estimates show that Orioles Park has created fewer than 600 jobs and has left the typical household roughly \$12 poorer through the taxes they must pay to support the construction. Preliminary estimates show that, if anything, M&T Bank Stadium does an even worse job.<sup>34</sup> In sum, it appears that regardless of the approach they take, cities do not gain significantly from attracting a franchise.

## The Impact of Special Events

Even if cities do not gain much from hosting a sports franchise, they may profit from hosting a special event, such as the Super Bowl, the Olympics, or the World Cup finals. Special events like these differ from the typical game played by local franchises in that they do not appeal specifically to local fans. While much of the money spent by local fans on a baseball game or a regular season football game may just replace money they would have spent on something else, special events attract people from all over the world who would not have come to the host city had the event not taken place. The impact of special events would therefore be expected to be significantly larger than those of a franchise over a similar period of time.

As shown in Chapter 6, however, the benefits of the 2002 World Cup came nowhere near the projected \$31 billion. Similar overoptimism seems to accompany the Super Bowl. Here, though, even the findings after the fact are subject to dispute. In his study of the economic impact of the Super Bowl, Philip Porter notes that studies conducted by host committees or the NFL on the Super Bowls held in Tampa (1991), Miami (1995), and Phoenix (1996) show an impact ranging from almost \$120 million to over \$160 million.<sup>35</sup>

Porter examined the impact of the Super Bowl on Miami, Tampa, and Phoenix by estimating the impact of the Super Bowl on the dollar value of sales in each city's county (Dade, Hillsborough, and Maricopa Counties, respectively) for the 1979, 1984, 1989, 1991, 1995, and 1996 Super Bowls. He found little evidence that the Super Bowl had a major financial impact on the local economies. He found a statistically significant impact only for the 1984 Super Bowl in Tampa, and even this indicated that local sales increased by only \$1.3 million during the month of the Super Bowl.

How can one reconcile Porter's findings with the huge returns detected by the NFL and the host committees? The key seems to be analogous to our finding that spending by city residents on local sports franchises crowds out other local spending. In this case, the NFL and host committees seem to have assumed that all spending on the Super Bowl was new expenditure by additional tourists. Porter concluded that spending on a Super Bowl largely displaces spending by tourists who would have gone to these cities but could not do so because of the influx of football fans. The net impact of a Super Bowl in such a situation is essentially zero.

<sup>&</sup>lt;sup>34</sup>Bruce Hamilton and Peter Kahn, "Baltimore's Camden Yards Ballparks," in *Sports, Jobs, and Taxes*, ed. by Roger Noll and Andrew Zimbalist (Washington, D.C.: Brookings Institution Press, 1997), pp. 245–281.

<sup>&</sup>lt;sup>35</sup>Philip Porter, "Mega-Sporting Events as Municipal Investments: A Critique of Impact Analysis," in *Sports Economics: Current Research*, ed. by John Fizel, Elizabeth Gustafson, and Larry Hadley (Westport, C.T.: Praeger Publishers, 1999).

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### 7.2 A PUBLIC CHOICE PERSPECTIVE

If cities do not gain significantly from sports franchises, then their spending millions of dollars on facilities for these franchises seems to defy all economic logic. A relatively new area of economic thought—known as **public choice theory**—provides an economic framework that makes it possible to understand why cities do what they do.

Public choice theory stems from the work of Nobel laureate James Buchanan, Gordon Tullock, William Niskanen, and others in the 1960s. The basic premise rests on the notion that decision makers in the public sector do not automatically act to resolve the market failures of public goods and externalities. Instead, public officials are subject to many of the same temptations and constraints facing consumers and producers in the private sector.

According to the public choice perspective, the interests of politicians and the owners of sports franchises come together very neatly. Politicians have an interest in attaining, maintaining, and advancing their political standing. They therefore undertake actions that they feel will ensure their reelection or get them elected to higher office. To do so, they respond to the interests of the electorate. Since it is costly to determine the specific interests of large numbers of disparate voters, politicians are most responsive to organized group interests; the more highly organized the group, the more influence it wields over officeholders.<sup>36</sup>

Team owners, often in alliance with business and labor interests, have sought to use their organized influence over the political process. At times, the groups may actually improve the efficiency of the political process. By expressing the intensity of their desires, interest groups may-through a process known as logrolling—induce politicians to pass legislation that the electoral process would deny. To see this, suppose a legislature consists of three equal groups, each representing one-third of the state (i.e., East, Central, and West). The state is considering building two stadiums, one each in the East and West of the state. Suppose each new stadium would greatly benefit the region in which it is located but mildly hurt—through higher taxes that everyone in the state must pay to fund the stadiums—the other two portions of the state, as seen in Table 7.1. If the representatives voted according to the impact of the stadium on their constituents, they would defeat both stadium proposals, because each proposal hurts two-thirds of the state. According to the payoffs in Table 7.1, however, the benefits of each proposal benefit the constituency so much that majority rule leaves the state worse off. By expressing the intensity of their desires, group interests may induce legislators from the East and West to vote for each other's proposals and improve social well-being by passing both proposals. The proposal would therefore pass by a 2-1 margin, despite the fact that each facility benefits only one region.37

<sup>&</sup>lt;sup>36</sup>See, for example, Arthur Seldon, "Public Choice and the Choices of the Public," in *Democracy and Public Choice*, ed. by Charles Rowley (London: Basil Blackwell, 1987), pp. 122–134. In Chapter 10 we explore the role played by bureaucrats who are not directly answerable to voters.

<sup>&</sup>lt;sup>37</sup>See, for example, Thomas Stratmann, "Logrolling," in *Perspectives on Public Choice: A Handbook*, ed. by Dennis Mueller (Cambridge, U.K.: Cambridge University Press, 1997), pp. 322–341.

Table 7.1
How Logrolling Can Improve Social Well-Being

| Region         | Payoff to Proposal #1 | Payoff to Proposal #2 |
|----------------|-----------------------|-----------------------|
| East           | +\$10 million         | -\$2 million          |
| Central        | -\$2 million          | -\$2 million          |
| West           | -\$2 million          | +\$10 million         |
| Overall impact | +\$6 million          | +\$6 million          |

Generally speaking, group interests do not have such a positive impact on society. This is particularly true when groups use their political influence to pursue rents. Chapter 4 explained how rent-seeking behavior by firms in the private sector may increase the deadweight loss due to monopoly. In the public sphere, rents result from the monopoly right to provide an output. Rent-seeking behavior in the public sector thus consists of a two-step process. First, the rent seeker must control the political process that determines the distribution of rights or output. Second, once in control of the political process, the rent seeker then exploits his or her monopoly position.

It's possible to see such a two-stage process in the expenditures well-organized interests make to pursue their political ends. Pro-stadium forces in Cleveland raised over \$1 million to pay for their 1990 referendum effort; this included payments of over \$300,000 from the Indians and Cavaliers. In a more extreme example, Paul Allen, who used some of the fortune he made from Microsoft to purchase the Seattle Seahawks football team, paid the state of Washington \$4.2 million to cover the costs of the referendum on financing a new football stadium. This move neatly sidestepped the state's requirement that the team demonstrate sufficient support for a publicly funded referendum by gathering petitions. Allen also spent \$5 million during the campaign to convince voters to support the proposal to spend \$300 million on the new Seahawks stadium. The effort proved successful, as Washington voters narrowly approved the proposal. The \$300 million return on a \$9.2 million investment proved to be one of Allen's most profitable moves since joining with Bill Gates to form Microsoft.<sup>38</sup>

# 7.3 FINANCING FACILITIES

Section 7.1 showed that state and local governments can—at least in theory—justify subsidizing franchises, if the city or state benefits from the public good aspect of the franchise or from the positive externalities it conveys upon the city. Because the local team is not rewarded for all the benefits it provides to the community, it may not have enough of an incentive to locate in the city without a public subsidy. The subsidy, however, has to come from somewhere. State

<sup>&</sup>lt;sup>38</sup>Cagan and deMause, Field of Schemes (1998), pp. 16, 44, 166–168.

and local governments have two basic sources of revenue: taxes and debt. Both sources have their advantages and disadvantages. Even if the community borrows, however, it eventually will have to raise taxes in order to repay the loan. Since governments cannot escape imposing a tax, they should pay careful attention to the form of tax they impose, as different taxes have significantly different impacts on subgroups in the population. In the first part of this section, we present several criteria by which economists evaluate tax plans. In the next three subsections, we then use these criteria to evaluate methods that cities have chosen to finance new facilities. In the final part of this section, we look at why governments prefer using debt to finance new facilities.

# An Economic View of Taxes: Who Should Pay?

We have seen that negative externalities cause society to produce and consume too much of a good and that positive externalities cause it to produce and consume too little. Governments typically try to resolve the problems that externalities cause by *internalizing* them. In the case of negative externalities, taxes raise the cost of production, causing firms to produce less. In the case of positive externalities, subsidies increase the rewards from production and encourage firms to produce more.

Using a subsidy to eliminate a positive externality raises a crucial question: where does the government get the money to provide the subsidy? Economic theory explains that governments maximize the well-being of their residents, if they finance the subsidy by imposing taxes or fees based on the benefits each person receives from the positive externality. Unfortunately, the nature of positive externalities often makes it difficult to identify exactly who benefits. Fortunately, it is possible to establish some general principles for determining who should pay how much for a sports franchise.

One such principle—known as the Ramsey rule—dictates that sales taxes should be levied in inverse proportion to the price elasticity of demand for the good or service on which the government places the tax. Such a tax is efficient in the sense that it minimizes the deadweight loss imposed by the tax.

Suppose Miami wishes to raise money to fund a new baseball stadium for the Florida Marlins and is considering two possible sources of tax revenue: cruise passengers and kidney dialysis patients. Assume, for simplicity, that the city feels it can raise all the revenue it needs by imposing a \$4 tax on either. Figure 7.5 shows the impact of a tax on cruises. As shown in Chapter 2, a \$4 sales tax causes consumers to see a supply curve that is \$4 higher than the true supply curve.

Since the equilibrium number of days spent on cruises falls from  $Q_0$  to  $Q_1$ , the deadweight loss imposed by the tax equals the area of the triangle ECH. This burden consists of lost consumer surplus for cruise takers (EGH) and lost producer surplus for cruise operators (CGH). The implications of this shared burden are explored later in the chapter.

Contrast the deadweight loss from a cruise tax with the deadweight loss from a tax on kidney dialysis, as seen in Figure 7.6. A \$4 tax on dialysis shifts

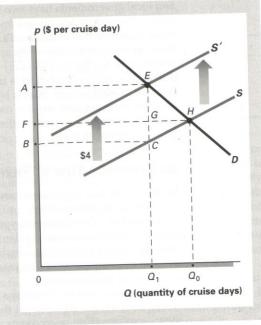
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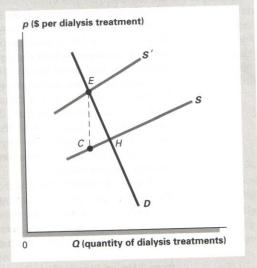


The Impact of a \$4/Day Tax on Cruises



### FIGURE 7.6

A Tax on Dialysis Causes Very Little Deadweight Loss



the supply curve (which, for simplicity, we assume to be identical to the supply curve in Figure 7.5) up by \$4, just like before. Unlike cruises, kidney dialysis has no good substitutes. The demand for dialysis is therefore much less sensitive to changes in price than the demand for cruises. Since the demand curve is so inelastic, the quantity of dialysis hardly changes and the price increases by almost the full amount of the tax. Because the tax on dialysis causes little loss of output, there is very little deadweight loss (the area of the triangle ECH).

If Miami wants to impose a tax that minimizes deadweight loss, then a tax on dialysis may be just the thing. Most people, however, would not choose to impose a greater burden on people who are unfortunate enough to

require dialysis.

Society must often choose between policies that are efficient and policies that satisfy some notion of fairness or *equity*. Tax analyses frequently apply two forms of equity: **horizontal equity** and **vertical equity**. Economists say that a policy satisfies vertical equity if it takes account of people's ability to pay. More generally, one can say that a vertically equitable tax does not fall particularly heavily on those with an already low level of income. Since cruises are pleasure trips typically taken by the well-to-do while dialysis is an undesired burden borne by people from a variety of income groups, a cruise tax is more vertically equitable than a dialysis tax.

While vertical equity applies across income or utility levels, horizontal equity refers to fairness at a given level. A tax is horizontally equitable if it treats equals equally. Since public expenditure often confers unequal benefits on the population, the pursuit of horizontal equity leads governments to levy taxes in proportion to the benefits received from the expenditure. In this example, the cruise and dialysis tax appear to do equally well by this criterion.<sup>39</sup>

Some economists feel that governments should rely on **user fees** rather than public taxation to fund facilities. They believe that the public good aspects of a professional franchise are dwarfed by the private consumption that takes place. The emphasis that teams now place on luxury boxes and prime seating has made it difficult for middle- or low-income fans to attend the major professional sports games on a regular basis. In 1994, the median income of fans who attended sports events in the United States was almost double the median income level of the country as a whole. Whether a cause or a result of this trend, new facilities have tended to emphasize revenue from luxury boxes and special seating at the expense of affordable seating for the general public.<sup>40</sup>

The growing reliance of many teams on cable television has also made it increasingly difficult for low- and middle-income fans to follow the team at home. While all the citizens of New York may take pride in the success of the Yankees, much of the city benefits only from having something to talk and feel

<sup>&</sup>lt;sup>39</sup>For more on these—and other—criteria for evaluating taxes, see, for example, Harvey Rosen, *Public Finance* (Chicago: Irwin, 1995).

<sup>&</sup>lt;sup>40</sup>Figures from John Pastier, "Diamonds in the Rough: Two Cheers for the New Baseball Palaces," Slate Magazine, July 31, 1996, at http://slate.msn.com/feature2/96-07-31/feature2.asp; and John Siegfried and Andrew Zimbalist, "The Economics of Sports Facilities and Their Construction," Journal of Economic Perspectives, v. 14, no. 3 (Summer 2000), pp. 95–114.

proud about since they can afford neither tickets nor cable fees. Poor and minority residents, in particular, must content themselves with radio broadcasts or newspaper accounts of their home team.<sup>41</sup>

In fact, many of the consumption benefits of a major league franchise flow out of the city to the residents of the relatively wealthy suburban ring. The suburbs disproportionately house the people who can most afford tickets to sporting events. They also disproportionately house corporate executives who use the luxury boxes and other premium seating that now account for so much of the cost of a facility. In addition, as explained earlier, most cities got only a small fraction of the revenue from luxury boxes. Taxes that fall on residents of the city that houses the team therefore allow suburbanites to free ride, while those who pay the most may enjoy the least consumption value from the team.

#### Sales Taxes

In addition to creating a deadweight loss, sales taxes often place a burden on groups that the government does not wish to target. Depending on the products subject to tax, the burden may fall upon people who do not benefit from the new facility, thereby violating horizontal equity. The merits of sales taxes on items directly related to sports facilities are considered later in the chapter. This section explores the problem posed when the burden of a sales tax does not fall solely on the people who ostensibly pay the tax. The tax burden shifts because people respond to the world around them. Governments that impose a tax expecting people to behave the same way they did before the tax was levied are in for a rude awakening.

The Florida Marlins stirred up a major controversy in south Florida when they proposed raising the \$300 million for a new stadium with a \$4 per-day sales tax on people who take cruises out of the Port of Miami. One might think that such a tax would be a very popular way to fund a new stadium. Since 85 percent of the people who take cruises are from out of state, such a tax seems like a natural way to export the burden of paying for a new stadium to taxpayers from other states. The tax, however, generated virulent opposition among cruise operators even though the tax was not imposed on them.<sup>42</sup>

To see why, consider the impact of a \$4 tax on the roughly 1 million people who take cruises from the Port of Miami. If the typical tourist takes a 5-day cruise, then it's possible that the the tax will raise \$20 million per year (\$4 per day  $\times$  5 days per tourist  $\times$  1 million tourists per year). However, this ignores the fact that consumers respond to higher cruise prices.

<sup>&</sup>lt;sup>41</sup>See, for example, Roger Thurow, "Thrown for a Curve," Wall Street Journal (August 28, 1998), pp. A1, A6.

<sup>&</sup>lt;sup>42</sup>For accounts of this debate, see Linda Kleindienst, "Broward Opposes Bill Levying Cruise Tax to Help Pay for Marlins Stadium," Fort Lauderdale Sun Sentinel, March 22, 2000; and Charles Savage, "Panel OKs Cruise Tax; Broward Is Exempt," Miami Herald, March 29, 2000, at http://www.herald.com/content/today/docs/013838.htm.

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anel OKs content/ Recall from Figure 7.5 that the tax causes the price of a day on a cruise to rise—though by less than \$4—and the number of days spent on cruise ships to fall. The higher price that people pay per day on a cruise (segment AF in Figure 7.5) is the portion of the \$4 daily tax that they bear. Since the government has imposed a \$4 tax but the price of a cruise rises by less than \$4 per day, cruise operators receive a lower price per day than they did before the tax was imposed. The lower price that cruise operators receive (segment FB in Figure 7.5) is the portion of the \$4 tax that tourists have passed on to the local cruise industry.

The total tax burden equals the \$4 per day tax (segment AB in Figure 7.5) times the number of rooms rented (segment AE). This product, the total tax revenue, equals the area of the rectangle ABCE in Figure 7.5. The portion of this rectangle that lies above the original price of the room (the rectangle AFGE in Figure 7.5) is the burden on people who take cruises. The rectangle below the original price (FGCB in Figure 7.5) is the burden on cruise lines. Since visitors respond to the higher price of cruises from the Port of Miami by taking fewer or shorter cruises, the tax revenue falls short of the \$20 million target. The fall in visits also imposes a new cost on both those who take cruises and cruise operators.

Cleveland applied a different kind of sales tax to help fund the facilities it built. It imposed a 15-year sin tax on residents of Cuyahoga County. Like most sin taxes, these taxes consisted of sales taxes on tobacco products and alcohol. They are popular with many citizens because they impose a burden on people who engage in or cater to "sinful" behavior. Much of the public thus views sin taxes as a way to raise revenue by taxing other people and as a way to discourage undesirable activity. Unfortunately, sin taxes cannot achieve both of these ends. As shown in Figure 7.5, if a tax discourages behavior, it creates a large deadweight loss and fails to raise the anticipated amount of revenue. To the extent that drinking and smoking are addictive behaviors, the demand for them is highly price inelastic. Figure 7.6 showed that taxes on goods for which demand is inelastic create very little deadweight loss and come much closer to raising the desired revenue. However, they do so because they fail to discourage the sinful behavior.

Public choice theory helps to explain why Cleveland's sin taxes stirred less organized opposition than south Florida's proposed cruise tax. The deadweight loss of a tax adds to the burden on the group that pays the tax and hence subsidizes the publicly funded facility. A larger burden makes that group more likely to organize opposition to the tax. Since the demand for cigarettes and alcohol are far less own-price elastic than the demand for cruises, a smaller deadweight loss and less opposition arose to the sin tax. Since the tax falls most heavily on the poor and minorities, who are less likely to enjoy the benefits of the new ballpark, the tax and stadium policies fail on grounds of both vertical and horizontal equity.<sup>43</sup>

#### Lotteries as an Alternative Revenue Source

On the face of things, Baltimore seems to have found a better way to finance M&T Bank Stadium and Oriole Park at Camden Yards than either Miami or

<sup>&</sup>lt;sup>43</sup>See Gary Becker, "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, v. 98, no. 3 (August 1983), pp. 371–400.

Cleveland. Both of Baltimore's facilities were built with funds from a state lottery. Since a lottery is a voluntary purchase rather than an involuntary payment, it seems like an ideal source of revenue. The growing reliance of states on lotteries seems to support this view.

However, state lotteries do not stand up to closer scrutiny. First, they are highly inefficient revenue sources. Only about a third of the revenue they raise goes into state coffers. A substantial portion of the remainder is spent trying to induce people who do not otherwise gamble to spend money on lottery tickets. Evidence also indicates that lotteries are regressive, meaning that wealthy people spend a smaller proportion of their incomes on lottery tickets than do poor people (sin taxes are also generally regressive taxes). A California survey in the mid-1980s showed that a household making \$10,000 per year spent roughly the same amount of money on lottery tickets as a household making \$60,000 per year. In fact, the purchase of lottery tickets is inversely related to several measures of socioeconomic status. For example, studies have shown that people with more formal education are less likely to play the lottery and that laborers are the most likely to play the lottery while professionals are the least likely. This led Milton Friedman and Leonard J. Savage to claim in their classic work on risk and uncertainty that low-income people take such risks in a desperate attempt to improve their social standing. The poor and uneducated are precisely the people who benefit the least from the presence of a professional franchise. It is a small wonder that lotteries are often termed taxes on this socioeconomic class.44

From a public choice perspective, lotteries are a logical choice, because the poor and uneducated are far less likely to form political pressure groups—or even to vote—than are the wealthy and highly educated. Like the sin tax, however, it fails on grounds of both vertical and horizontal equity.

# Two Superior Funding Mechanisms

None of the above funding mechanisms does a particularly good job of meeting the criteria set out at the beginning of this section. Some are inefficient; others fail on equity grounds. We now turn to two funding sources that, while flawed, do a better job of meeting the criteria. Each tries explicitly to allocate burdens more equitably, though they do so in different manners.

The first mechanism is exemplified in the way that the Milwaukee Brewers' has funded the new stadium, Miller Park, by thinking big. They instituted a sales tax on Milwaukee and the surrounding five-county region. The broader geographic reach of this tax accounts for the regional impact of a stadium and thus reduces the vertical and horizontal inequities that result when inner-city taxpayers finance a facility that benefits wealthy suburbanites. While the regional tax reduces inequities, it does not eliminate them entirely. In addition, while the sales

<sup>44</sup>See Zimmerman, "Subsidizing Stadiums: Who Benefits, Who Pays?" (1997), pp. 125–126; Robyn Gearey, "The Numbers Game," New Republic (May 19, 1997), pp. 19–24; Charles Clotfelter and Phillip Cook, "On the Economics of State Lotteries," Journal of Economic Perspectives, v. 4, no. 1 (Fall 1990), pp. 105–119; and Milton Friedman and Leonard J. Savage, "The Utility Analysis of Choices Involving Risk," Journal of Political Economy, v. 56, no. 4 (August 1948), pp. 279–304.

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lotfelter and 4, no. 1 (Fall is of Choices tax does a better job of targeting the beneficiaries of the stadium, it remains a rather broad brush, as it is based on a person's purchases of goods and services and not on a person's benefits from having the Brewers in town.<sup>45</sup>

The second mechanism is demonstrated by the way that Seattle and the state of Washington are funding the Mariners' new home, Safeco Field, by thinking small. They have tried to target the funding of the new ballpark directly at the beneficiaries of the public expenditure with a special sales tax of 0.5 percent on restaurants, bars, and taverns in King County and a tax of up to 5 percent on admissions to Safeco Field. They have also sought to export some of the burden with a 2 percent tax on rental cars. This sales tax does the best job of matching burdens to benefits in order to impose the tax burden on those who benefit from having the Mariners in town, though it does not get things quite right. By charging a five-star French restaurant at the opposite end of the county the same tax that it charges a bar across the street from the stadium, the government does not match costs to benefits particularly well. Their tax on admissions does a far better job of matching costs and benefits. The tax on car rentals has the same imperfect impact as the cruise tax example discussed earlier.<sup>46</sup>

Despite each mechanism's drawbacks, these plans appear to do the best job of minimizing deadweight loss while averting horizontal and vertical inequities.

### Taxes or Debt?

State and local governments can finance stadium construction by borrowing as well as by taxing their residents. Since David Ricardo first stated his famous "equivalence theorem," economists have known that borrowing and taxation have the same impact on residents, at least in theory.<sup>47</sup> State and local governments, however, face several institutional factors that lead them to prefer debt funding to direct taxation.

While people and small firms typically borrow money by taking out a loan at a bank, large corporations and governments often want to borrow more money than a single lender is willing to provide. As a result, they typically borrow by issuing **bonds**. A bond is a promise to pay the person who owns the bond a fixed amount—the **face value** of the bond—at some future point in time. Few people are willing to lend money without some form of additional compensation, and so bonds also promise to make periodic **interest** payments as well.<sup>48</sup> Consumers can compare two bonds with different face values and interest payments by computing the **interest rate**. The interest rate equals the ratio of the interest payment to

<sup>45</sup>See Zimmerman, "Subsidizing Stadiums: Who Benefits, Who Pays?" (1997), p. 137.

<sup>&</sup>lt;sup>46</sup>MSC Sports, "New Park Financing: How the Deals Got Done," 1999, at http://www.wcco.com/sports/stadiums.html.

<sup>&</sup>lt;sup>47</sup>For a more complete treatment, see N. Gregory Mankiw, *Macroeconomics* (New York: Worth, 2000), pp. 419–424.

<sup>&</sup>lt;sup>48</sup>Lenders demand interest because they are sacrificing the chance to use that money by letting someone else have it. The interest payment is compensation for that lost consumption.

the price of the bond. This provides a common yardstick for comparing the value of two different bonds to lenders and the cost to borrowers.

Bonds issued by state or local governments have an advantage over otherwise identical bonds offered by corporations. Tax laws allow bondholders to deduct the interest they earn from state and local bonds from their federal taxes. The higher preference for municipal government bonds drives up the demand for them and causes their price to rise from  $p_0$  to  $p_{11}$  as shown in Figure 7.7.

If the price of the municipal bond rises, then the interest rate falls. Bonds offered by state and local governments are then cheaper to the state and local governments because of federal tax laws. The lower tax revenues mean that taxpayers elsewhere will have to pay higher taxes, that federal programs will have to be cut, or that the federal government will have to borrow more and drive up interest rates. No matter what, the deductibility of municipal bonds imposes costs on the rest of the nation. Municipalities thus like the idea of debt finance because it imposes some of the cost of a stadium on residents of other municipalities.

Even if debt did not export the burden geographically, it could export the burden intertemporally. If future generations enjoy the benefits of the new facility, then economic theory says that society is better off if they pay some of the burden. Debt financing allows a city to impose some of the burden of a new facility on future generations. Unfortunately, one result of the increasing exercise of monopoly outlined in Chapter 6 has been the steady decreasing of a facility's economic life. Structures that could stand for 40 to 50 years now become economically obsolete in only 10 or 20. Future generations may therefore be stuck with the bill for a facility that their teams have already abandoned.

FIGURE 7.7

Tax Breaks Favor Municipal Bonds

Polymonicipal Decorporate

O Q (quantity of bonds)