Excerpt from Adam J. Hoffer and Todd Nesbit, eds., *For Your Own Good: Taxes, Paternalism, and Fiscal Discrimination in the Twenty-First Century.* Arlington, VA: Mercatus Center at George Mason University, 2018.

CHAPTER 11
Tax Schemes for Sports Venues

DENNIS COATES
University of Maryland, Baltimore County

CRAIG A. DEPKEN II
University of North Carolina at Charlotte

Since 1990, the United States has experienced a boom in the construction of new facilities for professional sports franchises. Overall, 20 new hockey arenas, 24 new basketball arenas, 22 new football stadiums, and 26 new baseball stadiums have been constructed, many with substantial public subsidies. This construction frenzy has occurred despite what appears to be an increased skepticism about the promised net benefits of stadiums since the previous building period of the 1960s.

While economists have been studying the impact of new stadiums, franchise (re)locations, and hosting events on various measures of economic interest, the public discourse surrounding a new stadium has remained remarkably static over time. Generally, the main justification for contributing public dollars to the construction of stadiums and arenas centers on the impact on the local economy of the stadium, the franchise housed there, and the events that take place there. Some of these impacts are temporary, such as jobs in the construction sector during the building phase; other impacts are thought to be more permanent, such as permanent jobs associated with the events in the stadium or with indirect and induced effects of the stadium and its events. Still other

effects are more ephemeral, including a sense of civic pride and the advertising effects that a new stadium generates for local tourism and business location.

Balanced against these hoped-for benefits are often several hundred millions of public dollars that help fund the construction of the new stadium or arena. These public dollars are rarely paid for out of surplus at the city or state level but rather are generated through combinations of special purpose sales, excise, and property taxes. Many times the taxes are intentionally levied on activities associated with tourism, such as hotel taxes, food and beverage taxes, and car rental taxes, with the intention of having out-of-towners pay for the stadium costs and ostensibly allowing the locals to pay less. However, such tax schemes often have a larger than predicted impact on local citizens and on the hospitality industry.

Proposed stadium projects are often presented with a cost-benefit study that is generated long before stadium construction begins and even longer before the stadium opens. The nature of the ex ante analysis is that it is predictive in nature and suffers from the same prediction bias that accompanies cost-benefit analysis of other public projects and regulation. The information required for an accurate prediction is often lacking, as is any accountability for being incorrect. This results in rosy predictions of millions of dollars in direct, indirect, induced, and implicit benefits to the local economy and citizens, hundreds if not thousands of jobs associated with the new venue, and relatively little emphasis on the direct, indirect, and opportunity costs associated with the public's contribution to the project.

These ex ante studies stand in stark contrast to the hundreds of ex post studies of venues, franchise (re)locations, and event hosting. Such studies often find small, and often negative, impacts on many economic variables of interest, such as income, wages, jobs, tourism spending, hotel registration, business relocation, and tax revenues, to name a few (a good summary of the literature is Coates and Humphreys 2008). The ex post studies have the advantage of utilizing actual data generated after a new stadium opens, of being developed over a longer period of time without looming deadlines associated with referendum dates, and of being generally apolitical in the methodology and results obtained.

This chapter describes the range of taxes used to finance stadium and arena construction, presents information on the prevalence of the various taxes, highlights their characteristics, and offers some insight into the incidence of these taxes. Finally, we discuss the evidence concerning who benefits from stadium and arena projects.

TAX INSTITUTIONS AND THEIR FREQUENCY OF USE

The typical stadium construction project is financed in whole or in part by some amount of government borrowing via issuing bonds. While some previous projects have been funded at the state and county level, most often they are funded at the city or metropolitan level. Subsidies by the host city can be justified on economic grounds if there are substantial benefits that redound to the local economy. By issuing debt, the borrowing entity promises to make principal and interest payments on the bonds over a set period of time, typically 30 years. The higher the interest rate, the more expensive a given level of debt is to service, and interest rates have been shown to be highly correlated with debt ratings, which are, in turn, related to many such things as existing debt levels, corruption, economic and population growth, and governance structures, to name a few.[1] As the interest rate charged to a municipality is highly correlated with the expected ability for the borrowing government to repay on a timely basis, it is important that the borrowing government be able to clearly signal how it will service the debt and whether the debt might be retired early.

The most generic means of financing a stadium project would be for the borrowing government to issue general obligation bonds that are serviced using general tax revenues from all sources, including income taxes, property taxes, excise taxes, lottery proceeds, and business taxes. However, it is relatively rare for a borrowing government to use general obligation bonds. One reason might be the perception that having separate stadium debt increases transparency about how the debt is being serviced, which might reduce the interest rate such debts carry. Furthermore, separating the stadium debt allows for specifically enumerated sources of funds—such as sales taxes, excise taxes, hotel occupancy taxes, car rental taxes, and ticket surcharges—to be negotiated. Finally, separating stadium debt might yield a political advantage in the case of a public referendum on the proposed stadium project if voters feel that dedicating general revenues carries too high an opportunity cost.

How the money is raised to service public stadium debt is strongly connected to the theory of political economy and public choice. Logic suggests that franchises prefer financing schemes with the smallest impact on their ability to generate revenue from the franchise and the events held in the stadium and that obligate them for the smallest possible share of the financing and operating costs of the stadium, holding other things constant. Because of these incentives, franchises, leagues, and private-citizen supporters apply pressure on city, county, and state officials to provide public-sector financial and other support for a new stadium. This pressure can include economic impact studies

that purport to show how much value the team offers the local economy, testimonials about how much fans are affected by the existence and location of the team, or threats to relocate if a new stadium is not forthcoming. If a team is able to secure partial or full public funding for a new stadium, the question of how the debt will be financed is also negotiated. Clearly the team seeks to retain as much as possible of the revenue generated by events in the stadium, money to be made through advertising in and outside the stadium, and all other revenue streams that the team generates. For example, if a fan is willing to spend $100 on a ticket, the team would clearly prefer to retain the full $100 rather than share any of that money with the government that provides the public subsidy for the stadium. To this end, teams and leagues often push for any public debt to be serviced using revenues generated outside the sphere of the team. Doing so serves the dual purpose of retaining as much revenue for the team as possible and making the incidence of taxes used to finance the subsidies as opaque as possible.

Tables 1 and 2 present information on the relative usage of the various revenue sources states and local governments use to fund stadium and arena subsidies. Table 1 reflects the 99 North American professional sports facilities operating in 2001. Table 2 presents similar information for 112 professional sports facilities operating in 2015. Table 1 shows that many facilities in 2001 were subsidized using different taxes but that the majority included some general revenue funding. While the *Sports Facility Reports* (National Sports Law Institute, Marquette University Law School 2015) do not indicate when general government revenue or lease revenue is used to help finance stadium

Table 1. Number of Sports Facilities Using Different Revenue Sources, 2001

		Number of Facilities Using Revenue Source					
League	Total Number of Facilities	General Revenue	Facility Lease	Sales Tax	Hotel and Car Rental Taxes	Alcohol, Tobacco, and Lottery Taxes	Other
MLB	25	16	9	6	6	3	5
MLB/NFL	5	5	0	0	0	0	0
NFL	24	16	5	6	4	3	0
NBA	15	10	2	2	1	1	2
NBA/NHL	13	7	4	0	2	0	1
NHL	17	11	3	2	3	0	0
Total	99	65	23	16	16	7	8

Source: Derived from Long (2002), table 4.30.

Table 2. Number of Sports Facilities Using Different Revenue Sources, 2015

League	Total Number of Facilities	Number of Facilities Using Revenue Source			
		Sales Tax	Hotel and Car Rental Taxes	Alcohol, Tobacco, and Lottery Taxes	Other
MLB	29	10	7	1	1
MLB/NFL	1	0	0	0	0
NFL	31	8	11	1	0
NBA	21	2	6	1	0
NBA/NHL	9	3	2	0	3
NHL	21	1	1	0	0
Total	112	24	27	3	4

Source: Derived from National Sports Law Institute, Marquette University Law School (2015).

subsidies, table 2 suggests that many subsidies are still financed with general revenue at some level.

Table 1 shows that, in sixty-five out of ninety-nine cases, state and local governments were paying for sports facilities at least in part out of general revenues. In other words, at least two-thirds of the facilities being subsidized by local and state governments did so directly at the expense of other state and local government services. The proportion is lower to the extent that sales, hotel and car rental, and excise and lottery taxes were enhanced or specifically created to help finance the sports facilities.

Comparing tables 1 and 2, it becomes clear that the financing of newer facilities has evolved. Greater use is made of both sales tax and hotel and car rental taxes as funding sources in 2015 compared to 2001. The so-called sin taxes (on alcohol, tobacco, and lottery sales) have become less common over time. In addition, tax increment financing (TIF) and the use of property taxes are more explicit in 2015. Finally, the stadium for the Washington (DC) Nationals is financed in part by a tax on utilities and by a gross receipts tax on businesses with gross receipts of more than $5 million.[2]

One method of financing stadium debt is the introduction of a temporary increase in the local sales tax. Of the thirty-two NFL stadiums currently in operation, eight use some form of sales tax as part of their financing for construction or renovation; ten of thirty MLB teams do so, while five of thirty NBA teams and four of thirty NHL teams use some form of sales tax (see table 2). A sales tax is, generally speaking, imposed by law on the purchase of a good or service in a specific geographic area, such as a city, county, or state. Operationally, the sales tax is added to the price of the good or service at the

point of sale by the seller, but the burden of the sales tax is shared by both the buyer and the seller. The more elastic the demand for the product, the less the burden falls on consumers, whereas the more elastic is supply, the less the burden falls on sellers. As supply and demand are rarely at the extremes of perfect elasticity, a sales tax usually raises the price of the taxed item for the buyer, lowers the net-of-tax revenue for the seller, and reduces the quantity of the taxed item traded in the market.

An important issue with this sort of taxation is the nature of the tax base, or the range of final goods and services to which the tax applies. In the case of NFL stadiums, five are financed with add-ons to the general sales tax rate, while three utilize a sales tax increase only on stadium-related purchases. The narrower the set of goods and services subject to the sales tax, the higher the tax rate must be to raise the necessary revenues. Because taxing some goods but not others makes the untaxed goods more attractive, changes in the sales tax can alter consumption patterns, which can affect the amount of revenue generated by the increased tax. This ability to influence consumption is important, because different states define the tax base differently. In other words, two states can both finance their stadium debt via a sales tax, yet those taxes can have quite different impacts, because the states apply the sales tax to different sets of goods and services.

Consider a tax on tickets for events held in the stadium. The tax could be a percentage of the ticket's face value or it could be a fixed fee per ticket.[3] One advantage of such a tax, from the point of view of economists, is that it follows the benefit principle: those who gain the most by the new stadium—fans in attendance and the teams that play there—bear much of the cost of financing the new stadium.[4] Because fans and the teams both have the incentive to avoid paying for the new stadium in this way, such surcharges are not often utilized. For example, only three of the thirty-two NFL stadiums use ticket surcharges as a form of finance, no MLB stadium finances involve ticket surcharges, and only three NBA and four NHL facilities do so.

Other special sales taxes often used to finance stadiums are additions to the local hotel, lodging, or accommodations tax, and increased taxes imposed on car rentals. These taxes are imposed at some percentage rate in addition to whatever tax rates applied to these expenditures prior to stadium finance. Eleven NFL facilities, five MLB stadiums, three NBA arenas, and one NHL arena are partially funded by hotel taxes. Four NFL stadiums, four MLB stadiums, four NBA arenas, and one NHL arena are funded in part with car rental taxes. Although use of such a tax for the University of Phoenix Stadium in Phoenix was declared unconstitutional by the Maricopa County

Superior Court in 2014, the tax is still being collected while the ruling is appealed.

Property taxes are a very common method of funding local public services, especially education, in the United States. Practices vary across states, but generally real property (e.g., cars), residential, commercial, industrial, and agricultural land and structures are taxed at a fixed percentage of their assessed value. Tax rates vary across types of property, and most states have exemptions for some portion of the value, especially in the case of residential and agricultural property. No current NFL, MLB, or NBA stadium is explicitly financed by special provisions of property taxes, and only two NHL arenas involve financing from property taxation. The more common manipulation of property taxes in the case of new stadiums is to partially or fully exempt the new stadium from local or state property taxes. For example, the Pepsi Center in Denver is exempt from property taxes, saving the arena, and indirectly its two primary occupants (the NBA Denver Nuggets and the NHL Colorado Avalanche), more than $2 million a year.

Tax increment financing is a common method of encouraging local economic development expenditures. First used in California in the early 1950s, the theory behind a TIF is that an initial public subsidy is provided for a specific development project in a particular narrow geographic area and is repaid with increased real estate tax revenues from the TIF district. The increase in real estate tax revenues is expected to flow from increased economic activity and higher property values attributed to the presence of the development project. While TIFs have been very popular in the United States throughout the past four decades, at present no NFL, one MLB, and one NBA/NHL facility is financed using TIF.

Some facilities have been partly financed by dedicating some or all revenues from the state lottery to paying principal and interest on the state and local government debt incurred to fund stadium construction. For example, in Washington, specially developed sports-themed lottery games have been created and are expected to produce $127 million for Century Link Field (home of the NFL Seahawks) and $3 million a year toward Safeco Field (home of the MLB Mariners), both located in Seattle. Baltimore's Oriole Park at Camden Yards is also funded with state lottery revenues; indeed, the Maryland Lottery was created to fund stadium construction. No current NBA or NHL facilities are explicitly funded via lottery revenues.

Two additional means of financing stadiums and arenas are described despite not being, strictly speaking, taxation. Despite this, they do involve use of public resources and are akin to tax expenditures, that is, the forgoing of

tax collections rather than direct spending of taxes collected. The first of these methods is Payments in Lieu of Taxes (PiLoTs), the second is facility naming rights.

PiLoTs are traditionally used in the context of not-for-profit institutions whose property is exempted from property taxes. Since the not-for-profit receives local public services, such as fire and police protection and garbage collection, yet pays no property taxes, it gets the services for free. Local governments, particularly those experiencing financial difficulties, negotiate with the not-for-profits for some payment for these services, in lieu of taxes.[5] Even though most professional sports franchises in North America are for-profit entities, they are often exempted from property tax payments. A PiLoT arrangement was used in the financing of the new Yankee Stadium in 2006, projected to save the Yankees $786 million over a 40-year period, and Matheson and Humphreys (2009) suggest this approach could spread in financing sports facilities. The primary benefit for the Yankees lies in lower costs of borrowing to cover their portion of construction costs. Under the terms of the agreement between the New York Yankees and the New York City Industrial Development Agency, the agency borrows hundreds of millions of dollars that are used to construct the new Yankee Stadium. Instead of paying property taxes, revenues from which would be used to pay interest and principle on the bonds, the Yankees pay interest on the bonds out of its regular revenues. The Agency borrows at the interest rate on state and local bonds, so the PiLot saves the Yankees money, because the club incurs lower costs than if it borrowed the money directly.

The sale of naming rights could be a common source of stadium financing. However, in nearly all cases, the tenant teams are allowed to sell the name of the stadium and retain the revenue themselves, with no explicit revenue sharing arrangement with the host city or any explicit requirement to dedicate the naming rights revenue to servicing the stadium debt. In the case of naming rights, local government allows the club or franchise to sell the rights, with those funds often being counted toward the club's contribution to paying for the facility. Carl Lindner became majority owner of the Cincinnati Reds in 1999, and his company Great American Insurance purchased naming rights to the Cincinnati baseball stadium. Delaney and Eckstein (2003, 213) write that "the money goes to the team and is counted as part of the team's contribution toward stadium costs." PNC Park, home of the Pittsburgh Pirates, opened in 2001 at a cost of $262 million. The cost of the stadium to state and local taxpayers was $75 and $137 million, respectively, and the Pirates contributed $50 million, of which $30 million was covered by the naming rights (Panyard 2010).

GEOGRAPHIC AND TEMPORAL REACH

Taxes to finance stadium and arena construction have both a geographic and a temporal aspect that may differ from other taxes. The geographic aspect is best exemplified by comparing those cases in which a sales tax applies only to purchases inside the stadium with those where the sales tax applies to all sales in the jurisdiction. Clearly, taxes to finance stadium debt can be narrowly focused or more broadly based. In Wisconsin, voters in Brown County, home to the Green Bay Packers, approved a sales tax add-on to fund renovations to Lambeau Field. A regional sales tax was imposed in Milwaukee, Ozaukee, Racine, Washington, and Waukesha Counties to fund the baseball stadium for the Milwaukee Brewers. In terms of geographical reach, the farthest point from Lambeau Field in Brown County is approximately 19 miles, whereas the farthest geographic distance from Miller Park in Milwaukee's multicounty tax jurisdiction is 42.3 miles.

Most common, however, is the case in which the state has committed to paying the debt from general revenues. (See tables 1 and 2.) In other words, stadium debt repayment is not tied to either the users of the facility or the communities where most of the users will come from. For example, New Jersey's legislature obligated itself to paying off the bonds of the New Jersey Sports and Exposition Authority, if that organization were unable to do so, by backing those bonds with its moral authority. As another example, initially some funds for paying the stadium-related debt linked to construction of Oriole Park at Camden Yards, in Baltimore, were to come from the state lottery with new games created for that purpose (Miller 2012). Of course, players of the state lottery reside in all parts of the state. This spreads the cost of the stadium across a wide geographic area, including many people who will never view an event in the new stadium.

Finally, the federal exemption from income tax of interest from state and local government debt means that US taxpayers from states without professional sport franchises are paying for some of the stadium and arena subsidies for those that have teams. This form of tax exemption was dropped in President Barack Obama's proposed federal budget for fiscal year 2016/2017. The temporal aspect of the taxes has two dimensions. First, legal authorization for the tax may expire when the bonds are paid off. The alternative is, of course, that once the tax is authorized for the purpose of funding the stadium, the politicians find alternative purposes for the funds after the stadium financing is complete. So the tax, once enacted, may never be repealed. In Seattle, a 2011 bill proposed extending the taxes used to pay off the Kingdome and its

replacement, Qwest Field, as well as Safeco Field. Proposed uses of the funds included an expansion of the convention center and funding arts programs. Naturally, opponents of the extension contended that when the taxes were enacted in 1995, the legislature committed to the taxes expiring when the stadium debt was retired. In Wisconsin, the special tax to fund the Lambeau Field renovations had raised enough money to pay off the associated debt in 2011. The tax continued on, generating revenues dedicated to covering maintenance costs for the field through the end of the Packers' lease in 2031. Funds for that obligation were met in March 2015, yet the tax continued until September 30, 2015. Now there is a debate on how to distribute the excess revenues collected via the tax. In the Milwaukee area, the five-county taxing district that has financed the MLB Miller Park is anxious that the tax might be extended to help finance a new arena for the NBA Bucks; state legislation was proposed in 2013 that would sunset the sales tax used to finance the baseball stadium.

The second temporal dimension of the taxes concerns retirement of the debt. Some stadium and arena debt is paid off before the term of the initial bonds. Taxes and other revenue sources are such that the local government is able to retire the bonds before they reach maturity. For example, debt used to construct the ballpark in Arlington in the early 1990s for the Texas Rangers, was paid off 10 years early. In contrast, some debt exists beyond the life of the facility whose construction it funded. Giants Stadium, in New Jersey, was demolished to make way for a new stadium while $110 million in debt incurred for it remained outstanding. The Kingdome in Seattle was demolished in 2000, yet in 2010 there was still $80 million in debt to be paid. Looking at Wisconsin again, in 2014 the Milwaukee Bucks began pushing for a new arena while $20 million of debt on their existing arena was still outstanding.

TAX INCIDENCE

So far, the discussion has focused on the types of taxes used to finance a new stadium and the geographic and temporal reach of these taxes. In this section, the analysis turns to the incidence of the taxes. We can discuss this either philosophically or empirically. Philosophically, the issue is who should pay, a normative question. Empirically, the question is who does pay.

The normative question often focuses on whether the tax should be designed based on the ability-to-pay principle or on the benefit principle. According to the former principle, the tax system should levy greater taxes on individuals with greater income or wealth. Unfortunately, the ability-to-pay principle does

not offer guidance on the precise relationship between an increased ability to pay and the actual level of a tax. For example, if income rises by 10 percent, the principle is silent on whether taxes paid should rise by less than, exactly, or more than 10 percent. In each case, taxes rise with income, satisfying the definition of ability to pay.[6] A tax designed under the benefit principle will collect tax payments that increase with the size of the benefits generated for the taxpayer by a publicly provided good or service.[7]

Consider an individual wealthy taxpayer who is uninterested in sports but is a devotee of the theater. Under the ability-to-pay principle, the wealthy theater-lover would pay a high level of taxes to support construction of a new stadium, even though he or she may never set foot in the venue. The same individual would pay nothing toward the stadium under the benefit principle of taxation. By contrast, a low-income sports fan will pay little under the ability to pay principle but may pay a large sum under the benefit principle, though that will depend upon how the taxes are collected. Given the normative nature of this debate, different people can reasonably come to different judgments on this issue.

The empirical question about who actually pays the tax centers not on who "writes the check" for the taxes but instead on who is made worse off by the taxes used to finance the facility and how much worse off those individuals are. Our focus here is on taxation, but it is also important to consider the incidence of any benefits from the public-sector funding of stadium construction. Siegfried and Peterson (2000) find that individuals who purchased season or single game sports tickets have income on average 59 percent larger than individuals who do not purchase tickets. The benefits of the stadium subsidies thus seem to redound more so to wealthier individuals. If the taxes fall on the same people, the situation is similar to taxation under the benefit principle. Of course, the individuals in the stands and those who pay the taxes may not be the same people.

The incidence of the taxes used to finance sport facility construction is difficult to determine in a general way because of the variety of methods of raising the revenues. What is clear is that the extent to which it is fans, the general population, franchise owners, or players is determined entirely by the price elasticities of supply and demand. The more elastic demand is, for a given elasticity of supply, the smaller is the share of the burden on consumers. The less elastic is demand, the more the tax falls on the consumers.

The general sales tax is regressive, meaning that those with lower incomes pay a larger share of their income in sales tax than do those with higher

incomes. For example, the Institute for Tax and Economic Policy (2015) reports that the share of income paid in sales taxes by the bottom 20 percent of the income distribution is nearly 8 times the share paid by the wealthiest 1 percent. Families in the middle of the income distribution pay about 5 times the share of their income compared to the wealthy. Consequently, to the extent that the new stadium financing comes from sales taxes, the burden of financing the subsidies falls more heavily on the poor than on the wealthy. The degree to which this is true depends significantly on the sales tax base. For example, some states exempt food purchases from the sales tax. If food makes up a larger share of the budget of the relatively poor than of the relatively wealthy, then this exemption means the burden of the sales tax on the poor will be smaller than under a general sales tax.

Taxes that apply only to tickets or to merchandise purchased inside the stadium clearly burden the relatively wealthy more than the poor, since the evidence is that the wealthy are the individuals who attend the stadium events. However, if in-stadium purchases are price elastic, meaning that fans at the games choose not to purchase souvenirs or refreshments at the games, then it is also possible that the burden falls on the concessionaires and their employees.[8] If the employees are low-wage workers, then perhaps even the tax that hits only purchases inside the stadium will hit hardest on the relatively poor.

Even when taxes are targeted to a specific place, they are unlikely to do so. For example, the gross receipts tax used in Washington is, by law, imposed on firms with sales revenue over a specific level. This tax is very much like a general sales tax, but because of the exemption it has complicated incidence and distributional effects. As shown by Lawson (chapter 9, this volume) such a tax creates a wedge between the price that the consumer pays and the amount of money that the seller retains after paying the tax, with the former greater than the latter.

The gross receipts tax applies a specific tax rate to the gross receipts of the firm, which is ultimately no different than a sales tax on each individual transaction. Therefore, just as under a sales tax, the gross receipts tax creates a wedge between the price paid and the price kept by the seller. It is straightforward to show that a sales tax and a gross receipts tax have identical incidence effects if $T = t/(1 - t)$, where T is the sales tax, and t is the gross receipts tax. If a gross receipts tax was 4 percent, then the incidence would be the same as a sales tax of 4.1 percent. Thus, if a gross receipts tax was chosen somewhere close to the previously prevailing sales tax, lawmakers might think they are taxing business

under the gross receipts tax, but they are likely taxing both business owners and consumers.

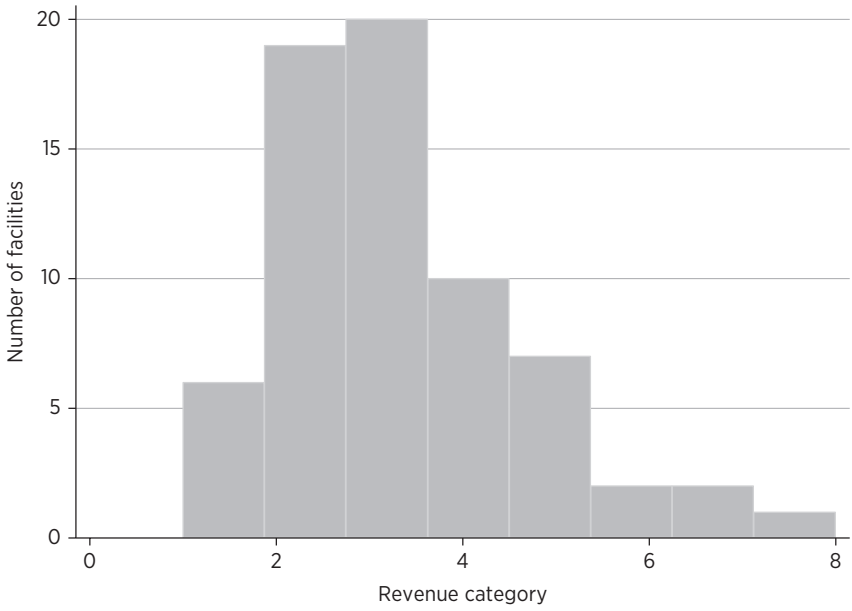
The last issue we consider regarding the incidence of the taxes used to finance stadium subsidies is what is often termed "tax exporting." Tax exporting occurs when those who bear the burden of a tax live or work outside the jurisdiction imposing the tax. The use of hotel and rental car taxes to finance stadium construction is an example of exporting the tax burden to nonresidents who choose to stay at local hotels or rent cars. It is likely that nearly all people who rent rooms in hotels or who rent cars are visitors to the city. If these travelers cannot change anything about their travel, including consuming in the so-called sharing economy by renting housing or transportation from individuals who do not pay taxes, then these individuals rather than local citizens bear the burden of the hotel and rental car taxes. If the travelers simply choose some other city as their destination, then the burden of the taxes falls on all local businesses and their employees, and the lost revenues could potentially require the borrowing government to shift resources from elsewhere to service the stadium debt.

TAX REVENUES

Knowing precisely how much revenue each of the taxes generates is difficult. It is possible to identify how much each was intended to collect, as these amounts are often part of the legislation enabling the taxes or establishing the stadium subsidy. Based on the data from Long (2002), we have generated histograms depicting the distribution of tax revenue obligations created by various stadium funding agreements. Revenue totals were classified as 0 if the plan did not include revenues from a specific tax, 1 for revenues less than $10 million (all figures are in 2001 dollars), 2 if between $10 and $50 million, 3 if between $50 and $100 million, 4 if between $100 and $150 million, 5 if between $150 and $200 million, 6 if between $200 and $250 million, 7 if between $250 million and $300 million, and 8 if more than $300 million. Many stadium financing plans omit one or more of the taxes enumerated above, resulting in many categories with totals of 0; the histograms omit these categories.

Figure 1 shows the distribution of revenue intentions for general revenues. Of the ninety-nine facilities in operation in 2001, thirty-two of them had no plan to rely on state or local government general revenues for financing. Half, forty-nine, had general revenue expectations above $10 million but below

Figure 1. Distribution of General Revenue Obligations



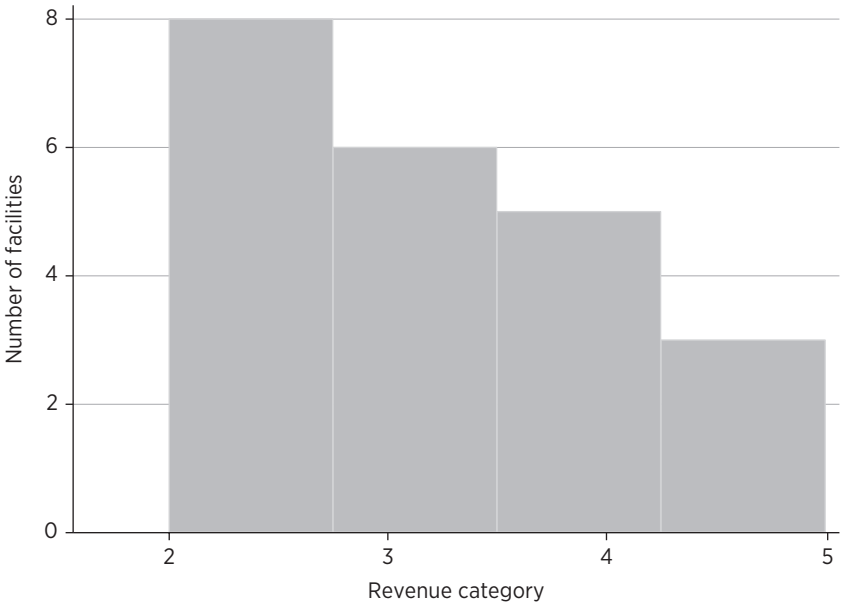
Source: Derived from Long (2002).

Notes:
1 = less than $10 million
2 = between $10 and $50 million
3 = between $50 and $100 million
4 = between $100 and $150 million
5 = between $150 and $200 million
6 = between $200 and $250 million
7 = between $250 and $300 million
8 = more than $300 million

$150 million. Figure 2 reports the distribution for lease revenues. Only twenty-two of the ninety-nine financing arrangements required the tenant teams to pay rent to the city for the privilege to play in the venue. All expected lease revenues covered less than $200 million of stadium debt.

The distribution of expected sales tax revenues is reported in figure 3. Only fifteen of the ninety-nine stadium financing agreements included sales tax revenues. Hotel and car rental taxes are in figure 4. As can be seen, seventeen of the ninety-nine financing agreements included hotel and car rental taxes. This number is somewhat surprising, given the predilection of public officials (and taxpayers) to express the desire to export the funding of stadiums (and other projects) to nonlocals. Figure 5 shows that only nine of the 99 financing agreements implemented a so-called sin tax on alcohol, tobacco, or lottery sales. It appears that the actual financing agreements are somewhat different

Figure 2. Distribution of Lease Revenue Obligations



Source: Derived from Long (2002).

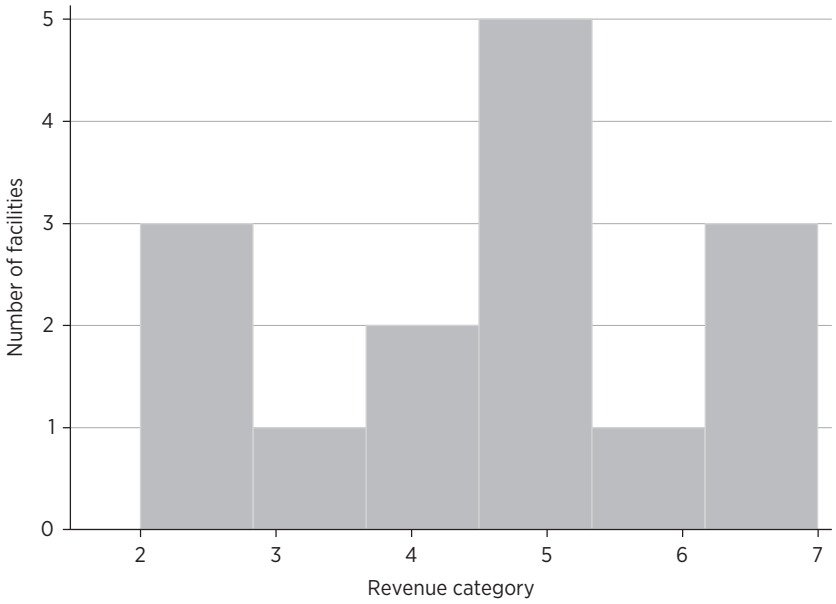
Notes:
1 = less than $10 million
2 = between $10 and $50 million
3 = between $50 and $100 million
4 = between $100 and $150 million
5 = between $150 and $200 million
6 = between $200 and $250 million
7 = between $250 and $300 million
8 = more than $300 million

from the rhetoric used by local politicians and team owners when pitching the agreement. This might reflect the hesitancy to implement taxes that are dedicated to the specific stadium project.

CONCLUSION

Taxes used to service debt incurred to publicly subsidize stadium and arena construction in the United States take a number of forms. Some taxes are quite explicit, like an increase in the local sales tax, whereas others might be less obvious, such as taxes on gross business receipts. Furthermore, property tax exemptions are most often not explicit budget items and therefore can be easily hidden from the general public. Public subsidies for stadium construction are almost always financed with the broadest tax base possible, including those

Figure 3. Distribution of Sales Tax Revenue Obligations



Source: Derived from Long (2002).

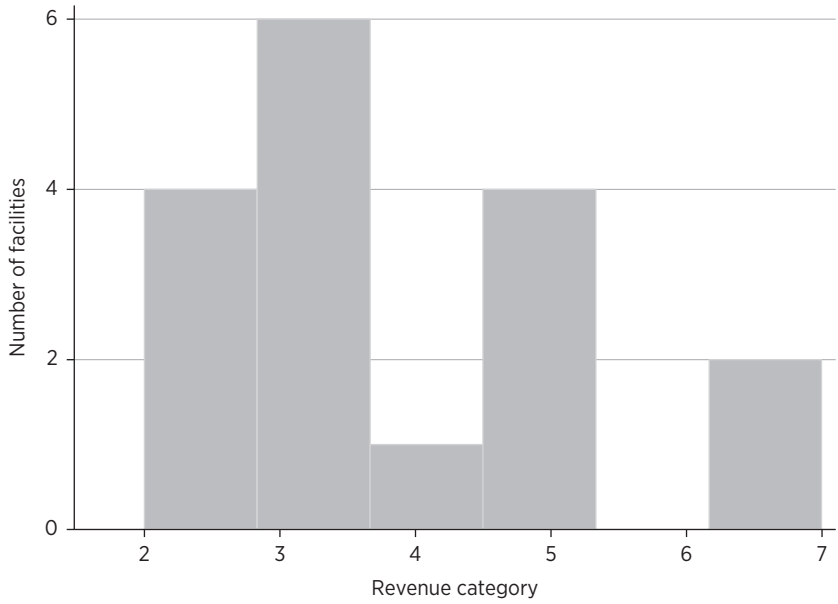
Notes:
1 = less than $10 million
2 = between $10 and $50 million
3 = between $50 and $100 million
4 = between $100 and $150 million
5 = between $150 and $200 million
6 = between $200 and $250 million
7 = between $250 and $300 million
8 = more than $300 million

who live and work in the city or state that is financing the subsidies and those who visit the city or state for business or leisure.

While the nature of the subsidies has evolved somewhat over the past 15 years, the wealth transfer they represent has not changed. Economists have searched for the combination of subsidies and taxes, stadium and city characteristics, and event and team characteristics that lead to a net positive present-value payoff for the local economies that support the subsidies. To date, although almost all stadium projects promise a net positive impact before the stadium is built, very few in reality have provided positive economic outcomes (see Coates and Humphreys 2008).

The incidence of any tax is difficult to determine, but it is likely that both consumers and businesses bear some of each tax that is imposed. To the layperson, the direct impact might seem obvious: tax payments are made to the

Figure 4. Distribution of Hotel and Car Rental Tax Obligations



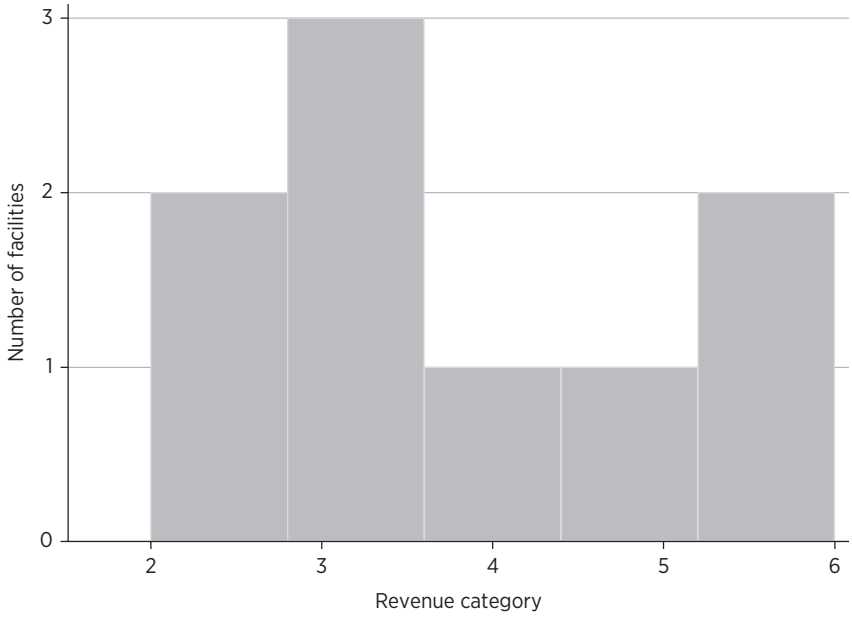
Source: Derived from Long (2002).

Notes:
1 = less than $10 million
2 = between $10 and $50 million
3 = between $50 and $100 million
4 = between $100 and $150 million
5 = between $150 and $200 million
6 = between $200 and $250 million
7 = between $250 and $300 million
8 = more than $300 million

local government to help service the stadium debt. However, economists point out that the true incidence of a tax is more nuanced. For example, if an increased hotel occupancy tax causes a multiday conference to choose another city in which to convene, the loss of money from the reduction of hotel room occupancy would reflect a cost of the tax that would not be obvious to the casual observer.[9] Additionally, the decision to subsidize stadium or arena construction carries with it implicit or explicit decisions about the fairness of the chosen sources of revenue.

Given these complications and assuming the stadium or arena will be built, principles for the design of a system of financing stadium construction are largely the same as those for the design of any tax system. The approach should seek to minimize the excess burden of the tax while simultaneously carefully considering the equity of the system of finance. For a general tax system that

Figure 5. Distribution of Alcohol, Tobacco, and Lottery Tax Revenue Obligations



Source: Derived from Long (2002).

Notes:
1 = less than $10 million
2 = between $10 and $50 million
3 = between $50 and $100 million
4 = between $100 and $150 million
5 = between $150 and $200 million
6 = between $200 and $250 million
7 = between $250 and $300 million
8 = more than $300 million

will finance a broad array of public services, it is perhaps sufficient to think about equity independent of the distribution of benefits from spending. After all, everyone receives benefits from government generally. But in the case of the stadium or arena, the beneficiaries from the subsidies are identifiable. Team owners, players, sports fans, and game attendees benefit; owners of other entertainment and leisure activity businesses and non-sports fans do not. In this case, designing the tax system along the lines of the benefit principle is natural both from an equity and an efficiency point of view.

An additional principle of tax system design is to minimize the administrative cost of collecting the revenue. This is not another way of describing the excess burden but is instead an issue of the cost of compliance with the law and its enforcement. The more complicated the tax (with exemptions, deductions,

and exclusions), the more costly for consumers and firms to comply and the more resources government must expend to verify and enforce the tax law. Closely related to minimizing the administrative cost is the consideration of transparency of the tax system. In a transparent system, people are better able to determine how much they are paying for the services they get. A sales tax surcharge on tickets to sports events is highly transparent and connects the tax payment to consumption. A general sales tax add-on is far less transparent; as a consequence, consumer decisions regarding public services are distorted.

Finally, the issue of taxation to subsidize stadium and arena construction must carefully consider all the costs and benefits of the facilities. For example, it is often argued that professional sports franchises provide significant community benefits in the form of civic pride and status of the city. Such benefits are public goods from which everyone in the city benefits and, consequently, everyone should share in the cost of provision. Leaving aside the possibility that such arguments overstate the size, and even existence, of such benefits, the presumption is that the marginal benefit of these public goods is positive to all citizens. That need not be the case, as many citizens may derive no happiness and feel no pride from having a professional sports team playing in a beautiful stadium. Efficiency requires that the marginal value to the community be equal to the marginal cost to the community, but fairness requires that individuals for whom marginal benefits are zero pay nothing, while those for whom marginal benefits are positive pay their marginal benefit value. To do otherwise is simply to forcibly redistribute income from those who would choose not to utilize the stadium in any way to those for whom the choice is the opposite.

NOTES

1. For example, Depken and LaFountain (2006) show that interest rates of US state bonds are positively related to existing debt level in the state, negatively related to state economic and population growth, and positively correlated with public corruption.
2. See chap. 9 in this volume by Robert Lawson for a specific discussion on the tax incidence of gross receipt taxes.
3. In chap. 7 of this volume, Todd Nesbit discusses the incentive to substitute for items of higher quality in the case of per unit taxes, whereas ad valorem (percentage of the price) taxes are argued to impose no such substitution in quality.
4. In chap. 2 of this volume, Justin Ross discusses various tax principles, including the benefit principle.
5. See Kenyon and Langley (2010) for more detail on PiLoTs in the context of not-for-profits.
6. In the first instance, the tax is regressive; in the second, it is proportional; in the third, it is progressive.

7. The benefit principle is agnostic about whether the increased taxes are regressive or progressive. It is possible for those who pay higher taxes based on the benefit principle to actually have lower incomes than those who would not pay based on this principle. For example, if a low-income family buys tickets to the football game on which a tax surcharge is placed while a high-income family watches the game at home, the former will pay more taxes than the latter.
8. Unfortunately, detailed data on concession sales are not available, and therefore any discussion about the price elasticity of demand for in-stadium purchases is purely speculative.
9. Ultimately, much of the tax incidence occurs in what Frederic Bastiat referred to as the "unseen" rather than in the "seen" (Bastiat [1848] 1995).

REFERENCES

Bastiat, F. [1848] 1995. "What Is Seen and What Is Not Seen." In *Selected Essays on Political Economy*, edited by G. B. de Huszar. Irvington-on-Hudson, NY: Foundation for Economic Education.

Coates, D., and B. R. Humphreys. 2008. "Do Economists Reach a Conclusion on Subsidies for Sports Franchises, Stadiums, and Mega-Events?" *Economic Journal Watch* 5 (3): 294–315.

Delaney, K. J., and R. Eckstein. 2003. *Public Dollars, Private Stadiums: The Battle over Building Sports Stadiums*. New Brunswick, NJ: Rutgers University Press.

Depken, C. A., and C. LaFountain. 2006. "Fiscal Consequences of Public Corruption: Empirical Evidence from State Bond Ratings." *Public Choice* 126 (1): 775–85.

Kenyon, D. A., and A. H. Langley. 2010. *Payments in Lieu of Taxes: Balancing Municipal and Nonprofit Interests*. Policy Focus Report. Cambridge, MA: Lincoln Institute of Land Policy.

Long, J. G. 2002. "Full Count: The Real Cost of Public Subsidies for Major League Sports Facilities." PhD thesis, Harvard University, Cambridge, MA.

Matheson, V., and B. R. Humphreys. 2009. "Pilots and Public Policy: Steering through the Economic Ramifications." *Villanova Sports and Entertainment Law Journal* 16 (2): 273–89.

Miller, W. S. 2012. "US Gaming and Sports Facility Financing." In *Sports Betting: Law and Policy*, edited by Paul M. Anderson, Ian S. Blackshaw, Robert C. R. Siekmann, and Janwillem Soek, 910–35. Netherlands: T. M. C. Asser.

National Sports Law Institute, Marquette University Law School. 2015. *Sports Facility Reports* 16, appendices 1–4. https://law.marquette.edu/national-sports-law-institute/sports-facility-reports.

Panyard, J. 2010. "$1 Billion and Counting for State's Taxpayer-Funded Stadiums." *Philadelphia Free Press*, September 22. http://weeklypress.com/billion-and-counting-for-states-taxpayerfunded-stadiums-p2168-1.html.

Siegfried, J. J., and T. Peterson. 2000. "Who Is Sitting in the Stands? The Income Levels of Sports Fans." In *The Economics of Sports*, edited by W. S. Kern. Kalamazoo, MI: W. E. Upjohn Institute for Labor Research.

Wisconsin Department of Revenue. N.d. "Stadium Sales and Use Tax." https://www.revenue.wi.gov/faqs/pcs/stad.html. Accessed 10/10/15.