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"We play the Star Spangled Banner before every game
—you want us to pay taxes too?" —*Bill Veeck*

The Stadium Gambit and Local Economic Development

BY DENNIS COATES AND
BRAD R. HUMPHREYS

IN RECENT YEARS SPORTS FRANCHISES HAVE FREQUENTLY used their monopoly power to extract rents from state and local governments. Typically, a franchise owner declares an existing facility unsuitable. Perhaps it is too old, or too

small, or lacks enough luxury boxes or suites to raise the necessary revenues to field a competitive team. The owner reminds the local government and business community that many other cities would like to have a team, and those cities would also build a new stadium. Cities all over the country, desperate for a professional sports team, gear up to convince the owner to move. Often, the promise of a new stadium and a sweetheart lease convinces the owner to stay, but some franchises move. Regardless of whether the team stays or goes, taxpayers foot the bill for a new stadium, improvements to an existing stadium, or infrastructure needed to make the new stadium or arena as attractive as possible.

The practice of professional sports profiting at the expense of taxpayers is not new. Before the stadium gambit there was the tax shelter dodge in which the purchase and reorganization of a team could generate up to five years of losses, which could be used to offset the new owner's income from other ventures. And there is the common practice of funding stadium construction using private-purpose local bonds because their interest payments are exempt from federal income taxation and they therefore carry a lower interest rate. The net effect is that the federal government subsidizes construction of the stadiums and arenas built by state and local governments for professional

sports franchises. Indeed, closing the loophole in the law that allowed this subsidy has simply been replaced by explicit state and local funding of stadiums that can be turned over rent free to franchises.

The recent spate of sweetheart stadium and arena deals is only the latest manifestation of owners of professional sports franchises getting richer at the public's expense. While not entirely new, this phenomenon has become front-page news across the country in recent years. Combined with the "build it and they will come" attitude of many city governments, the stadium gambit has led to a marked increase in new stadium and arena construction, franchise relocations, and negotiations between teams and local governments.

Despite the beliefs of local officials and their hired consultants about the economic benefits of publicly subsidized stadium construction, the consensus of academic economists has been that such policies do not raise incomes. The results that we describe in this article are even more pessimistic. Subsidies of sports facilities may actually reduce the incomes of the alleged beneficiaries.

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TRENDS IN STADIUM OWNERSHIP AND FRANCHISE VALUES

PUBLIC OWNERSHIP OF STADIUMS HAS INCREASED OVER time. In 1950, the National Basketball Association (NBA) and the National Football League (NFL) had substantial public ownership of stadiums or arenas—46 percent and 36 percent, respectively. Baseball's American League had 12 percent public ownership, whereas its National League and the National Hockey League had no publicly owned stadiums. By 1991, a minimum of 65 percent of facilities in any professional sports league were publicly owned. The high was 93 percent public ownership in the NFL. The median percentage of public ownership of stadiums and arenas was 75 percent.

During the time of increased public participation in stadium ownership, franchise values have also increased dramatically. In their book *Pay Dirt: The Business of Professional Team Sports*, James P. Quirk and Rodney D. Fort report that for teams sold in the 1970s and sold again during the 1980s franchise values rose at an annual rate of 12.5 percent in baseball, 12.3 percent in basketball,

ing to another city to persuade state and local decision-makers and politicians to provide them with lavish new stadiums and arenas at little or no cost. The owners appear to have profited handsomely from this stadium gambit, as suggested by the triple-digit increases in franchise values. In return, taxpayers receive nonpecuniary benefits in the form of increased civic pride and image, as well as other unmeasured consumption benefits associated with living in a city with professional sports teams. Taxpayers have also been told that new teams, stadiums, and arenas create jobs and raise tax revenues and income in their city.

DO PROFESSIONAL SPORTS PRODUCE ECONOMIC BENEFITS?

WHAT JUSTIFICATION EXISTS FOR THE GOVERNMENT subsidy of professional sports? The proponents of new stadiums and franchises are always quick to point out the economic benefits of the proposed facilities and teams. Cities throughout the country have struggled to attract or keep professional sports teams in recent years, and the idea that a team brings with it large economic gains invariably arises. Part of this process is the commissioning of economic impact studies that purport to show just how much benefit the city or region will reap.

More than 20 years ago, proponents of the half-billion-dollar Skydome in Toronto claimed that this facility would generate \$450 million in Canadian dollars in the first year of operation and create 17,000 jobs in the Toronto area. Half a decade ago, prospective NFL team owners in

Jacksonville, Florida, claimed that a new NFL franchise would generate \$340 million in new income in the city and create 3,000 jobs. In a recent case, the *Baltimore Sun* reported in April of 1999 that a new study supported tearing down the existing 36-year-old Baltimore Arena and replacing it with a new \$200 million dollar facility. This investment, the study claims, will raise city taxes by \$3.8 million and state taxes by \$6.3 million. In addition, the facility could generate up to \$100 million in new earnings for the citizens of the city of Baltimore.

Contrast these recent figures with information from the 1994 edition of the County and City Data Book. In 1990, the last year for which city and state tax collections are reported, Maryland and Baltimore collected \$3.4 billion and \$528 million in taxes, respectively. For the city, the tax gain from the replacement arena is, if the figures are correct, only about 0.7 percent of 1990 tax collections. For the state, the new tax collections are less than two-tenths of a percent of 1990 tax collections. Earnings in Maryland were \$68 billion and personal income in Baltimore was \$13.9 billion. Projected earnings from the arena are about 0.15 percent of state earnings for 1990 and about 0.72 percent of Baltimore's total personal income. Although the absolute num-

Franchise owners have used the threat of moving to another city to persuade state and local decision-makers and politicians to provide them with lavish new stadiums and arenas at little or no cost.

and 11.5 percent in football. For teams sold twice during the 1980s, the rates of increase were 23.5, 50.2, and 19.2 percent, respectively.

The increase in the value of franchises has shown no sign of slowing in the 1990s. For example, the franchise fees charged for expansion teams in the 1990s are large and rising rapidly. In 1992 the Colorado Rockies and Florida Marlins paid \$95 million in expansion fees to join major league baseball. In 1997, the Arizona Diamondbacks and Tampa Bay Devil Rays paid \$130 million. That is about a 37 percent increase in five years, or about 7.4 percent per year. To (re-)join the NFL, the Cleveland Browns paid an expansion fee of \$530 million in 1998; the newly awarded franchise in Houston agreed to a \$700 million fee, just a 32 percent increase in one year. But the most extreme case of expansion price inflation occurred in the NBA. The fee paid for expansion by the franchises in Minneapolis and Orlando in 1989 was \$32.5 million; for Toronto and Vancouver, which joined the league in 1995, the fee was \$125 million. That works out to about a 285 percent increase in just six years, or about 47 percent per year.

The owners of franchises in monopoly professional sports leagues have used the real or implied threat of mov-

bers seem large and impressive, they are small compared with the existing tax revenues and local economy, even if one grants that the proponents' estimates are correct.

THE FLAWS IN ADVOCACY STUDIES

THERE ARE STRONG REASONS TO DOUBT THE ACCURACY OF the estimated benefits claimed by economic impact studies. These impact studies rely upon input-output models of the local or regional economies into which the team and its new stadium will be placed and estimate the economic impact prospectively. These studies ask the question: what will happen if a new franchise and stadium enter this community? The results of these studies invariably reflect the desires of those who commission them, and advocates of stadiums and franchises typically produce impact studies that find large economic impacts, translated as benefits, from building a stadium or enticing a team to enter the city.

The Mythical Multiplier The methodology used by impact studies has been criticized on a variety of grounds. All impact studies use multipliers to estimate the effect of each dollar spent directly on sports on the wider local economy. Critics argue that at best the multipliers used in prospective impact studies overstate the contribution that professional sports make to an area's economy because they fail to differentiate between net and gross spending and the effects of taxes. In computing the benefits of the investment in a stadium, the appropriate focus is on net benefits, that is, on benefits that would not have occurred in the absence of the stadium. Impact studies rarely consider this issue. One could think of this concern as the substitution effect. Specifically, because of sport- and stadium-related activities, other spending declines as people substitute spending on one for spending on the other. If the stadium simply displaces dollar-for-dollar spending that would have occurred otherwise, then there are no net benefits generated. To consider the spending on stadium- and sport-related activities as all benefits is, therefore, to widely overstate the value of the investment. A key issue for getting the right sense of the value of the stadium investment is, consequently, how much of stadium-related spending substitutes for otherwise intended spending and how much is net gain in spending.

An important question related to the size of these substitution effects, and on the appropriate size of sports spending multipliers, is the size of the relevant geographic area. A stadium or arena will have more added effects on a very narrowly defined community than on a largely encompassing community. The reason for this is that the more narrowly the host community is defined, the more of the spending at the stadium and the nearby restaurants, bars, and hotels will come from outside the community. However, that spending will come largely at the

expense of the home communities of the fans that travel into the stadium from outlying areas. The substitution effect for the broadly defined area is quite large, but for the narrowly defined stadium community it is much smaller. What this points out is that stadiums and sports teams may be a tool for redistributing income in which the people from suburbs subsidize businesses in the city.

Efficiency Is Irrelevant Impact studies typically do not address alternative uses of public funds. Indeed, politicians often seem to think that the means of financing the stadium generates free resources that have no alternative uses whatso-

A stadium is a public investment in real capital. As such, the rules for sensible public investment apply to stadium finance as much as they apply to public provision of highways, schools, and airports.

ever. For example, when the state of Maryland discussed plans to lure the Cleveland Browns to Baltimore, they made clear that part of the funding for the construction of a new stadium would come from the state lottery. In state senate hearings on the issue, it was pointed out that lottery funds were essentially constant in recent years and that they were already dedicated, at least in part, to paying off the bonds issued to finance Oriole Park at Camden Yards. If lottery funds did not grow, then to add the financing of the football stadium would require that the state dip into general tax revenues either to pay interest on the baseball stadium-related bonds or to spend on the other public services supported out of lottery revenues. Alternatively, the state could choose to stop supporting other public services at all. The senators dismissed this concern out of hand. As the example makes clear, the revenues have opportunity costs.

But the issue is more than simply that there are alternative uses of the taxes used to pay for the stadium. The fundamental issue is that a stadium is a public investment in real capital. As such, the rules for sensible public investment apply to stadium finance as much as they apply to public provision of highways, schools, and airports. Specifically, the key is comparing the return on the investment in the stadium with the return on the same dollar investment in any alternative public use, including tax reduction. Efficient use of public resources requires that any given funds go into the uses that provide the highest return. This, of course, makes estimation of the return on the stadium and other investments very important. But measurement of these returns is complicated by the fact that there are substantial services of the stadium and sports franchises that do not pass through the marketplace.

Let Them Eat Civic Pride Stadium and team advocates, for example, raise the issue of civic pride and the image of cities. According to this logic, only cities with professional sports teams are truly world class. The gain in civic pride is, of course, very difficult to measure. The benefits that accrue to individuals who never or rarely attend games at the stadium but who derive enjoyment from following the team in the newspaper or via the radio and television broadcasts are also difficult to measure. Such benefits are the result of an externality, a good or service provided by one individual or group that provides benefits to other individuals or groups and for which the latter provide no compensation to the former. The existence of these external benefits could justify some public participation in the provision of stadiums and sports franchises.

THE SORDID TRUTH ABOUT ECONOMIC IMPACT

IN STARK CONTRAST TO THE RESULTS CLAIMED BY MOST prospective economic impact studies commissioned by teams or stadium advocates, the consensus in the academic literature has been that the overall sports environment has no measurable effect on the level of real income in metro-

politan areas attracted a basketball franchise, 10 percent attracted a football franchise, and 7 percent attracted a baseball franchise; 2.5 percent built a new baseball stadium, 10 percent built a football stadium, 10 percent built a new combined football and baseball stadium, and 21 percent built a new basketball arena.

Quantifying the Sports Environment Because it is not clear whether pro-stadium studies claim that the stadium will raise the level or the growth rate of income, we focus on identifying factors that affected either the level or growth of income per person. Although attracting a new football team or building a new basketball arena might have had some effect on these variables, other factors certainly played an important role. Our approach is to quantify the sports environment, including the presence of franchises, franchise entry and departure, stadium construction and renovation, the location of new stadiums and arenas, and the "novelty" effect of a new stadium or arena for professional football, basketball, and baseball. We then estimate econometric models of the determination of the level or growth rate of income in metropolitan areas and include the variables reflecting the sports environment.

We take two different approaches to estimating the models. First, taking advantage of the time-series cross-sectional nature of our data, we are able to control for city-specific factors that affect income or income growth, including trend growth, the decline of rust-belt cities and booms in sun-belt cities, and the effect of the business cycle. The use of city-specific effects, and these other variables, means that we are able to make sure that the estimated effects

Unlike most studies commissioned by stadium advocates, the consensus in the academic literature has been that the sports environment has no measurable effect on the level of real income in metropolitan areas.

of the sports environment variables are not contaminated with other historical or location-specific influences on the economic vitality of the cities.

Many Sports, Many Cities The difference between the impact studies commissioned by teams or cities and the academic literature is more than simply prospective versus retrospective methodology. Academic studies consider a large number of metropolitan areas with major league professional sports over a long period of time and examine other factors that are likely to predict aggregate economic activity as well as a broadly conceived view of the sports environment. In other words, these studies look specifically for the net effect of the sports environment on the economic vitality of metropolitan areas.

Our research examines all 37 U.S. cities that had one or more professional football, basketball, or baseball franchises at some point during the 1969-1996 period. This represents the universe of cities with such professional sports franchises during this period. The sample contains a wide variety of franchise moves and new stadium and arena construction. Twenty-three percent of these metropoli-

tan areas attracted a basketball franchise, 10 percent attracted a football franchise, and 7 percent attracted a baseball franchise; 2.5 percent built a new baseball stadium, 10 percent built a football stadium, 10 percent built a new combined football and baseball stadium, and 21 percent built a new basketball arena.

Second, we use an event study approach to analyze the effect of professional sports on local economies. This method uses the sports environment variables as a means of explaining why a particular city differs from the average city. This technique is widely used to examine the effects of changes in laws or regulations on the market value of firms in the finance and regulation literature. This approach can also be used to examine the impact of professional sports on local economies. In this approach, one regresses the level of income in each city on the average level of income across all the cities and a set of dummy variables reflecting changes in the sports environment. If the sports environment variables are statistically significant, the difference between that city and the average of all cities is not purely random but is a function of its different sports environment. The main drawback to this approach is that city-specific variables cannot be used. That is why we place more reliance on the results of the first approach described above. But the event study is a viable alternative to the other econometric mod-

els we estimate, and the results of the event study approach serve as a check on the robustness of our other results.

Results Our results indicate:

- The professional sports environment in the 37 metropolitan areas in our sample had no measurable impact on the *growth rate* of real per capita income in those areas.
- The professional sports environment has a statistically significant impact on the *level* of real per capita income in our sample of metropolitan areas, and the overall impact is *negative*.

The presence of professional sports teams, on average, reduces the level of real per capita income in metropolitan areas. This result differs from much of the existing literature, which generally has found no impact at all. However, we used a broader and longer panel of data and a richer set of variables reflecting the sports environment than previous studies.

Because we developed a wide variety of measures of the sports environment in metropolitan areas, many of the individual elements have a positive impact that is offset by another element that carries a negative impact. For example, the arrival of a new basketball franchise in a metropolitan area increases real per capita income by about \$67. But building a new arena for that basketball team reduces real per capita income by almost \$73 in each of the 10 years following the construction of the arena, leading to a net loss of about \$6 per person. Similarly, in cities that have baseball franchises, the net effect of an existing baseball team playing in a 37,000-seat baseball-only stadium (the average capacity of the baseball stadiums in our sample) is a \$10 reduction of real per capita income.

The results from the event study regressions are similar: sports environment variables are correlated with negative deviation from the average level of per capita income. However, the size of the estimated negative effect of the sports environment on the level of real per capita income generated by the event study regressions is considerably larger than the size of the estimated impact from the other reduced-form econometric models. The impact of an existing baseball franchise playing in a stadium of average size is a reduction in real per capita income of over \$850 per year below the average level of income across the cities in our sample, based on the event study estimates. We tend to put more trust in the smaller estimated impact based on the reduced-form econometric models of income determination than in the larger impact implied by the event study regressions because the exclusion of city-specific trends

and other factors from the event study regressions may force the average income variable to carry too much of the explanatory weight in these regressions.

HOW SPORTS SUBSIDIES REDUCE INCOME

IF, AS PROSPECTIVE TEAM OWNERS, DEVELOPERS, AND politicians would have us believe, professional sports can be an important engine of economic growth, how can our estimates be correct? How can the professional sports environment reduce the level of real per capita income in a metropolitan area? A recently published volume edited by Roger Noll and Andrew Zimbalist (*Sports, Jobs, and Taxes*) contains a number of essays that examine in detail the relationship between professional sports and local economies. The essays in this volume suggest a number of possible answers to these questions, which fall into several broad categories.

The evidence suggests that attracting a professional sports franchise to a city and building that franchise a new stadium or arena will have no effect on the growth rate of real per capita income and may reduce the level of real per capita income in that city.

Substitution in Public Spending Public funds are often used to subsidize professional sports teams and the stadiums or arenas they play in. These public funds have alternative uses, such as maintaining local infrastructure; increasing the quality or provision of public health, safety, or education; and attracting new businesses to the area. The deterioration of local public capital or services could diminish the ability of the local economy to produce other non-sports-related goods and services, which in turn would reduce local income.

Substitution in Private Spending Households face budget constraints; they must meet their unlimited wants with a limited amount of income. The arrival of a professional sports team in a city provides households with a new entertainment option. Households that choose to attend games will spend less on other things, perhaps going out to dinner, bowling, or the movies. If the impact of each dollar spent on these forgone alternatives has a larger effect on the local economy than the impact of each dollar spent on professional sporting events, the local economy will contract and income will be lower. Why would the impact of each dollar spent going to a professional basketball game be smaller than the impact of each dollar spent on bowling? This could easily occur if the revenue

generated by the basketball team and arena, which in turn becomes the income made by the players and team owners, escapes the flow of transactions that make up the local economy to a greater extent than the income made by the owners and employees of the bowling alley or movie theater.

Compensating Differentials in Income Perhaps professional sports do not directly reduce the level of real per capita income in a metropolitan area. Instead, our results reflect a "compensating differential" related to the presence of professional sports in some cities. Residents of cities with professional sports teams derive nonpecuniary benefits from the teams' presence and, because of those nonpecuniary benefits, are willing to accept lower income in return for living in these cities, other things being equal. This rationale implies that a recent college graduate might be willing to take a lower-paying job in a city with a professional sports franchise instead of a slightly higher-paying job in a city that has no professional sports franchises. The determining factor in the choice is whether the value of those nonpecuniary benefits is high enough. In other words, we may observe lower per capita income in cities with a professional baseball franchise because residents of those cities are willing to accept lower wages or salaries to have local access to a baseball franchise.

Negative Effects on Productivity Productivity, broadly defined as the amount of output that a worker with a given amount of capital, experience, and education can produce, is an important determinant of income and explains much of the observed difference in per capita income across countries. The factors that affect the productivity of workers are notoriously difficult to pin down precisely, but small differences in productivity can lead to large differences in per capita income when those differences persist over time. Workers in cities with professional sports teams may spend more work time discussing the outcome of last night's game, organizing an office pool, or other similar activities than workers in cities without professional sports teams. These differences could, over a period of many years, lead to differences in income per capita.

CONCLUSIONS

THE POLICY IMPLICATIONS OF OUR RESULTS ARE NO DIFFERENT from those of the previous studies that found no relationship between the professional sports environment and local economies. Still, they bear repeating. The evidence suggests that attracting a professional sports franchise to a city and building that franchise a new stadium or arena will have no effect on the growth rate of real per capita income and may reduce the level of real per capita income in that city. Yet government decisionmakers and politicians continue to try to attract professional sports franchises to cities, or use public funds to construct elaborate new facilities in order to keep existing franchises from moving. According to public finance theory, the deci-

sionmakers who attempt to attract a new franchise or build a new stadium or arena must value the total consumption benefits, including all nonpecuniary benefits, more than the total costs, including the opportunity costs. The total consumption benefits cannot be directly measured because of the nonpecuniary component of those benefits; in order for these policies to make sense, the total value of the consumption benefits associated with these policies must be larger than was previously imagined. However, regardless of the size of the nonpecuniary benefits, one thing is clear from the evidence on professional sports franchises: owners are reaping substantial benefits in the value of their teams because they are so skilled at the stadium gambit.

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