 billion were allocated. Over $24 billion of the total amount was set aside for spending on 6,373 pet projects. In the final bill was $1 billion earmarked for over 100 pork projects in Alaska, including the Ketchikan and Anchorage bridges. Although Alaska ranks 47th in the nation in terms of population, it received more pork than all but three other states. As Congressman Young said of the bill, “I stuffed it like a turkey.” Despite the promise of federal funding, however, the Ketchikan “Bridge to Nowhere” was never undertaken and became a symbol of excessive pork in the 2008 Presidential election. The Anchorage bridge project, however, continues in its design phase.

In Chapter 7, we learned how to determine the optimal level of public goods by setting social marginal costs and benefits equal; in Chapter 8 we learned how to use cost-benefit analysis to quantify the costs and benefits of public projects. In the real world, however, economists do not get to decide whether public policies are undertaken or not. Instead, such decisions are made in the context of a complex political system. In some countries, these decisions may be made by a single ruler or group of rulers. In others, the decisions are made by elected officials or by the direct votes of citizens. Do any or all of these mechanisms deliver the optimal interventions suggested by the theoretical analyses of this book? In some cases they will, but in other cases they will not.

This chapter discusses how government actually operates when it makes decisions about the economy, such as the provision of public goods. This chapter is the only place in the book that focuses specifically on the fourth question of public finance: Why do governments do what they do? We begin by discussing the best-case scenario in which a government appropriately measures and aggregates the preferences of its citizens in deciding which public projects to undertake. We then discuss the problems with this idealized scenario and turn to more realistic cases.

One more realistic case is that of direct democracy, whereby voters directly cast ballots in favor of or in opposition to particular public projects. We discuss how voting works to turn the interests of a broad spectrum of voters into a public goods decision. The second case is that of representative democracy, whereby voters elect representatives, who in turn make decisions on public projects. We discuss when it is likely or not likely that representative democracy yields the same outcomes as direct democracy.

In the final section of the chapter, we move beyond models of voting behavior to talk in broader terms about the prospects for government failure, the inability or unwillingness of governments to appropriately address market failures. We discuss some of the implications of government failure and discuss evidence about its importance to economic well-being.

\(^3\) Rosenbaum (2005).
\(^4\) Taxpayers for Common Sense (2005).
\(^5\) Marsh (2005).
Unanimous Consent on Public Goods Levels

Our discussion of political economy starts with the example of a government that is able to optimally determine the level of public goods to provide through the unanimous consent of its citizens. It does so through **Lindahl pricing**, a system by which individuals report their willingness to pay for the next unit of a public good, and the government aggregates those willingnesses to form an overall measure of the social benefit from that next unit of public good. This marginal social benefit can then be compared to the marginal social cost of that next unit of public good to determine the optimal amount of the public good, and the good can be financed by charging individuals what they were willing to pay. We then discuss the problems that governments face in implementing this solution in practice, to set the stage for discussing the more realistic mechanisms that governments use to determine the level of public goods.

**Lindahl Pricing**

This approach, as introduced by the Swedish economist Erik Lindahl in 1919, relies on using individuals’ **marginal willingness to pay**, the amount that individuals report themselves willing to pay for an incremental unit of a public good. Recall from Chapters 2 and 5 that the demand curve for any private good measures the marginal willingness to pay for that private good. Lindahl suggested that we could similarly construct a demand curve for public goods by asking individuals about their willingness to pay for different levels of public goods.

To illustrate Lindahl’s procedure, suppose that we have a public good, fireworks, with a constant marginal cost of $1. This public good will be provided to two people, Ava and Jack. Remember the key feature of public goods from Chapter 7: the fireworks must be provided in equal quantities to both Ava and Jack. Lindahl’s procedure operates as follows:

1. The government announces a set of **tax prices** for the public good, the share of the cost that each individual must bear. For example, the government could announce that Ava and Jack are each paying 50¢ of the cost of a firework, or that Ava pays 90¢ and Jack pays 10¢.
2. Each individual announces how much of the public good he or she wants at those tax prices.
3. The government repeats these steps to construct a **marginal willingness to pay schedule** for each individual that shows the relationship between willingness to pay and quantity of public goods desired.
4. The government adds up individual willingnesses to pay at each quantity of public good provided to get an overall demand curve for public goods ($D_{A+J}$).
5. The government relates this overall demand curve to the marginal cost curve for the public good to solve for the optimal public good quantity.

6. The government then finances this public good by charging individuals their willingness to pay for that quantity of public good.

This point is illustrated graphically in Figure 9-1. Panel (a) shows Ava’s marginal willingness to pay for fireworks. For the first firework, Ava has a marginal willingness to pay of $1. For the 50th firework, she has a marginal willingness to pay of 50¢. For the 75th firework, she has a marginal willingness to pay of 25¢, and by the 100th firework her marginal willingness to pay is zero. Panel (b) shows Jack’s marginal willingness to pay for fireworks. For the first firework, Jack has a marginal willingness to pay of $3. For the 50th firework, he has a marginal willingness to pay of $1.50. For the 75th firework, he has a marginal willingness to pay of 75¢, and by the 100th firework his marginal willingness to pay is also zero.

Panel (c) shows the aggregate marginal willingness to pay for fireworks. Ava and Jack are together willing to pay $4 for the first firework; since this is well above the marginal cost of a firework ($1), the first firework should clearly be produced. Ava and Jack are willing to pay $2.00 for the 50th firework, which is once again well above the marginal cost of a firework. The marginal cost curve intersects their aggregate willingness to pay curve at the 75th firework, when they are together willing to pay the $1.00 marginal cost of the firework. Thus, the Lindahl equilibrium involves charging Ava 25¢ and Jack 75¢ for each of 75 fireworks.

This is an equilibrium for two reasons. First, both Ava and Jack are happy: they are both happy to pay those tax prices to get 75 fireworks. Second, the government has covered the marginal cost of producing the fireworks by charging each individual his or her marginal willingness to pay. 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 from the good.

Importantly, this equilibrium is also the efficient level of public goods provision, the point at which the sum of the social marginal benefits of the public good is set equal to social marginal cost. Notice the parallel between Figure 9-1 and Figure 7-2 (page 186) from Chapter 7. In both cases, we vertically sum the individual demand curves to get a social demand curve for public goods, and then set social demand equal to the social marginal cost of the public good to determine the optimal level of public goods provision. In Chapter 7, this was accomplished by maximizing utility functions to obtain each individual’s demand for public goods and then adding them to get a total social demand. 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. Yet the outcome is the same: the sum of social marginal benefits (computed by the government in Chapter 7, or revealed by each voter in the Lindahl equilibrium) is set equal to social marginal cost.

Problems with Lindahl Pricing

Although Lindahl pricing leads to efficient public goods provision in theory, it is unlikely to work in practice. In particular, there are three problems that get in the way of implementing the Lindahl solution.

Preference Revelation Problem The first problem is that individuals have an incentive to lie about their willingness to pay, since the amount of money they pay to finance the public good is tied to their stated willingness to pay. Individuals may behave strategically and pretend that their willingness to pay is low so that others will bear a larger share of the cost of the public good. The incentive to lie with Lindahl pricing arises because of the free rider problem: if an individual reports a lower valuation of the public good, she pays a lower amount of tax but she doesn’t get much less of the public good. Suppose, for example, that Jack lied and said that his preferences were identical to Ava’s. Following the procedure we used earlier, we find that at the Lindahl equilibrium Jack and Ava will each pay 50¢, and 50 fireworks will be produced. Jack now pays $25 for the fifty fireworks, whereas in the previous example he paid 75¢ for each of 75 fireworks, for a total of $56.25. Thus, Jack pays less than half the total he paid before, but receives two-thirds as many fireworks; he is now free riding on Ava. Ava used to pay 25¢ for each of 75 fireworks, or $18.75. Now, she pays more ($25) to get fewer fireworks (50 instead of 75)! Especially in large groups, individuals have a strong incentive to underreport their valuation of the public good, and thus shift more of the costs to others.

Preference Knowledge Problem Even if individuals are willing to be honest about their valuation of a public good, they may have no idea of what that valuation actually is. How would you answer the question of how much you value
fireworks or national defense? It is very hard for individuals to properly value goods they don’t shop for on a regular basis.

**Preference Aggregation Problem** Even if individuals are willing to be honest and even if they know their valuation of the public good, there is a final problem: How can the government aggregate individual values into a social value? In our example, it was straightforward to keep asking Jack and Ava their willingness to pay in order to trace out their willingness to pay curves and find the correct level of public goods provision. This will clearly be considerably more difficult in reality. In the case of national defense in the United States, it is simply impossible to canvas each of 260 million U.S. citizens and ask them the value they place on the missiles, tanks, and soldiers that protect them.

Thus, the Lindahl pricing solution, while attractive in theory, is unlikely to work in practice. In the next two sections, we discuss more practical solutions to determining the optimal level of public goods. In particular, we focus on two questions. First, how can societies use voting mechanisms to effectively aggregate individual preferences? Second, how well do elected representatives carry out the preferences of individual voters?

### 9.2 Mechanisms for Aggregating Individual Preferences

In this section, we discuss how voting can serve to aggregate individual preferences into a social decision. We do not yet discuss the fact that voters elect representatives, who then make policy decisions. For now, we are considering only direct voting on policies, as discussed in the following application.

#### APPLICATION

**Direct Democracy in the United States**

On February 11, 1657, the residents of the town of Huntington, New York, held a meeting and voted to hire Jonas Houldsworth as the first schoolmaster of their town. Almost 350 years later, a similar meeting held in the town of Stoneham, Massachusetts, rejected a $6 million plan to convert the local arena into a major sports complex. Through three and a half centuries, the tradition of *direct democracy*, whereby individuals directly vote on the policies that affect their lives, remains strong in America—and, indeed, has grown throughout the twentieth century.

---

6 Information on direct democracy comes largely from the Initiative and Referendum Institute at the University of Southern California and can be accessed at http://www.iandrinstitute.org/. Matusaka (2005) provides an excellent review of the issues surrounding direct democracy.
At the local level, the town meeting remains an important venue for decision making in many New England communities. Bryan (2003) undertook a comprehensive study of meetings in 210 Vermont towns over the 1970–1998 period, encompassing 1,435 meetings attended by 63,140 citizens. Town meetings were typically held once per year and were open to all registered voters. In some cases, votes occurred at the meeting; in others the meeting was deliberative only and voting occurred the next day. On average, over one-fifth of all Vermont residents participated in a town meeting. Other towns do not have a town meeting, but have direct local voting on town budgets. For example, on April 18, 2006, voters from 549 of New Jersey’s school districts voted on school board members and the budget for their local schools. Local voters approved only about half of the budgets proposed by their school boards; the remainder were sent back to the municipality, which then made changes or cuts to meet the local mandate.

Direct democracy plays an important role at the state level as well. A state referendum allows citizens to vote on state laws or constitutional amendments that have already been passed by the state legislature. All states allow legislative referenda, whereby state legislatures or other officials place such measures on the ballot for citizens to accept or reject. Twenty-four states allow popular referenda, whereby citizens, if they collect enough petition signatures, can place on the ballot a question of whether to accept or reject a given piece of state legislation. The important feature of a referendum is that it is designed to elicit reactions to legislation that politicians have already approved.

Much more frequent than referenda are voter initiatives, which allow citizens, if they can collect enough petition signatures, to place their own legislation on the ballot for voters to accept or reject. Twenty-four states allow such initiatives, the first two of which (concerning election reforms and alcohol regulation) made it to Oregon’s ballot in 1904. Since that time, over 8,000 initiatives have been filed by concerned citizens. More than 2,000 of these initiatives have made it to state ballots, and 40% of these have passed. Interestingly, 60% of all initiative activity occurs in six states: Arizona, California, Colorado, North Dakota, Oregon, and Washington.

Initiatives were very popular early in the twentieth century with the rise of the Progressive political movement, and from 1911 to 1920 there were nearly 300 initiatives on various state ballots. That activity had tapered off dramatically by the 1960s, when fewer than 100 initiatives made it to state ballots. In 1978, California voters passed Proposition 13, an initiative that amended the state constitution to severely limit property tax rates that local governments could impose (discussed in more depth in Chapter 10). The measure sparked a wider “tax revolt” throughout other states, and the initiative once again became a frequently used political tool. The 1990s saw nearly 400 initiatives on state ballots (a record high of 48% were approved); in 1996 alone, almost 100 initiatives were voted on. Since 1996, however, the rate of initiatives has tapered off, with only 68 on the ballots in the 2008 elections.
Referenda and initiatives can be sparked by all kinds of issues. Early in the twentieth century, voters changed election rules, alcohol regulation, labor laws, and the administration of government. By the 1970s voters were interested in tax reform, environmental issues, and nuclear developments. By the 1990s, physician-assisted suicide, animal rights, gaming regulations, and politician term limits were among the many issues considered directly by the voters.

**Majority Voting: When It Works**

The Lindahl pricing scheme had a very high standard for setting the level of public goods: only when all citizens were unanimously in agreement did the government achieve the Lindahl equilibrium. In practice, the government typically does not hold itself to such a high standard. 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. Yet even this lower standard can cause difficult problems for governments trying to set the optimal level of public goods.

In this section, we discuss the conditions under which majority voting does and does not provide a successful means of aggregating the preferences of individual voters. In this context, success means being able to consistently aggregate individual preferences into a social decision. To be consistent, the aggregation mechanism must satisfy three goals:

- **Dominance**: If one choice is preferred by all voters, the aggregation mechanism must be such that this choice is made by society; that is, if every individual prefers building a statue to building a park, the aggregation mechanism must yield a decision to build a statue.

- **Transitivity**: Choices must satisfy the mathematical property of transitivity: if a large statue is preferred to a medium-size statue, and a medium-size statue is preferred to a small statue, then a large statue must be preferred to a small statue.

- **Independence of irrelevant alternatives**: Choices must satisfy the condition that if one choice is preferred to another, then the introduction of a third independent choice will not change that ranking. For example, if building a statue is preferred to building a park, then the introduction of an option to build a new police station will not suddenly cause building a park to be preferred to building a statue.

These three conditions are generally viewed as necessary for an aggregation mechanism to provide a successful translation of individual preferences to aggregate decisions. In fact, however, majority voting can produce a consistent aggregation of individual preferences only if preferences are restricted to take a certain form.

To illustrate this point, consider the example of a town that is deciding between alternatives for school funding. Schools, an impure public good (as discussed in Chapter 11), are financed by property taxes, so a higher level of
funding also means higher taxes for the town’s property owners. The town is choosing between three possible levels of funding: \( H \) is the highest level of funding (and thus highest property taxes); \( M \) is a medium level of funding and property taxes; and \( L \) is a low level of funding and property taxes. There are three types of voters in this town, with equal numbers in each group:

- **Parents**, whose main concern is having a high-quality education for their children. This group’s first choice is \( H \), their second choice \( M \), and their third (least-preferred) choice is \( L \).
- **Elders**, who don’t have children and therefore don’t care about the quality of local schools, so their main priority is low property taxes. This group’s first choice is \( L \), their second choice is \( M \), and their third choice is \( H \).
- **Young couples without children**, who do not want to pay the high property taxes necessary to fund high-quality schools right now but who want the schools to be good enough for their future children to attend. This group’s first choice is \( M \), their second choice is \( L \), and their third choice is \( H \).

The preferences of these three groups are represented in Table 9-1.

Suppose the town uses majority voting to choose a level of funding for local schools and that to reach a decision the town compares one alternative with another through a series of pairwise votes until there is a clear winner. At each vote, individuals will vote for whichever of the presented options they prefer. Since there are three options, this will require a series of pairwise votes. For example, the town could proceed as follows:

- First, vote on funding level \( H \) versus funding level \( L \). The parents will vote for funding level \( H \), since they prefer it to funding level \( L \). The elders and the young couples will both vote for funding level \( L \), however, since they prefer it to the higher funding level \( H \). Thus, \( L \) gets two votes and \( H \) gets one, so \( L \) wins the first pairwise vote.

- Then, vote on funding level \( H \) versus funding level \( M \): \( M \) gets two votes (elders and young couples prefer \( M \) to \( H \)) and \( H \) gets one (parents), so \( M \) wins the second pairwise vote.

- Then, vote on funding level \( L \) versus funding level \( M \): \( M \) gets two votes (parents and young couples prefer \( M \) to \( L \)) and \( L \) gets one (elders), so \( M \) wins the third pairwise vote.

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.

### Table 9-1

<table>
<thead>
<tr>
<th>Preference Rankings</th>
<th>Parents (33.3%)</th>
<th>Elders (33.3%)</th>
<th>Young Couples (33.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>( H )</td>
<td>( L )</td>
<td>( M )</td>
</tr>
<tr>
<td>Second</td>
<td>( M )</td>
<td>( M )</td>
<td>( L )</td>
</tr>
<tr>
<td>Third</td>
<td>( L )</td>
<td>( H )</td>
<td>( H )</td>
</tr>
</tbody>
</table>

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 Doesn’t Work

Suppose now that the town is the same except that the elderly are replaced by individuals who have children but are contemplating choosing private school over the local public schools to make sure that their children get the best possible education. This group’s first choice is low public school spending and low property taxes: if property taxes are low, they can afford to send their children to private school. If they can’t get low school spending, then their second choice is high school spending and high property taxes. Without the low taxes, they will not be able to afford to send their children to private schools; they will therefore choose public schools, in which case they want the highest quality public schools and are willing to pay the taxes to support them. From these new families’ perspective, the worst outcome would be medium spending. They would face somewhat high property taxes, but because the schools wouldn’t be top quality, they would send their children to private school anyway.

The set of preferences with this new group included is shown in Table 9-2. If the town uses the same pairwise majority voting approach to assess the spending level with these new preferences, the outcome would be:

- First, vote on funding level $H$ versus funding level $L$: $L$ gets two votes ($L$ is preferred to $H$ for the private school group and the young couples) and $H$ gets one ($H$ is preferred to $L$ for the parents), so $L$ wins.
- Then, vote on funding level $H$ versus funding level $M$: $H$ gets two votes (public and private school parents prefer $H$ to $M$) and $M$ gets one (young couples prefer $M$ to $H$), so $H$ wins.
- Then, vote on funding level $L$ versus funding level $M$: $M$ gets two votes (public school parents and young couples prefer $M$ to $L$) and $L$ gets one (private school parents prefer $L$ to $M$), so $M$ wins.

This set of outcomes is problematic because there is no clear winner: $L$ is preferred to $H$, and $H$ is preferred to $M$, but $M$ is preferred to $L$! Indeed, no matter what order the pairwise votes occur, there is never a clear winner. These results violate the principle of transitivity, resulting in cycling: when we aggregate the preferences of the individuals in this town, we do not get a consistently preferred outcome. So majority voting has failed to consistently aggregate the preferences of the town’s voters.

Note that the failure to get a consistent winner from majority voting does not reflect any failure of the individuals in the town; as described, each individual has a sensible set of preferences across the spending levels. The problem is in aggregation: we are unable to use voting to aggregate these individual preferences into a consistent social outcome. This creates the problem that the agenda setter, the person who decides how voting is to be done (which mechanism and in which order), can significantly influence the outcome. For example, an
agenda setter who wanted low spending could first set up a vote of $M$ versus $H$, which $H$ would win, and then of $H$ versus $L$, which $L$ would win, and declare that $L$ was the winner. Or an agenda setter who wanted high spending could first set up a vote of $M$ versus $L$, which $M$ would win, and then of $M$ versus $H$, which $H$ would win, and declare that $H$ was the winner. The inability to get a consistent winner from majority voting can, ultimately, give dictatorial power to the agenda setter.

**Arrow’s Impossibility Theorem**

The failure to consistently aggregate individual preferences is not just a problem with majority voting. In the example with the private school parents, there is in fact no voting system that will produce a consistent outcome. Consider some alternative approaches:

- We could let everyone vote on their first choice, rather than pairwise voting, but this would just produce a three-way tie in both examples since each group is the same size and has a different first choice.
- We could do weighted voting by assigning, for example, 3 points for one’s first choice, 2 points for one’s second choice, and 1 point for one’s third choice, and then pick the outcome with the most points. In the first example, $M$ would win with 7 points while $L$ would have 6 and $H$ would have 5. In the second example, however, there would be a three-way tie, with each option having 6 points.

One of the most important insights of political economy theory was developed by Nobel Prize–winning economist Kenneth Arrow in 1951. Arrow’s Impossibility Theorem states that there is no social decision (voting) rule that converts individual preferences into a consistent aggregate decision without either (a) restricting the type of preferences assumed for voters or (b) imposing a dictatorship. That is, no matter what the voting rule is, one can always find examples where it cannot be used to turn individual preferences into a clear, socially preferred outcome through majority voting unless one chooses one of two shortcuts. The first is to restrict voters’ preferences by imposing some additional assumptions on the general structure of preferences. The second shortcut is to impose a dictatorship: a dictator can always make a consistent social decision simply by imposing her preferences.

**Restricting Preferences to Solve the Impossibility Problem**

The most common restriction of preferences that is used to solve the impossibility problem is to impose what are called single-peaked preferences. A “peak” in preferences (also called a local maximum) is a point that is preferred to all its immediate neighbors. Single-peaked preferences feature only one such point, so utility falls as choices move away in any direction from the peak.  

---

7 See Arrow (1951) for more details.
choice. Multi-peaked preferences feature more than one such point, so that utility may first rise to a peak, then fall, then rise again to another peak. The key advantage of single-peaked preferences for economic theory is that any peak can be assured of being the only peak. That is, if utility falls in both directions away from any point, we can be sure that a voter prefers this option most. With multi-peaked preferences, this is not necessarily the case; utility may fall away from a peak but then rise again to a new peak.

If preferences are single-peaked, majority voting will yield consistent outcomes. We can understand this concept visually by graphing out our earlier examples. Figure 9-2 graphs the utility from each choice (the vertical axis) against the level of spending represented by that choice (the horizontal axis). For example, in both panels of Figure 9-2, parents’ preferences are summarized by line $AB$: they get the largest utility value, $U_{\text{first}}$, at the highest level of spending. At the medium level of spending, they get a medium utility value, $U_{\text{second}}$. At the lowest level of spending, they get a low utility value, $U_{\text{third}}$.

In panel (a), which graphs the example shown in Table 9-1, all preferences are single-peaked. The single peak of the parents is high spending: relative to the point with high spending (point $A$), utility is always falling (as spending declines). The single peak of the elders is low spending: relative to the point with low spending (point $C$), utility is always falling (as spending rises). The single peak of the young couples is medium spending: relative to the point with medium spending (point $F$), utility is always falling (as spending either rises or falls).

**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.
Panel (b) corresponds to the second example (summarized in Table 9-2), in which the elders are replaced with parents considering private school, a group that has double-peaked preferences. These families have a peak at low spending (point G), their first choice; then, as spending rises, their utility falls to point H (medium spending gives them the lowest utility). Unlike the other families, however, their utility then rises again as spending moves from medium to high spending, creating a second peak (point I). The failure of the single-peaked preferences assumption in this second case is what leads to the inability of majority voting to consistently aggregate preferences.

Fortunately, single-peakedness is generally a reasonable assumption to make about preferences. In most cases, when choosing among public goods such as national defense, individuals will have one preferred level, with utility falling as spending either rises or falls from that level. Single-peakedness is a potentially problematic assumption, however, when there is the possibility of a private substitute for a public good. The schools example is a good illustration of this point. If private substitutes are available, individuals could be worst off with the middle option, leading to double-peaked preferences. Another example might be voting about the quality of a local park. Individuals might want either a very nice local park or no local park (in which case they’ll just rely on their own backyards), but having a mediocre local park (paid for by local taxes) could be the worst option of all.

**Median Voter Theory**

If the preferences of voters are single-peaked, majority voting will deliver a consistent aggregation of the preferences of the individual voters. Under this assumption of single-peaked preferences, in fact, we can make an even stronger statement about the outcome of majority voting across public goods options. 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.

In both examples, the median voters are the young couples; their first preference is for the middle option, and in each case there is one voter group that prefers low spending and another that prefers high spending. In the first case, where preferences are single-peaked, the outcome preferred by the median voter is the one chosen (medium spending). In the second case, where one voter group has double-peaked preferences, the outcome is not consistent.

**The Potential Inefficiency of the Median Voter Outcome**

The median voter outcome from majority voting is very convenient. Taken literally, 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. The government need not know anything about the preferences of the many voters on either side of the median: all the government has to do is find the median voter and then implement that voter’s preferences. While this
median voter outcome is convenient, however, it might not be socially efficient. Social efficiency requires that the social marginal benefits of a public project equal its social marginal costs. This may not be true with median voter outcomes because such outcomes do not reflect intensity of preferences.

Recall that the social marginal benefits of a public good are the sum of the private marginal benefits that each individual derives from that good. If a small number of individuals derive enormous benefits from the public good, then they should be accounted for in computing total social marginal benefits. This will not necessarily be the case with the median voter, however, because the outcome is determined only by the ranking of voters and not by the intensity of their preferences.8

Imagine, for example, that your hometown is considering building a monument to you to recognize your wonderful successes in life. There are 1,001 voters in your town. The monument will cost $40,040, which will be financed by a $40 tax on each voter. The town takes a vote on whether this monument should be built or not. Everyone in town has single-peaked preferences so that the median voter will determine the outcome.

Five hundred of the voters in your town recognize your enormous contributions to society and are willing to pay up to $100 each to support a monument; 501 of the voters are ignorant of your contributions and are not willing to pay anything to support the monument. The social marginal benefit is therefore $500 \times 100 + 501 \times 0 = $50,000. The social marginal cost is $40,040. So the socially efficient outcome is for this monument to be built. Yet a proposal to build the monument, financed by a tax of $40 on each citizen, would lose by a vote of 501–500. Since the median voter doesn’t want the monument at that price, it does not get built.

This socially inefficient outcome arises because the median voter outcome does not reflect intensity of preferences. That many voters were willing to pay much more than $40 to support the monument is irrelevant; all that matters is that the pivotal median voter was not willing to pay $40. Whether this inefficiency is likely depends on whether there are particularly intense preferences on one side or another of a vote on a given issue.

**Summary**

Many decisions in direct democracies are made by majority voting. In this section, we have discussed the situations under which majority voting may or may not serve to consistently aggregate the preferences of individual voters. If preferences are single-peaked, majority voting will consistently aggregate preferences, with the outcome chosen being that preferred by the median voter. This outcome, while convenient, may not be efficient.

---

8 Technically, what matters for efficiency is the mean of valuations of a public good. If there is equal intensity of preferences on both sides of the median (if the distribution of preferences is symmetric), then the mean and median will be the same, and the median voter outcome will be efficient. If, however, one side is more intense than the other, then the mean will differ from the median, and the median voter outcome will be inefficient.
Representative Democracy

In reality, people in most developed nations don’t vote directly on public goods. Rather, they elect representatives who are supposed to aggregate the public’s preferences and take them into account when they vote on the appropriate level of spending on public goods. To understand outcomes in a representative democracy such as the United States, we therefore need a theory that explains how politicians behave. The most common theory that has been used in public finance is a version of the median voter theory that we discussed for direct democracy: politicians will choose the outcome that is preferred by the median voter. In this section, we review the median voter theory for representative democracies, discussing the assumptions underlying it and presenting the empirical evidence for and against it.

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. If this is true, then elected politicians will choose the outcome preferred by the median voter (as long as preferences are single-peaked). That is, with vote-maximizing politicians, the theory we used to explain direct democracy can be applied to representative democracy as well.

This point was illustrated by Downs (1957). With single-peaked preferences, we can model voters as being distributed along a line as in Figure 9.3. This line shows desired levels of defense spending as a percentage of the government budget, ranging from 0% on the left to 50% on the right. Suppose voters are spaced evenly throughout this line so that the median voter would like the government to spend 25% of its budget on defense. Finally, suppose voters vote for the candidate who most closely represents their views on this issue, the candidate who is closest to the voter along this line.

Suppose now that two politicians, Barack and John, are running for office and vying to maximize their votes. Barack wants to appeal to those who don’t want to spend much on defense, so he places himself initially at point $B_1$; John wants to appeal to those who want to spend a lot on defense, so he places himself initially at point $J_1$. In this case, the candidates will split the vote, because they have equal shares of voters near them on the line, as shown in panel (a) of Figure 9.3.

What if Barack shifts his position to $B_2$, where he advocates for somewhat larger defense? In that case, Barack would get more votes (panel (b) of Figure 9.3). He would continue to capture all those who want a small defense and would capture some of those who want a larger defense since he is closer to their preferences than is John.

What should John do in response to Barack’s change in position? He should shift his position to $J_2$ (panel (c) of Figure 9.3), where he now favors a smaller defense than he did previously. After this move, John would get
the majority of votes, leaving Barack stuck with the now minority that favors a small defense. If these politicians are purely vote-maximizing, this jockeying back and forth will continue until both candidates support the position held by the median voter (25% of budget on defense; panel (d) of Figure 9.3). If either candidate advocates more or less spending on defense than the median amount, he will reduce his number of votes, so there is no incentive for a candidate ever to deviate from the median.

In this context, as with direct democracy, the median voter model is a powerful tool. Politicians and political analysts need not know the entire distribution of preferences to predict vote outcomes in this model. All they need to understand is the preferences of the median voter.

**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. In this section, we review these assumptions and discuss why they may be violated, leading politicians to move away from the position of the median voter.

**Single-dimensional Voting** First, 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 be located 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. For example, if the median voter on most issues happens to advocate a lot of spending on defense, then politicians may position themselves toward high spending on defense to attract that median voter on all the other issues.
At the same time, if voter preferences on different issues are highly correlated, voting may end up close to single-dimensional. That is, if all voters who want small defense spending also want more spending on education, more spending on health care, and greater benefits for the unemployed, and all voters who want large defense spending also want less spending on education, less spending on health care, and fewer benefits for the unemployed, then voting may in effect be single-dimensional even with multiple issues.

**Only Two Candidates** Second, 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. If all three candidates are at the median, then moving slightly to the left or right will increase the votes of any one candidate (since she will get all of one end of the spectrum), while the other two candidates split the other end. 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. There is never a set of positions along the line where one of the politicians can’t increase his or her votes by moving.

In many nations, the possibility of three or more valid candidates for office is a real one. In the United States, there are typically only two candidates, Republican and Democrat, with important exceptions, such as the 1992 presidential election when independent Ross Perot took 19% of the popular vote.

**No Ideology or Influence** Third, the median voter theory assumes that politicians care only about maximizing votes. In practice, politicians may actually care about their positions and not simply try to maximize their votes. Moreover, in practice, politicians with ideological convictions may be able to shift the views of voters toward their preferred position. Ideological convictions could lead politicians to position themselves away from the center of the spectrum and the median voter.

**No Selective Voting** Fourth, 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. In presidential election years, only about half the citizens vote, and in non-presidential elections, participation is even worse: only about one-third vote. Even if the views of citizens on a particular topic are evenly distributed, it may be the most ideologically oriented citizens who do the voting. In that case, it could be optimal for a politician to appeal to likely voters by taking a position to the right or left of center, even if this position is not what is preferred by the majority of citizens (including both voters and nonvoters).

**No Money** Fifth, the median voter theory ignores the role of money as a tool of influence in elections. Votes are the outcome of a political process, but there are many inputs into that process. One key input is resources to finance reelection campaigns, advertisements, campaign trips, and other means of maximizing votes. Running for office in the United States has become increasingly

---

9 U.S. Bureau of the Census (2006a), Table 408.
expensive.\footnote{Statistics from the Center for Responsive Politics’ Web site at http://www.opensecrets.org/bigpicture/stats.asp.} From 1990 to 2008, the cost of winning a seat in the House of Representatives more than doubled, from $550,000 to $1.25 million, while the cost of winning a seat in the Senate also more than doubled, rising from $4.3 million to $8.8 million. The cost of a campaign for President has grown even more rapidly. Senator Barack Obama spent $730 million to win the Presidential election of 2008—more than twice the amount that Bush had spent four years earlier. Therefore, if taking an extreme position on a given topic maximizes fund-raising, 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.

**Full Information** Finally, 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. Many of the issues on which our elected representatives must vote are highly complicated and not well understood by the majority of their constituents—and often not by the representatives themselves. Democratic senator Robert Byrd was once asked if he knew what was in a 4,000-page $520 billion omnibus spending bill passed by the House of Representatives. “Do I know what’s in this bill?” he replied. “Are you kidding? Only God knows what’s in this conference report!”\footnote{McDonald (1998).} Moreover, even when voters understand an issue, it is difficult for politicians to gain a complete understanding of the distribution of voter preferences on the issue.

**Lobbying** These problems of information and the advantages of money make it likely that elected representatives will be *lobbied* by highly interested and informed subgroups of the population. **Lobbying** is the expending of resources by certain individuals or groups in an attempt to influence a politician.\footnote{This term became popular after special interest groups discovered that President Ulysses Grant spent his afternoons drinking in the lobby of the Willard Hotel in Washington, D.C., and was thus easier to extract concessions from later in the day!} Politicians find it in their interest to listen to lobbies for two reasons. First, these groups can provide relevant information about an issue to an uninformed politician: when particular subgroups have a strong interest in a complicated issue, they also typically have a thorough and deep understanding of the issue. Second, these groups will reward politicians who support their views by contributing to the politicians’ campaigns and getting group members to vote for the politicians, which can help the politicians’ overall vote maximization.

In principle, lobbying can serve two useful roles: providing information and representing intensity of preferences. Indeed, given the potential inefficiency of the median voter outcome, some amount of lobbying is probably optimal. The problem that arises with lobbying is that when there is an issue that particularly
benefits a small group and imposes only small costs on a larger (perhaps even majority) group, lobbying can lead politicians to support socially inefficient positions. Suppose, for example, there is a project where 100 U.S. citizens benefit by $1 million each, but the remaining 259,999,999 citizens lose by $100 each. Clearly, this project has negative overall social benefits (since $100 \times 259,999,999 < 100 \times 1,000,000$). If the interested group lobbies politicians, however, promising votes and campaign contributions, and if the remainder of the citizenry is not informed about the issue and so will not vote on it, the project could be accepted by self-interested politicians.

The key point to recognize here is that large groups with a small individual interest on an issue suffer from a free rider problem in trying to organize politically; it is in no individual’s interest to take the time to lobby policy makers over the lost $100. Small groups with large individual interest, however, may be able to overcome this problem, leading to a socially inefficient outcome. An excellent example of this result is farm subsidies, as discussed in the following application.

**APPLICATION**

**Farm Policy in the United States**

In 1900, 35% of workers in the United States were employed on farms. By the year 2002, this share had fallen to 2.5%, due both to increased farm efficiency and to imports of agricultural products. Yet this small sector receives $25.5 billion in direct support from the federal government each year. This support take two forms: direct subsidy payments to farmers of about $12.5 billion per year, and price supports, guaranteed minimum prices for crops, which cost about $13 billion per year. These price supports also raise the average price of food products for American consumers and cost $16 billion a year in higher prices. Together, these subsidies cost each American household about $390 per year on average, and the average recipient of the direct subsidies receives $19,600 annually, which is larger than the amount paid to most individuals that receive payments from the social insurance programs we discuss in Chapters 12–17.

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. Indeed, vying for the Democratic presidential nomination in 2003, House Minority Leader Dick Gephardt delivered a speech at an Iowa farm lamenting the fact that “With each passing year, we lose more and more family farms to corporate agriculture.” And when President Bush signed into law a 2002 farm bill estimated to cost $190 billion over the following decade, he declared that the bill “will promote farmer independence and preserve the farm way of life for generations.”

---

The only problem with this justification is that it is completely at odds with the facts. Only 8 of the roughly 400 crops grown in the United States are eligible for subsidies, and the amount of subsidy increases with the amount of crop produced, so larger farms benefit more from the subsidies than do small farms. As a result, two-thirds of all subsidies now accrue to 8% of recipients, most of whom earn over $250,000 a year. The recipients include a number of Fortune 500 firms as well as almost 9,070 farms and businesses that received over $1 million in subsidies from 1995 to 2004.\footnote{Data from the Farm Subsidy Database provided by the Environmental Working Group, at http://ewg.org/farm.}

If farm subsidies are so expensive and their distribution is so at odds with their stated goals, how does this program survive? The answer is that the $390 total cost per year to the typical American family of farm subsidies is dwarfed by the enormous gain of $19,600 to the typical farm from farm subsidies. These farms are able to effectively organize and lobby for the maintenance of the subsidy and price support programs, and the larger group of taxpayers hurt by these programs are not. Recognizing this imbalance, Senator Richard Lugar of Indiana, the Agriculture Committee’s ranking Republican, refused to attend President Bush’s signing of the 2002 farm bill, calling it “a recipe for a great deal of hurt and sadness, and at the expense of a huge transfer payment from a majority of Americans to a very few.” Furthermore, candidates in presidential primaries have their first trials in Iowa, the leading recipient of farm subsidies, so opposition to farm subsidies can be quite perilous to a presidential candidate.

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. The average European cow, for example, is supported by $2 a day of government spending. Japan spends over $54 billion on its farmers, protecting them with measures like rice tariffs of nearly 500%.\footnote{Tariffs are taxes levied only on imported goods.} In total, the OECD estimates that the developed world spends $225 billion annually directly supporting farmers, with $142 billion coming from tariffs and export subsidies and $83 billion from direct payments to farmers.

But the case of New Zealand shows that reform of farm subsidies is not impossible—and may not even be ultimately harmful to the farm sector. As is the case with the United States and other developed nations, New Zealand had a sizeable patchwork of subsidy programs for farming until the mid-1980s. These programs ranged from price supports and low-interest loans to subsidies to purchase fertilizer. Some experts concluded that these subsidies led to the oversupply of agricultural products and falling commodity prices, as well as byzantine policy contradictions. For example, farmers were being paid to install conservation measures such as hedgerows and wetlands after having been paid to rip them out a generation earlier; of course, other farmers who had maintained such landscape and wildlife features all along got nothing.

New Zealand weaned its economy off these large agricultural subsidies beginning in the mid-1980s. There were initially some dislocations as subsidies ended: About 1% of farms shut down and sheep farmers (the most heavily...
subsidized group) saw particularly sizeable reductions in their incomes. But after a transition period that lasted roughly six years, land prices, commodity prices, and farm profitability stabilized. Today, New Zealand has about the same percentage of people employed in agriculture, and about the same number of people in New Zealand live in rural areas as lived there when farming was subsidized.16

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. Consider, for example, a Democratic politician who has personally liberal views but who represents a very conservative congressional district in the South. The Median Voter Theorem would predict that this politician would have a very conservative voting record to maximize his votes in the district, but other factors such as party or individual ideology could lead to a more liberal voting record.

Studies of this nature have provided mixed conclusions, as reviewed in the Empirical Evidence box. On the one hand, the preferences of the median voter clearly matter: where the median voter is more conservative, politicians vote more conservatively. The median voter model is therefore a sensible starting point for modeling politician behavior. On the other hand, the preferences of the median voter do not completely explain legislator voting behavior. There is strong evidence that legislators consider their own ideology when they vote on policies and seem not only to cater to the median voter in their district or state but also to pay particular attention to the position of their own “core constituency” (the minority of voters who particularly agree with the beliefs of the politician, such as the minority of liberal Democrats who strongly support a Democratic senator in a Republican state).

A particularly interesting example of politicians responding to their voters arose in 2007. In an effort to fight the earmarks discussed in the introduction to this chapter, the Democratic leaders of the House of Representatives added new rules to make earmarks more transparent and to clearly associate each earmark with its sponsor. The hope may have been to shame representatives into lowering their demand for earmarks, but the effect was exactly the opposite. As the *New York Times* wrote, “Far from causing embarrassment, the new transparency has raised the value of earmarks as a measure of members’ clout. Indeed, lawmakers have often competed to have their names attached to individual earmarks and rushed to put out press releases claiming credit for the money they bring home.” Earmark growth continued, with proposed projects such as $2.6 million for a new grape genetics research center at Cornell University, in

As noted, empirical evidence on the median voter model is mixed. Some studies find strong support for the model. For example, Stratmann (2000) studied the effects of redistricting on the voting patterns of affected legislators. Every ten years when census data become available, congressional districts are reshaped to reflect population movements over the past decade. Such redistricting can change the nature of a district’s median voter. Stratmann compared the preferences of the new, redistricted constituency with the old by comparing differences in the patterns of voting for presidents across redistricted districts. He asked: When districts became more conservative through redistricting (as measured by voting more often for the Republican presidential candidate in 1988 and 1992) but were represented by the same politician, did the politician start to vote more conservatively? The answer is yes, confirming that median voter preferences matter to legislators.

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. Leveaux and Garand (2003) explored how voting behavior of incumbent House Republicans and Democrats changed in response to changes in the racial composition of their districts brought on by 1992 redistricting. African-American voters are typically a major component of Democratic constituencies and not of Republican ones. When the African-American population in a district increases due to redistricting, therefore, the median voter model would predict that politicians of all stripes should start voting more like Democrats: all that should matter is total number of votes, and if African Americans have more Democratic preferences, then Republicans and Democrats should both shift their positions equally to respond. These authors found, however, that the voting patterns of African-American legislators responded strongly to changes in the African-American population in their districts, while Republican voting patterns responded only modestly. The median voter model is clearly only part of the story.

A particularly striking test is to compare two senators from the same state but from different political parties. Since senator is a statewide office, both elected officials are appealing to the same set of voters. Thus, the median voter model would predict that they would take the same position on legislation. In fact, this is not at all true. As Levitt (1996) showed, when a state has one senator from each party, the senators vote very differently; in fact, they vote very similarly to senators from other states who are in their party. Levitt concluded that legislators care roughly equally about the median voter, voters in their own core constituencies, and the party line, but that added together these factors can explain only about 40% of voting patterns. The remainder of the voting patterns is explained by individual ideological differences.

Direct evidence that ideology matters was also shown in a recent paper by Washington (2008). She compares legislators who have daughters to those with the same family size who have sons. Since a child’s gender is random, two legislators with families of the same size, one of which has more daughters than the other, should form natural treatments and controls for assessing whether individual ideological factors matter for legislator behavior (they should be otherwise the same except for the sex mix of their children). She finds that as a larger share of a legislator’s children are daughters, the legislator is more likely to vote in favor of women’s issues such as reproductive rights (such as by opposing laws that restrict teen access to abortion) or women’s safety (such as by supporting laws that increase the punishment for violence against women). 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.

New York State’s wine-producing Finger Lakes region. Defending her own earmark request for $100,000 for a prison museum near Fort Leavenworth, Kansas, Representative Nancy Boyda said, “Democracy is a contact sport, and I’m not going to be shy about asking for money for my community.”

---

17 Levitt’s work builds on a large literature in political science that provides related evidence that ideology is an important determinant of politician positioning; see in particular Kalt and Zupan (1984) and Coates and Munger (1995).

The policy analysis in most of this book assumes a benign government intent on maximizing social welfare. Similarly, in this chapter we have discussed the assumption that in both direct democracy and representative democracy, politicians will ultimately strive to represent the will of the people. Starting in the 1950s, however, a school of thought known as public choice theory began to question this assumption. Begun by James Buchanan and Gordon Tullock (the former of whom won the 1986 Nobel Prize), public choice theorists noted that governments often do not behave in an ideal manner, so that the traditional assumption of benevolent social-welfare-maximizing government may not be appropriate. In this section, we review some of the important sources of government failure, the inability or unwillingness of the government to act primarily in the interest of its citizens.

Size-Maximizing Bureaucracy

Some of the earliest critiques of idealist conceptions of government began with the idea that bureaucracies, organizations of civil servants in charge of carrying out the services of government (such as the U.S. Department of Education or a town's Department of Public Works), might be more interested in their own preservation and growth than in carrying out their assigned missions efficiently. In 1971, William Niskanen developed the 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. For example, a town's Department of Public Works might be charged with collecting trash, maintaining the sewers, and so on. This bureaucracy is part of the larger town government, and the politicians running the larger government will decide on the bureaucrat's power and pay.

Niskanen notes that while the private sector rewards its employees for efficient production, a bureaucrat's salary is typically unrelated to efficiency. In Niskanen's model, a bureaucrat's compensation (wages, benefits, status, quality of support staff, and so on) is based on the total measurable output of his bureaucracy. For example, the compensation of the director of the Department of Public Works rises as that department fixes more problems in the town. The goal of the bureaucrat is therefore to maximize the size of the agency he controls, and thus maximize its budget, not to choose the level of service that maximizes efficiency. Even if the larger town government knows that the bureaucrat is pursuing a self-interested, inefficient goal, it is hard to enforce efficient production in the agency because the bureaucrat knows much more than the town government knows about the true cost of the service he is providing.

19 For an early text on public choice theory, see Buchanan and Tullock (1962).

20 A number of subsequent studies have criticized Niskanen's model as unrealistically assuming an uninformed and perhaps even unintelligent legislature. Miller and Moe (1983), for example, argued that large bureaucracies would arise only through failings of legislative oversight.
Private vs. Public 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. Mueller (2003) lists 71 studies that compared the performance of state-owned public companies to private companies: in only 5 of these studies did state-owned companies outperform their private counterparts in terms of efficiency; 56 studies found that the private companies were more efficient, and in 10 studies the performance was similar. Majumdar (1998), for example, studied Indian industrial companies and rated their efficiency. Majumdar used 1.0 to indicate a perfectly efficient company, and he found that state-owned companies scored about 0.65, mixed ownership (partly private/partly public ownership) companies scored 0.91, and privately owned companies averaged 0.975.

Correspondingly, a large literature finds that when state-owned companies are privatized—that is, sold to private (presumably) profit-maximizing owners—efficiency improves dramatically, and a smaller company is required to produce the same level of output.21 Several studies have investigated the sources of the efficiency gain from privatization, and they conclude that the productivity increase from installing new, profit-oriented management in place of government-appointed bureaucrats is the source of most of the gains in efficiency. Indeed, in privatized firms that retain their government managers, productivity gains are not nearly as large as when new managers are brought in.

Problems with Privatization

The strong presumption of the benefits of privatization implied by the Niskanen model, however, is subject to two limitations. First, some markets may be natural monopolies, markets in which, because of the nature of the good, there is a cost advantage to have only one firm provide the good to all consumers in a market. Examples of such markets are those for utilities such as water, gas, or electricity. The provision of natural monopoly goods requires sufficient scale or size of the producer: it is not efficient for, say, five or six water companies to lay the pipes for water delivery all over town. The high level of the fixed costs associated with the provision of natural monopoly goods leads to economies of scale, whereby the average cost of production falls as the quantity of the output increases. Thus, in natural monopoly markets, only one firm will exist in the private market equilibrium.

As a result, in natural monopoly markets, private provision will not be associated with competitive pressure; privatization in such markets can therefore lead to higher costs to consumers than does government provision. Evidence on this point comes from Kemper and Quigley (1976), who used data from municipalities in Connecticut to compare public and private refuse collection. They showed that private collection was much more expensive than direct

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.

21 A review of these studies is provided in Megginson and Netter (2001).
public collection because the private vendors exploited their natural monopoly power to charge very high prices.

In natural monopoly markets, therefore, pure privatization may end up costing consumers more than a middle ground option of contracting out, an approach through which the government retains responsibility for providing the good or service, but hires private sector firms to actually provide the good or service. Governments can harness the forces of competition in this context through competitive bidding, asking a number of private firms to submit bids for the right to perform the service or provide the good. In principle, the government then grants the right to provide the good or service to the private entity that can provide the good most efficiently. When the government contracts out, it exploits its own monopoly power for good, not evil, by finding the most efficient provider and delivering the savings to the taxpayer. Indeed, Kemper and Quigley found that contracting out refuse collection was the most efficient option of all.

In practice, however, the bidding in contracting out is often far from competitive. In many situations, government bureaucrats may exploit their power and award contracts not to the most efficient lowest-cost bidder, but to the one that assists them in maximizing their own bureaucratic power (or, in the case of kickbacks and bribes, personal wealth). The application shows some examples of the problems with contracting out. If these problems are severe, then pure government or pure monopoly private provision may be more efficient than contracting out. Thus, whether contracting out is best depends on the nature of the contract.

In addition, while privatization of goods markets may increase efficiency, it is not clear that private provision of social services, such as health insurance, cash welfare, or public safety, is more efficient than public provision. As we highlight in Chapters 12–17, markets for social services often involve market failures that impede efficient private provision, such as the externalities of health insurance noted in the opening chapter.\(^\text{22}\) One example of the problems of privatizing social services was provided by Hart, Shleifer, and Vishny (1997), who compared private to public prisons. They found that private prisons are roughly 10% cheaper per prisoner, but that those savings are achieved by paying lower wages to prison guards. The low pay led to staffing with lower-quality guards, resulting in higher instances of violence (and in one case a major riot). Thus lowered costs were achieved at the demonstrable expense of quality.

**APPLICATION**

**Contracting Out with Non-Competitive Bidding**

In principle, contracting out may be the best way for the government to arrange for the provision of public services. Contracting out is much more likely to deliver efficiency gains, however, if potential contractors compete to

---

\(^{22}\) Blank (2000) also reviews the arguments for and against private provision of social services.
deliver cost savings or quality gains to the government. In practice, however, such competitive bidding can be the exception rather than the rule, as shown by the following examples.

In the late 1990s, Science Applications International Corporation (SAIC), one of the government’s largest contractors, 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. Charges were first brought forth by a whistleblower, a former project manager for the company, and they accused SAIC of having encouraged its managers to list higher-paid employee categories on job descriptions but use lower-paid employees to do the actual work; describing to the Air Force a pattern of expenses that would result in a profit of 10% even while internal documents indicated that the “actual profitability” would be 23%; and failing to disclose to the Air Force knowledge that the effective profit had continued to rise several months into the one-year contract.\(^\text{23}\)

Since the early 2000s, Wackenhut Corporation has been the primary security contractor at weapons plants across the United States. In January 2004, the inspector general of the Energy Department revealed that in running drills to test security at weapons plants, Wackenhut attackers had told Wackenhut defenders which buildings and targets were to be attacked, in addition to whether any diversionary tactic would be used. Consequently the defense teams were found to have performed remarkably well in these drills but, as the inspector general reported, the results were “tainted and unreliable.” Nonetheless, in August 2004, the Nuclear Energy Institute announced that it would be hiring Wackenhut, who at the time was already responsible for security at over half of the country’s civilian reactors, to train and manage “adversary teams” to attack these reactors in drills. Representative Edward J. Markey of Massachusetts protested that allowing Wackenhut to test security at plants where it was the security contractor was akin to allowing athletes to conduct their own drug tests.\(^\text{24}\)

In 2003 and 2004, DHB Industries was awarded contracts worth hundreds of millions of dollars to supply body armor to troops in Iraq. DHB, however, already had a shaky history with regard to product quality: in 2002, the New York Police Department returned 6,400 vests to DHB for replacement after state government tests showed that some of the vests were defective, and in 2003, a confrontation with the union representing DHB’s employees in Florida led to workers accusing the company of sloppy quality control. DHB was still awarded the contract, but in 2005 the Marine Corps Times reported that the Marines had acquired the vests despite warnings from the Army that the vests had “critical, life-threatening flaws.” In the end, 23,000 DHB vests were recalled from the field.\(^\text{25}\)

\(^{23}\) Eckholm (2005).
\(^{24}\) Wald (2004a,b).
In the weeks following Hurricane Katrina in the fall of 2005, 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. Richard L. Skinner, the inspector general for the Department of Homeland Security, complained that bills were coming in for deals that were apparently clinched with a handshake without any documentation to back them up.

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. Ashbritt is a client of the former lobbying firm of Governor Haley Barbour of Mississippi. According to its contract, Ashbritt was to be paid $15 per cubic yard to collect and process debris and was also to be reimbursed for costs if it had to dispose of materials in landfills. However, three communities in Mississippi that refused Ashbritt’s offer and found their own contractors had negotiated contracts of as low as $10.64 per cubic yard, which included disposal, in addition to collection and processing. Due to these concerns, the Army Corps of Engineers threatened to terminate Ashbritt’s contract, but did not follow through with their threat.

**Leviathan Theory**

Niskanen’s theory assumes that individual bureaucrats try to maximize the size of their own agencies and that a larger government tries to rein them in. In contrast, Brennan and Buchanan (1980) see these two entities as one monopolist (which they call “Leviathan”) that simply tries to maximize the size of the public sector by taking advantage of the electorate’s ignorance. 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. In Chapter 4, we discussed rules for limiting the size of the government budget. Likewise, a number of U.S. states have passed laws limiting the ability of local communities to raise property taxes (taxes imposed on the value of homes and businesses and the land they are built on), as discussed in more detail in the next chapter. There is no reason to have these types of “roadblocks” if a benevolent government is maximizing social welfare, but with a Leviathan government they may be a means of putting a brake on inefficient government growth.

Another way to combat the Leviathan tendencies of government is to ensure that politicians face electoral pressure to deliver public services efficiently, as suggested by a recent study by Besley, Persson, and Sturm (2005). These authors studied the impact of the increased “political competition” in the southern United States during the twentieth century due to the enfranchisement of blacks.

---

26 Lipton and Nixon (2005).
and other groups. They measure political competition as the extent to which voters choose a fairly balanced slate of candidates in local elections, as opposed to always voting for one party or another. They find that areas with more political competition had much faster economic growth (25% higher growth in the long run), partly because of lower taxes and higher quality jobs.

Corruption

The theory of size-maximizing bureaucrats and Leviathan governments describes how governments will take action to maximize their size and power in carrying out their legitimate functions. Even more problematic is corruption, the abuse of power by government officials seeking to maximize their own personal wealth or that of their associates. As the following policy application illustrates, corruption is an international phenomenon.

**APPLICATION**

**Government Corruption**

Corruption can take many forms, but the common theme is government officials using their power to enrich themselves or their associates. Two recent examples from different areas of the world:

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. The scandal unfolded only because of an unfortunate accident in which six children were killed when the minivan their parents were driving burst into flames after running over a piece of metal that had fallen off a truck in front of them. The deaths sparked Operation Safe Road, an investigation that revealed that the truck driver (as well as many other truck drivers) had bribed officials at the office of then–Secretary of State Ryan to obtain a driver’s license. In total, at least 20 people had died in accidents involving drivers who had bribed officials for their licenses. The investigation resulted in 70 indictments with over 60 convictions, many of whom were close friends and allies of Ryan who had kicked some of the bribe money into his campaign funds. Ryan was indicted for, among other things, accepting at least $167,000 from friend and businessman Larry Warner, who benefited in the millions from state contracts signed under Ryan’s oversight. The federal prosecutors also charged Ryan with signing leases with Warner and another real estate developer for office space, in exchange for staying in their California and Jamaica homes for free (though Ryan arranged scam payments to make it appear that he had paid for the privilege). In exchange for other help from Ryan,
political allies allegedly invested $6,000 in his son’s cigar store, lent $145,000 to a company founded by his brother, and paid in part for a trip to Disney World for the family of one of his children. Ryan was eventually found guilty on all charges in his 2005 trial. In August, 2006, he was sentenced to 6\frac{1}{2} years in prison.\textsuperscript{28}

In 2002, Ryan was replaced in office by Governor Rod Blagojevich, who campaigned for the office as a reformer who would clean up the corrupt state government. Blagojevich said, “The Ryan administration ended their days in office by using the power at their discretion to put friends and associates in high-paying jobs. I intend to use every power I have and my discretion as governor to eliminate unqualified, unnecessary, and overpaid individuals wherever I find them in state government.”\textsuperscript{29} In fact, however, the corruption continued, and on December 9, 2008, Rod Blagojevich and his chief of staff, John Harris, were arrested on federal corruption charges. According to the press release by the U.S. Department of Justice, the two conspired to sell Barack Obama’s U.S. Senate seat (which was vacant after Obama’s election to the Presidency) to the highest bidder.\textsuperscript{30} Furthermore, Blagojevich threatened to withhold state assistance to the Tribune Company in their sale of the Chicago Cubs unless the newspaper fired members of its editorial board who were critical of him. On January 29, 2009, the Illinois senate voted unanimously to remove him from office and disqualify him from holding future public office in Illinois.\textsuperscript{31}

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. Menem himself traveled on a private jet with his own hairdresser, both paid for by the state, and privatized a number of industries while ensuring that bidding was rigged and that he and his colleagues received lucrative kickbacks. To be sure that his corrupt schemes would run smoothly, Menem not only involved other legislators in his corruption but stacked the courts with appointees who would always decide the law in his favor. In 1994 he had the constitution amended to allow him a second term in office, and he tried but failed to amend it again for a third term. Argentines suffered directly from the corruption. The average Argentine was, for example, unable to get a mortgage, both because the government was borrowing all available surplus funds to feed its habits and because, in such a lawless environment, banks could not trust their customers to repay the loans.

In 2001, Swiss authorities froze $10 million in Menem’s various bank accounts, and Argentines were surprised only that he had stolen so little money from them. By 2001, Argentines had so little faith in their elected

\textsuperscript{28} More information about the George Ryan trial can be found at http://chicagotribune.com/politics.


officials that when four presidents resigned within a two-week period, the popular joke was: “Five more presidents, five more millionaires.” Even so, Menem ran again in 2003, but he withdrew from a vote he was certain to lose to his opponent, Nestor Kirchner. President Kirchner has since enjoyed approval ratings around 70% in part for firing a number of corrupt and useless officials within weeks of taking office.\footnote{Leight (2006).}

Why does corruption exist? Some public choice theorists might agree with Lord Acton’s famous observation: “Power tends to corrupt and absolute power corrupts absolutely.” In this view, a government’s monopoly power over some spheres of its citizens’ lives is sufficient to explain corruption. Why shouldn’t the clerk at your local Department of Motor Vehicles ask for $10 to speed up your application for a driver’s license? Doesn’t he have complete power over who gets and who does not get a license? Ultimately, of course, he is unlikely to ask for a bribe, in part because rampant corruption in the DMV might motivate voters to elect a politician who vows to clean up that particular department.

This view suggests that the only thing keeping corruption in check is electoral accountability, the ability of voters to throw out corrupt regimes. The notion that electoral accountability is a primary deterrent of corruption is supported by the evidence in Persson and Tabellini (2000). They measured the extent of government corruption using surveys of business leaders, the most direct victims of such corruption. They compared systems of government in which voters choose individual candidates, such as the United States, to systems of proportional voting where voters choose a party slate of candidates, such as the United Kingdom. They reasoned that in the latter type of system, individual politicians are less accountable to the electorate since the voter votes only for the party and not for the individual. Indeed, they found that corruption is much more prevalent in systems with proportional voting.

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. Djankov et al. (2002) examined data from 85 countries that pertain to the procedure a citizen must go through to start a business. The procedures varied widely, taking as few as 2 days in Canada and Australia to as many as 152 days in Madagascar before the business may begin. The costs of these bureaucratic procedures ranged from less than 0.5% of per capita GDP in the United States to over 460% of per capita GDP in the Dominican Republic. This study found that countries where entrepreneurs must go through large numbers of bureaucratic procedures to start a business tend to have higher levels of corruption.

Another key determinant of corruption appears to be the wages of government bureaucrats. Paying bureaucrats higher wages makes them less willing to risk losing their jobs by being caught in a corrupt act and thus lowers rates of corruption. Goel and Nelson (1998) used convictions for public abuse of office to measure the corruption of state-level government employees in the United States, and they found that higher wages led to a lower level of government corruption.
There are several recent studies that suggest that poor government structure can have long-lasting negative impacts on economic growth. One such study is Mauro (1995), which used data collected by a private firm whose agents in various countries rated the quality of government along various dimensions such as the amount of red tape involved in government procedures and the amount of corruption. Mauro found that nations with higher levels of corruption and red tape have slower growth rates and that these effects are large: if the most bureaucratically inefficient nation in his sample (Zaire) improved its efficiency to the level of the least inefficient nations (Switzerland, New Zealand, the Netherlands, or Singapore), his model predicts that Zaire’s growth rate would be 4.9% per year higher!

The difficulty with studies such as Mauro’s, however, 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. Suppose, for example, that the efficiency of a bureaucracy rises as the wages of government workers rise. Then slow-growing low-income nations who cannot pay their government workers well will have poorly functioning governments. In this case, slow economic growth may cause government failure, not vice versa.

A recent attempt to surmount this problem using a historical perspective was taken by Acemoglu, Johnson, and Robinson (2001). They denoted two sets of nations that were quite similar when they were colonized by the same set of European powers and therefore could be considered comparable treatments and controls, but for which colonization took very different forms. The treatment nations in the Caribbean, Central America, and Africa were governed from afar: their European colonizers focused solely on extracting from these countries as many natural resources (such as diamond, silver, and copper) as possible. The colonizers were not interested in setting up institutions in these nations to foster economic success (such as effective property rights or bureaucratic institutions). The control nations in North and South America, and Australia and New Zealand, were governed from within: the European colonizers moved to these nations in large numbers and set up institutions to foster economic success.

The reason for the lack of hands-on governing in the treatment nations was simple: the odds of colonists dying from infectious diseases such as malaria was much higher in these nations than in the control nations. In the nations of the Caribbean, Central America, and Africa, while native people were immune to local disease, settlers were not. So these nations were governed from afar with little long-term interest in settlement. In nations in North and South America, and in Australia and New Zealand, settlers were less likely to suffer from local infectious diseases, so they settled there in large numbers. In doing so, they set up institutions that would foster their success. The reason for this difference should not be otherwise associated with economic success, since native people were immune to disease; these two sets of nations were comparable other than through the type of colonization.

Despite their precolonization similarity, these sets of nations have performed very differently in the postcolonial era. The treatment nations in the Caribbean, Central America, and Africa have grown much more slowly postcolonization than have the control nations in North and South America and Australia and New Zealand. These treatment nations appear to suffer from the long-run detrimental effects of inefficient government institutions. For example, the authors compute that if the quality of Nigeria’s government institutions could be improved to the level of Chile’s, Nigeria would see a sevenfold increase in per capita income.

Acemoglu (2003) made a similar “historical accident” argument with relation to North and South Korea, two halves of a region that had been a single region (Korea) under Japanese control until the end of World War II. There were no inherent differences between the northern and southern regions of Korea until World War II: they were culturally and economically very similar. After World War II, however, the Soviet Union occupied the northern half of Korea, which became a communist nation, and the United States occupied the southern half, which adopted a capitalist system. The results of this division of the nation into two different systems have been dramatic. Maddison (2001) showed that the two countries had similar income levels in 1950 of $770 per capita, and North Korea was actually more heavily industrialized than the south. Fifty years later, North Korea had per capita income of only $1,200, compared to South Korea’s $12,200.
The Implications of Government Failure

There is clear evidence that governments fail in some instances to benevolently serve the interests of their citizens. 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, as reviewed in the empirical evidence discussion.

2.5 Conclusion

In most of this book and in most of public finance, 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, however, the government is a collection of individuals who have the difficult task of aggregating the preferences of a large set of citizens. Will governments operate to pursue policies in the ways suggested by the economic analyses presented in other chapters of this book?

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. In particular, there are clear examples of government’s failure to maximize the well-being of its citizens, with potentially disastrous implications for economic outcomes. 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.

In theory, a government can efficiently finance public goods by simply asking individuals to pay their valuation of the good (Lindahl pricing).

In practice, such a solution faces the problems of preference revelation (individuals not honestly reporting their preferences), preference knowledge (individuals not knowing their preferences), and preference aggregation (the government being unable to collect data on each individual’s preferences).

One way to aggregate preferences is through direct democracy, where votes are directly cast on particular issues. This voting mechanism will consistently aggregate preferences only if preferences are restricted to a particular form (single-peaked preferences).

If preferences are single-peaked, the option chosen will be the one preferred by the median voter. This will not be the efficient outcome, however, if voters on one side or another of an issue have particularly intense preferences.

Representative democracies will also support the policy preferred by the median voter if politicians are vote-maximizing and if other fairly restrictive assumptions hold. In practice, it appears that factors such as ideology, not just vote maximization, are important in determining legislator behavior.

Public choice theory directly models the preferences of legislators and the government failures that can arise when legislators pursue their own interests rather than the common good. Government failures such as corruption can have serious negative ramifications for the economic well-being of societies.
### Questions and Problems

1. In a recent study, Americans stated that they were willing to pay $70 billion to protect all endangered species and also stated that they were willing to pay $15 billion to protect a single species. Which problem with Lindahl pricing is demonstrated? Explain.

2. The preference revelation problem associated with Lindahl pricing becomes more severe as the number of people in society increases. Why do you think this is true?

3. Matsusaka (1995) showed that states that provide for voter initiatives tend to have smaller government growth than do states without such a provision. Why might this be so?

4. Major League Baseball uses what is known as a 5-3-1 system to vote for the Most Valuable Player (MVP) in each league. Each voter gets to vote for three different players they consider worthy of the award. Their first place candidate gets 5 points, their second place candidate gets 3 points, and their third place candidate gets 1 point. Points are then added up across all voters, and the player with the most total points wins the award. Suppose there are three voters—Neyer, Law, and Phillips—and five potential candidates for the award—Alex, David, Raffy, Manny, and Mario. The table below shows how each voter ranks the candidates. Raffy is embroiled in a substance abuse scandal. The “guilty” or “innocent” verdict will come out the day before voting, and a guilty verdict will nullify his votes.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Neyer</th>
<th>Law</th>
<th>Phillips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>David</td>
<td>David</td>
<td>Raffy</td>
</tr>
<tr>
<td>Second Best</td>
<td>Alex</td>
<td>Alex</td>
<td>Alex</td>
</tr>
<tr>
<td>Third Best</td>
<td>Raffy</td>
<td>Raffy</td>
<td>Manny</td>
</tr>
<tr>
<td>Fourth Best</td>
<td>Manny</td>
<td>Manny</td>
<td>Mario</td>
</tr>
<tr>
<td>Fifth Best</td>
<td>Mario</td>
<td>Mario</td>
<td>David</td>
</tr>
</tbody>
</table>

   a. Who will win the MVP if Raffy is found innocent?
   b. Who will win the MVP if Raffy is found guilty?
   c. What problem with consistent aggregation does this illustrate?

5. Fletcher (2003) shows that when congressional districts are redrawn to include more elderly people, members of Congress become more likely to take pro-elderly positions in congressional votes. Why does the median voter model predict that this would be so?

6. Stratmann (1995) documented a condition of “logrolling” in Congress, in which members of Congress trade votes on one bill for votes on another. Is logrolling efficient, or should it be banned? Explain.

7. A problem with the median voter outcome is that it does not take into account intensity of preferences. Suppose that the government decided to give multiple votes to people with strong preferences, pro or con. Would this solve the problem? Why or why not?

8. When local telephone companies wish to raise the rates they charge to phone customers, they must first argue their case at a public hearing before a regulatory body. How does the free rider problem explain why telephone companies are usually successful in getting permission to raise their rates?

9. Figlio (2000) found that legislators are more likely to mirror their constituents’ preferences during election years than in earlier years of their terms. This is particularly true for relatively inexperienced legislators. Why might this be the case?

10. Every year, the World Bank rates countries on the basis of their quality of governance, along a number of different dimensions (such as political stability, government effectiveness, and the rule of law). These indices are on the Web at http://www.worldbank.org/wbi/governance/pubs/gov matters4.html. Identify some countries where the quality of governance has improved from 1996 to the present. What does this improvement portend for future economic growth in these countries?
11. Alfie, Bill, and Coco each value police protection differently. Alfie’s demand for the public good is \( Q = 55 - 5P \), Bill’s demand is \( Q = 80 - 4P \), and Coco’s demand is \( Q = 100 - 10P \). If the marginal cost of providing police protection is $13.5, what is the socially optimal level of police provision? Under Lindahl pricing, what share of the tax burden would each of the three people pay?

12. Carrboro has three equal-size groups of people: (1) Type A people consistently prefer more police protection to less; (2) Type B people prefer high levels of police protection to low levels and they prefer low levels to medium levels; (3) Type C people most prefer medium levels to low levels, which they in turn prefer by a modest amount to high levels.
   a. Which types of people have single peaked preferences? Which have multi-peaked preferences?
   b. Will majority voting generate consistent outcomes in this case? Why or why not?

13. In business, there is a tension between the principals (stockholders) and agents (managers). The managers may choose policies that increase short-term profitability (and their bonuses) at the expense of long-term profitability. Describe why the same types of problems may exist in government, where elected officials are the agents and voters are the principals.

14. Voters rarely get to choose the exact level of spending on a public good. Instead, they are provided with two options—a proposed spending level posed by the government and a default (or “reversion”) level that would be enacted if the proposal were rejected by voters. The Leviathan theory suggests that governments will intentionally select large proposed spending levels and default levels that are well below the desired level of spending. Why is this behavior consistent with a size-maximizing government?

15. Refer back to Table 4-1, which reports the composition of the U.S. Generational Accounts. Why might the political system in the U.S. have led to this pattern of intergenerational transfers?