



Policy Report

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A Home Run for Cobb?

A Comprehensive Report on the Economic Impact of Truist Park and The Battery Atlanta on Cobb County



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Cover photo: Flyer placed on seats at Cobb County town hall meeting, November 21, 2013.

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Executive Summary

In 2013, Cobb County committed \$300 million in taxpayer funds to construct Truist Park to host Major League Baseball's Atlanta Braves. Stadium advocates declared that the project would be an economic "home run," which would stimulate sufficient commercial activity and tax revenue to more than cover the public expenditures. Though economic studies generally do not identify large economic impacts from sports stadiums, reports commissioned by stadium advocates projected substantial fiscal benefits. Supporters argued that the associated mixed-use development of The Battery Atlanta and its location within the metro-Atlanta area were novel attributes that would cause the Cobb stadium to succeed where others had failed.

This report provides a comprehensive retrospective assessment of the Truist Park development using publicly-available data and standard empirical methods to estimate its economic effects on Cobb County. The key findings are:

- Sales tax revenue increased following the stadium's opening; however, much of the spending associated with the stadium development appears to have come at the expense of existing Cobb businesses; thus, net gains to commercial activity have been small.
- Cobb property value growth, near the stadium and countywide, has been typical for the Atlanta region, which does not reflect net positive economic or social benefits from the stadium, nor has the stadium's presence expanded the County's budget through increased property tax assessments.
- Stadium-induced tax revenue has fallen well short of covering Cobb's public investment in the stadium, costing taxpayers nearly \$15 million per year to service stadium debt and fund operations, which translates to approximately \$50 per Cobb household.

Overall, Cobb's experience with Truist Park has been similar to most other stadium projects, which fail to generate large economic benefits to host communities.

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1

Introduction: *A Home Run for Cobb!*

*This is a home run for Cobb County, and I'm confident the people of Cobb will come to understand that.*¹

— Tim Lee, Cobb County Board of Commissioners Chairman

On November 11, 2013, the Atlanta National League Baseball Club (ANLBC) of Major League Baseball (MLB), more commonly known as the “Atlanta Braves,” announced that it was moving its operations from its downtown Atlanta stadium Turner Field to a new stadium in the suburban Cumberland Community Improvement District (CID) in Cobb County. The move was somewhat surprising given that Turner Field was not even 20 years old and had recently been renovated with a new scoreboard and expanded club seats. However, the team stated that transportation and parking issues, along with the inability to control surrounding development, motivated the team to seek a new location outside the City of Atlanta. The Cumberland location provided a large tract of undeveloped land at the junction of I-75 and I-285 that gives easy access from all parts of metro-Atlanta and is located closer to its fan base on the north side of the city.

As a part of the deal, Cobb County agreed to commit \$300 million in taxpayer funds to help construct a \$672 million ballpark—originally named SunTrust Park, but it would change its name to Truist Park in 2020. In return, the franchise committed to lease the

new stadium through 2046 (30 seasons). In addition, the stadium would be part of a \$400 million mixed-use development surrounding the ballpark that is owned and operated by the club. The entire campus, known as The Battery Atlanta or “The Battery,” was intended to create a year-round commercial destination featuring entertainment, retail, hotel, and residential establishments. The expectation was that fans in metro-Atlanta, and throughout the southeast, would flock to Cobb County to spend their money, generating substantial new economic activity.

Like many stadium boosters, Cobb County Board of Commissioners Chairman Tim Lee often described the deal as “a home run for Cobb County,” sometimes adding “a grand slam” to emphasize the anticipated economic impact.² He pitched use of taxpayer dollars to fund the ballpark as a sound business investment that was sure to pay off:

As an economic development project this small investment by the residents will bring back and yield a significant growth in our digest, in our sales tax, in our economic viability, it is a relatively small investment for a huge return not only for the Cumberland area but all of Cobb County.³

In addition, hosting an MLB team would improve residents’ quality of life, making Cobb County the “home of the Braves,” which would boost local esteem and make the county a more attractive place to live and work.

In an effort to demonstrate the projected windfall to Cobb taxpayers, the Cobb Chamber of Commerce commissioned several reports that projected economic impacts of the new ballpark. The annual forecasts ranged from \$5.7 million in total benefits to \$18.9 million to the County coffers, derived from The Battery and its “halo effect” of economic development on the surrounding area. However, these reports were prospective in nature, forecasting projections of what the stadium might produce over the course of its useful life going forward. While projections may seem appropriate in the early stages of development, they are not the best way to evaluate development effects once the project has operated for several years. Furthermore, commissioned economic impact reports of stadiums (and

other endeavors) tend to favor hopeful speculation rather than serve as reasonable objective forecasts.

Economists typically measure economic impacts from development projects using retrospective analysis, estimating effects from observed outcomes rather than relying on speculative projections. It has been eight years since the stadium was announced and five years since the ballpark hosted its first game. Enough time has passed to quantify the impact of the ballpark development directly: the projected “home run” development effects of the ballpark should now be obvious in recorded economic statistics.

This report presents estimates of the impact of Truist Park and The Battery based on Cobb’s post-stadium experience. The analysis is restricted somewhat by the onset of the COVID-19 pandemic—the 2020 MLB seasons did not include fans and 2021 attendance was limited—however, three full years of normal operations provide a sufficient history to quantify any development effects from the project.

Motivation

This report is an outgrowth of a research project that I had initially planned to publish only as a series of academic journal articles, which would be read mostly by other economists. But as my findings came together, I realized that my local familiarity with the intricate details of the development provided a novel opportunity to do more than just share my findings with an academic audience, which I have done and continue to do. Economists have published more than 100 studies in academic journals examining the economic impact of stadiums constructed over the past 50 years, reaching the near-universal conclusion that stadiums have limited economic effects on host communities, with actual returns falling well short of what was promised. Yet, municipal governments continue to fund stadium projects to support US major-league (and minor-league) sports teams.

Since 1970, state and local governments have contributed more than \$33 billion in taxpayer funds to construct major-league sports stadiums, and Figure 1 shows that public

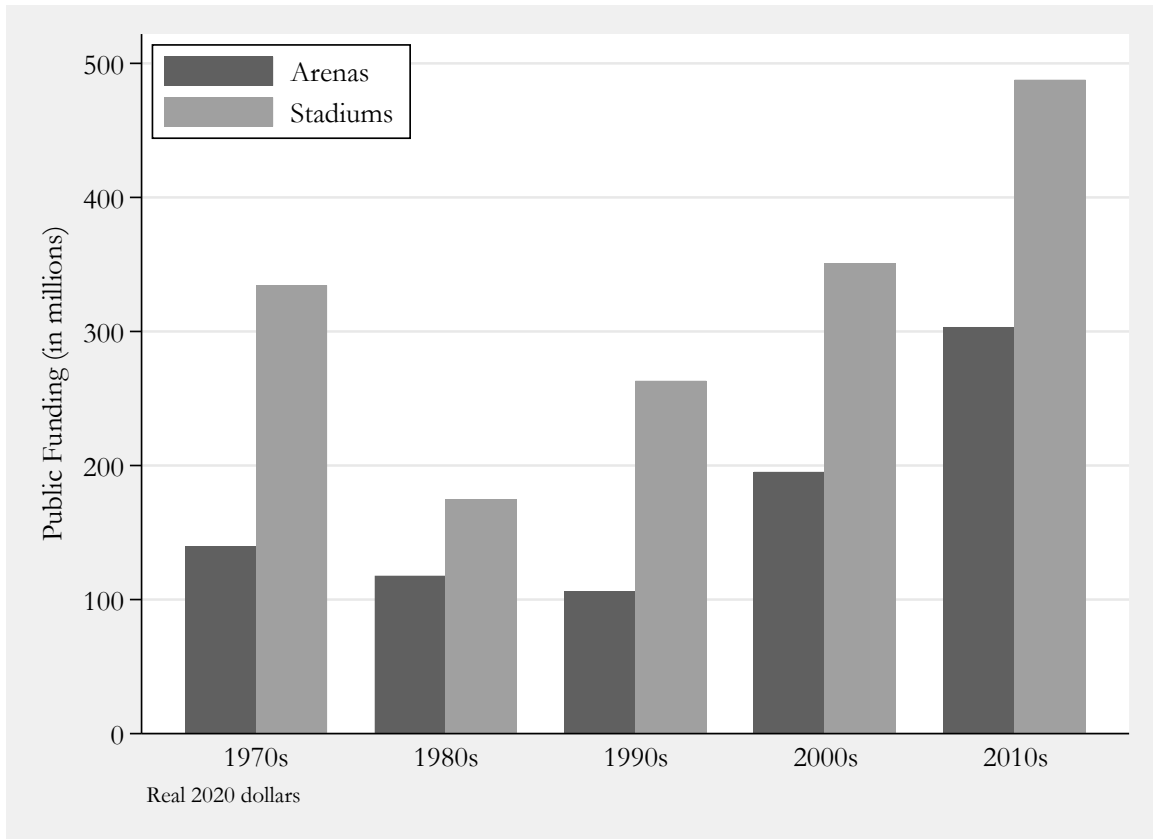


Figure 1: Average Public Funding of US Sports Arenas and Stadiums by Decade⁵

commitments are growing. In addition, the rate at which teams are replacing their host venues indicates that a new stadium construction wave is imminent, which heightens the policy relevance of stadium subsidies.⁴ This trajectory reveals an unhealthy diversion between expert recommendations and public policy.

Though economists’ research findings are consistent and unambiguous, they are not being heeded by policymakers. While there are many potential reasons for this disconnect, one possibility is that economists have not presented their findings in an accessible way. Economic studies published in academic journals are not widely read by non-economists, and they are often technical and full of economics jargon that is difficult to understand. Though economic experts on stadium impacts are often quoted in media stories about stadium projects—though not as often as they should be—there are few objective policy studies on the economic impacts of stadiums that are written for the general public and policymakers.

It is my hope that this document fills this communications gap with a thorough case study of a prominent stadium project, the facts of which ultimately demonstrate why stadiums are not wise public investments.

I have written this report for general readers who have an interest in the policy findings, with summaries and simplified descriptions of methods. In particular, I hope journalists who cover stadium and other economic development projects may find this case study useful. While I focus on a single stadium, the findings provide lessons that are applicable to other projects.

The presentation is intended to be transparent to build confidence in my objective approach and demonstrate the credibility of my research findings. This is in contrast to commissioned advocacy studies that often present findings justified by dubious multipliers and black-box computer programs with vague explanations. I want to assure readers that the methods employed are sound and permit them to verify external sources easily; therefore, I include citations to all references, with supplementary documentation and further descriptions included in endnotes, which link to full bibliographic references. Readers may click on hyperlinked notes in the text, which ultimately lead to primary sources outside this document. I also include appendixes with further information. Appendix A applies a set of objective criteria for evaluating stadium economic impact estimates to all studies of Truist Park, including my own. Appendix B provides a generalized summary of the synthetic control method, which is an important empirical technique that I use for estimating ballpark impacts.

As an economist, baseball fan, and Cobb County resident, I have been an active participant in discussions regarding the economic impact of this stadium development since the project was announced, often expressing skepticism regarding the touted optimistic expectations. For this, I have been chided sometimes as a cynic who has unfairly criticized the stadium. While it is appropriate to describe my expectations regarding the economic development effects as pessimistic, my views have always been informed by the large volume

of research findings that sports teams and venues do not have large economic impacts on host communities. Some commenters have dismissed the results of my research because my empirical methods seem esoteric. For example, in response to my finding limited impacts from the stadium on local sales (see Section 6) former Commissioner Bob Ott commented, “A (economic) model is one thing. But I’m looking at what’s really there.”⁶ This criticism is naïve and misplaced, because *I am looking at what’s really there*. Simple comparisons of average trends do not indicate large economic impacts from the stadium, and the County’s own numbers show that the County is paying more to fund the stadium than it receives in revenue from Truist Park and The Battery. There is nothing modeled or concocted in these data, which show little impact on economic activity.

When I apply complex empirical methods, I do so to filter out confounding factors that might obscure effects from being seen in simple comparisons, especially in Cobb’s \$57 billion economy. These methods were developed by leading empirical researchers and are used widely by economists to identify nuanced effects that might be missed in aggregate economic data. My descriptions of findings and methods are far more transparent than what has been presented in existing commissioned studies, which Ott has touted as compelling evidence, despite their obvious errors. I have also subjected my studies to formal academic peer review, where they have been vetted by subject experts before being accepted for publication in academic journals with reputations for publishing credible research.

The reality is that the projected large impacts from the stadium are not observable because they do not exist, as much as Ott and other stadium boosters wish they did. I am willing to address all reasonable criticisms of my findings, but to suggest that my research—which I present openly and in great detail—should be dismissed because my methods are perplexing, unsound, or artificial is unreasonable.

Organization

The report is organized into sections presented in sequential order, but because readers may wish to skip to sections on particular topics, I include references to other sections and repeat relevant information throughout the document.

I begin by summarizing the project's details to familiarize readers with the stadium agreement in Section 2, explaining how the stadium is funded and examining the different revenue streams the County uses to fund its stadium obligations. Section 3 summarizes the large volume of research on the economic impact of sports stadiums, which underpins the consensus agreement among economists that professional sports teams and stadiums do not have large economic impacts on their host communities, and subsidized stadiums rarely generate sufficient returns to cover the costs borne by taxpayers. Though past studies of other stadiums provide a base of expectations, Truist Park's sports-anchored development The Battery and its location near a major highway junction provide some reason for optimism, which I consider in Section 4.

Section 5 reviews existing studies of the stadium development commissioned by the Cobb Chamber of Commerce, which projected substantial economic benefits from the stadium that have not materialized. I find the reports are short on details and use questionable methods, which generate dubious estimates that are not reliable. The reports err in several ways that are common in commissioned economic impact studies. They are not credible and should never have been taken seriously when presented.

The next three sections describe findings from my academic research of Truist Park and The Battery's impacts on Cobb County and Cumberland CID. Section 6 presents estimates of the stadium's impact on local sales through sales tax revenue collections. Though local sales increased after the stadium opened, the net gains have been small. The distribution of spending indicates that a large portion of spending at The Battery is reallocated from other county-level spending to the detriment of other local merchants. Section 7 examines the ballpark's impact on the area immediately surrounding the stadium development in the

Cumberland CID, where commercial effects should be the strongest. Cumberland’s commercial property values did not grow any more than other Atlanta-area commercial districts, which does not indicate strong economic development benefits. Section 8 further examines property values countywide, to capture not only prospective economic development benefits, but additional social benefits from enhancing the quality of life among Cobb residents. No impact on Cobb property assessment values is evident, which is not suggestive of substantial economic or social benefits; and from a practical standpoint, the lack of impact on property assessments means that the stadium is not adding to the County’s general fund through property taxes.

Section 9 presents a detailed cost-benefit analysis of Cobb County’s investment in the stadium, which is based on the findings in the preceding sections. The estimates indicate that the fiscal benefits of Cobb funding Truist Park fall well short of its cost to taxpayers, who are left to fund an annual revenue shortfall of nearly \$15 million, which translates to approximately \$50 per Cobb household per year. Section 10 concludes the report with a summary of overall findings and discusses the implications for Cobb and other local governments that may be considering funding stadium projects.

Summary

Commissioner Lee promoted Truist Park as “the single greatest economic development project in the modern history of Cobb County,” but rather than provide the economic home run that was promised, the returns more closely resemble a routine pop-fly.⁷ The stadium has not generated significant new economic activity and has yet to produce a positive return on investment for the County, which makes it like most other publicly-funded stadium projects: a net drain on the budget. While every stadium project may be unique in its own way, the economic impotence that Cobb has experienced with its advantageous location and ancillary development ought to be generalizable to other stadium projects under consideration throughout the country. Despite assurances that its attributes would guarantee that

“this one will be different,”—a common refrain among boosters of stadium projects around the country—the evidence is clear that Truist Park has failed as an economic development project. It is important that local leaders acknowledge the reality of the project’s negative returns and running deficits, and other communities should heed the lesson that Cobb’s experience provides.

2

Anatomy of the deal

It's like any organization or business or company, the more revenue streams you have, the safer you are rather than if you just had one or two, you know?⁸

— Tim Lee

On November 26, 2013, just two weeks after the move was announced to the public, the Cobb Board of Commissioners agreed to a Memorandum of Understanding (MOU) that created a public-private partnership between Cobb County and Atlanta Braves' corporate owner Liberty Media Corporation, and the final responsibilities were codified in a series of agreements approved in May 2014.⁹ The basic terms of the development deal obligated the County to fund the construction of a \$622 to \$672 million ballpark on behalf of the Atlanta Braves, with each party sharing part of the cost. Though the final cost of the stadium has never been confirmed publicly, comments by team and County representatives typically use the \$672 million cost figure, indicating that the final costs reached the maximum.¹⁰

Stadium costs

Up front, the club contributed \$280 million and the County agreed to cover \$24 million of infrastructure improvements (\$14 million from the County's general fund and \$10 million contributed by Cumberland CID), for a total of \$304 million in initial outlays. The County

borrowed \$368 million to cover the remaining costs: \$276 million for the County and \$92 million on behalf of the ANLBC, for which the team pays back the principal and interest with annual rent payments of \$6.1 million over the life of the deal. The County’s financial contribution is often misreported as \$392 million (or rounded to \$400 million) by conflating the total amount borrowed and initial public outlays, without accounting for ANLBC’s portion of the borrowing and annual contribution to debt service. Thus, the public contribution to the construction costs of Truist Park is approximately 45% of its officially-budgeted costs.

Since 1970, the average public contribution to stadium projects has been 60%; however, Figure 2 shows that the public share has declined over time to just below 50% in the past decade. While Truist Park’s \$300 million subsidy is considerable—nearly \$400 per Cobb resident in 2017—its public contribution as a share of construction costs is typical among stadiums of this era.

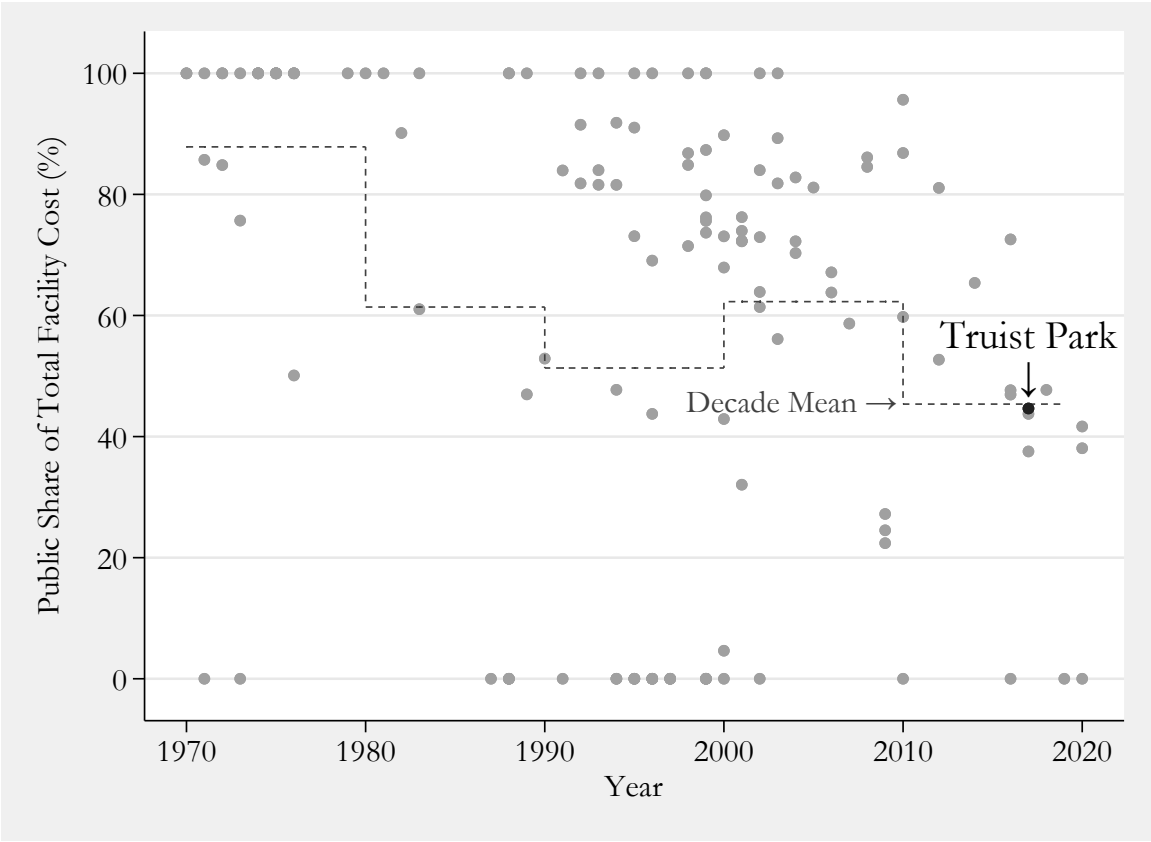


Figure 2: Public Share of Sports Venue Construction Costs (1970–2020).¹¹

Though Cobb’s contribution to stadium construction was capped explicitly at \$300 million by the development agreement—all cost overruns were stipulated to be the responsibility of the team—the County did end up exceeding this cap on projects outside the budget agreement. Urban planning scholar Judith Grant Long has documented that official reports of public stadium funding routinely omit less obvious taxpayer contributions, such as infrastructure improvements and municipal services, and the Cobb stadium is no exception.¹²

The final Development Agreement called for the County to devote \$14 million to transportation infrastructure improvements from a potential list of projects, which included an \$11 million pedestrian bridge over I-285; however, the County ended up constructing the bridge outside of this budget.¹³

In addition, Cobb reimbursed ANLBC approximately \$12 million for infrastructure improvements that were not part of the original deal; and, the total contribution was likely higher, though the exact amount is indeterminate. In 2017, ANLBC requested reimbursement of \$24 million for \$26 million of infrastructure costs surrounding the stadium that it had incurred, which it felt it was entitled to under the terms of the deal (\$14 million from the County and \$10 million from Cumberland CID). However, County Department of Transportation Director Jim Wilgus reported that the County had already funded nearly \$70 million in Cumberland-area infrastructure improvements, which satisfied the transportation improvement contribution in the Development Agreement. Ultimately, the County negotiated a settlement that reimbursed ANLBC and additional \$12 million.¹⁴

These infrastructure expenditures represent additional public funding beyond the original MOU. Thus, the total publicly-funded capital costs in its amended budget sum to \$323 million, which represents 46% share of the total costs. Public funding reaches 48% if all the disputed unbudgeted infrastructure costs are included.¹⁵ Table 1 presents the budgeted and unbudgeted funding allocations. These estimates present a range that demonstrates that the County’s public contribution was just under half of the stadium’s construction costs.

Cobb also covers a portion of ongoing operational expenses. As part of the agreement,

Table 1: Summary of Public and Private Stadium-Related Capital Costs

	Up Front	Borrowed	Total	Public Funding
<i>Original Budget</i>				
ANLBC	\$280	\$92	\$372	
Cobb County	\$14	\$276	\$290	\$290
Cumberland CID	\$10		\$10	\$10
<i>Amended Budget</i>				
Infrastructure Improvements	\$12		\$12	\$12
I-285 Pedestrian Bridge	\$11		\$11	\$11
<i>Unbudgeted</i>				
ANLBC	\$14		\$14	
Cobb County	\$34		\$34	\$34
Total Budgeted Costs (Public %)	\$304	\$368	\$672	\$300 (45%)
Total Amended Costs (Public %)	\$327	\$368	\$695	\$323 (46%)
Total Costs (Public %)	\$375	\$368	\$743	\$357 (48%)

Dollars in millions, rounded to nearest million.

each party contributes an equal amount to maintain a capital maintenance fund, which the team uses to fund regular maintenance and repairs. Lifetime combined contributions to the fund are anticipated to be \$70 million over 30 years, and the County’s total contribution is capped at \$35 million. Though contributions rise and fall over the course of the deal, the average annual contribution is \$1.2 million.

The County also took on the responsibility to fund police and traffic management costs during hosted events, which has approached \$1 million per year. Though the County did not initially budget for this expense prior to the park opening, in 2017 Cobb Board of Commissioners Chairman Mike Boyce declared, “It’s our responsibility under the agreement (with the Braves) to provide traffic management control around the stadium.”¹⁶ Though the source of this obligation was not immediately clear, Boyce was referring to Article 7.1.3 of the Development Agreement which reads, “The Parties agree to provide a safety plan to manage and coordinate ingress and egress into, from and around the Stadium Site and the Authority Parking Areas for all Stadium Events,” which the Board of Commissioners

oddly interpreted as a County obligation to fully fund traffic management, despite the fact that the text clearly describes a shared responsibility—and even then, only to plan, not fund.¹⁷ Furthermore, the Stadium Operating Agreement states, “During the Term, BSC [Braves Stadium Co., LLC] shall be responsible for providing reasonable security sufficient to control vehicular and pedestrian traffic within the Stadium Site and the Authority Parking Areas. BSC shall provide qualified security to protect the public health, safety and welfare at all Stadium events.” It further states, “The County shall reimburse BSC for any security provided at the County Events,” which implies that ANLBC was intended to be responsible for the costs of its own events.¹⁸ Thus, the public costs further exceed the obligations stated in the initial agreements.

Stadium funding

Cobb County funds its stadium obligations from several new and existing revenue sources, which I describe below.¹⁹

New Taxes

Cumberland Special District Taxes: The Board of Commissioners created two new special service tax districts that roughly follow the boundary of Cumberland CID to fund the ballpark. Tim Lee explained the rationale for the special service district taxes: “The bond debt will largely be paid for by the business community surrounding the project. This makes sense because they will also benefit by new business growth in the same area. I expect the (return on investment) for business will be visible in increased sales, higher occupancy levels and a new venue for commercial and retail space to complement the area.”²⁰

Special Service District 1 (SSD1): The County levies a \$3 per night fee on hotel stays in the district, which is dedicated primarily to paying off stadium debt. A portion of this fee was intended initially to fund a bus circulator to facilitate

transportation in Cumberland, particularly during stadium events; thus, the fee is sometimes referred to as the “circulator fee.” Ridership has been low and the service has scaled back.²¹

Special Service District 2 (SSD2): The County assess an added property tax on commercial property and multi-family housing in the district. It was initially set at 2.7 mills when it was introduced in 2014, but it was reduced to 2.6 mills in 2015 and 2.45 mills in 2016, where it has remained since.

Car Rental Tax: The County implemented new a 3% tax on car rentals, which is devoted solely to funding the stadium.

Reallocation of existing taxes

County Hotel/Motel Tax: A portion of the funding comes from the County’s existing 8% tax on room nights, which applies to all Cobb hotels. Funds leftover after covering debt service to the Cobb Energy Performing Arts Centre are then applied to the stadium debt. Hotel tax funds are restricted to tourism, and the leftover funds that used to go to promoting Cobb tourism are diverted to the stadium. This tax is in addition to SSD1.

General Fund: The County also reallocated existing park bond revenue generated from a 0.33 millage rate on Cobb property to fund the stadium. The bonds were approved in previous referendums to purchase parks that would be paid off by 2018. Extending the bonds offered the political advantage of providing additional government revenue without the appearance of increasing taxes; however, as a practical matter, not retiring a bond assessment that would otherwise end represents added costs to the taxpayers through forgone income or alternate government services.

Figure 3 displays the initial (2013) and revised (2015) allocations from funding sources as presented by the County, which shows a decrease in annual County costs from \$17.9

million to \$16.4 million. The \$1.5 million difference largely reflects lower borrowing costs than initially anticipated and not increased tax revenue or improved return on investment.²²

LOCAL		LOCAL	
COBB TRANSPORTATION CONTRIBUTION:	\$14 MILLION	COBB TRANSPORTATION CONTRIBUTION:	\$14 MILLION
CUMBERLAND CID CONTRIBUTION:	\$10 MILLION	CUMBERLAND CID CONTRIBUTION:	\$10 MILLION
LOCAL ANNUAL CONTRIBUTIONS:*		LOCAL ANNUAL CONTRIBUTIONS:*	
EXISTING HOTEL/MOTEL TAX	\$940,000	EXISTING HOTEL/MOTEL TAX	\$1.51 MILLION
REALLOCATION OF EXISTING REVENUES**	\$8.67 MILLION	REALLOCATION OF EXISTING REVENUES**	\$6.4 MILLION
RENTAL CAR TAX	\$400,000	RENTAL CAR TAX	\$600,000
CUMBERLAND DISTRICT TAX	\$5.15 MILLION	CUMBERLAND DISTRICT TAX	\$5.15 MILLION
CUMBERLAND DISTRICT CIRCULATOR FEE	\$2.74 MILLION	CUMBERLAND DISTRICT CIRCULATOR FEE	\$2.74 MILLION
**NO INCREASE IN PROPERTY TAXES TO COBB HOMEOWNERS.	\$17.9 MILLION PER YEAR	**PLANS CALL FOR NO PROPERTY TAX MILLAGE INCREASE FOR HOMEOWNERS	\$16.4 MILLION PER YEAR

(a) Initial funding projection (2013)

(b) Revised funding projection (2015)

Figure 3: Cobb County Projected (a) and Revised (b) Funding for Truist Park. Source: Cobb County Board of Commissioners (2018)

Table 2 lists the County’s actual annual revenues and costs since the stadium opened, which the Cobb Board of Commissioners reports in annual presentations. While there is some deviation, the revenues are similar to the initial projections. In 2017 the first ANLBC payment is for half the fiscal year, and 2020 revenues and costs were both impacted by the COVID-19 pandemic; thus, 2018 and 2019 likely reflect more typical years.²³

County and ANLBC officials have perpetuated a narrative that only the general fund contributions are a cost to Cobb taxpayers, and thus, by this benchmark, the tax revenue generated by the stadium is close to covering its costs. District 2 Commissioner Bob Ott declared that the stadium was already close to breaking even in 2018.

As we told folks that it would take a couple of years to kind of move onto the black side, what we’re seeing is that it’s going to basically be the second year of operation. ... As we move in that direction, ... the goal would be to reduce that portion that the citizens pay, that \$6.4 million, and have that covered by the other revenue streams so ultimately you get that \$6.4 million down to zero so the citizens are not paying anything to the stadium.²⁴

Table 2: Truist Park Annual Revenues and Costs

	2017	2018	2019	2020
<i>Revenue</i>				
Cumberland SSD1 (Hotel)	\$3,057,736	\$2,534,130	\$2,200,000	\$1,025,000
Cumberland SSD2 (Property)	\$5,319,413	\$5,150,000	\$6,470,000	\$9,293,021
County Hotel Tax	\$2,098,525	\$2,742,242	\$3,027,943	\$419,036
Car Rental Tax	\$514,908	\$656,603	\$870,719	\$607,548
General Fund Property Tax	\$6,400,000	\$7,599,908	\$6,136,958	\$6,503,913
Insurance Fund		\$55,856	\$71,361	\$71,361
ANLBC Rent	\$3,050,000	\$6,100,000	\$6,100,000	\$6,100,000
Total Revenue	\$20,440,582	\$24,838,739	\$24,876,981	\$24,019,879
Revenue from Taxes	\$17,390,582	\$18,738,739	\$18,776,981	\$17,919,879
<i>Expenditures</i>				
Debt Service	\$18,793,290	\$22,484,130	\$22,485,537	\$22,484,078
Capital Maintenance	\$1,200,000	\$1,230,000	\$1,260,000	\$1,290,000
I-285 Bridge (amortized)	\$169,655	\$169,656	\$169,655	\$169,655
Property Insurance	\$130,000	\$55,856	\$71,361	\$71,361
Police	\$841,398	\$899,097	\$890,428	\$4,785
Total Cost	\$21,134,343	\$24,838,739	\$24,876,981	\$24,019,879

Fiscal years from October 1 to September 30. 2017 revenue and cost as reported are not equal, and no explanation is provided. Source: Cobb Board of Commissioners (2018, 2019, 2020, 2021)

Three years later, Mike Plant predicted that stadium-generated tax revenue would cover the general fund obligation by 2024: “I believe ... by 2023, ’24, ... because of all the additional tax revenue we’re generating ... I think the county general fund commitment will be close to zero.”²⁵

These statements represent either gross misunderstandings or deliberate misrepresentations of the tax burden. That tax revenues from non-general fund categories are allocated to cover the County’s stadium funding obligations does not mean they are not a cost to taxpayers. After ANLBC’s annual \$6.1 rent payment, Cobb taxpayers are on the hook for the remaining stadium debt, which is backed by the full faith and credit of the County. The County is also responsible for other remaining expenses, which amount in total to about \$18 million per year. In order to fund these obligations, the County must allocate revenue from its tax base that could have been used for other government services or returned to local taxpayers to spend on other priorities. These taxes represent a real cost to Cobb tax-

payers, whether they come from the general fund or other sources, and should be viewed as such. Furthermore, there has never been any basis to suggest that the County's general fund commitment would fall to zero in the near future, as Ott and Plant have suggested (see Section 9).

For example, before the stadium was approved, excess hotel tax revenue was previously distributed to several tourism-related projects, such as parks and recreation, the Cobb Civic Center, and tourism promotion. The reallocation has resulted in a shortage of funding in areas that used to rely on this revenue source. In 2016, Cobb Travel & Tourism had to make a special request to the Board of Commissioners for \$40,000 from the general fund. This request was previously met from the hotel tax revenue bucket, which was out of funds as a result of the stadium obligation. Commissioner Ott commented at the time: "I don't see a whole lot of extra money to give around. There's a lot of people I've said no to that wanted money."²⁶

Also, the reason for taxing these particular areas is not well-justified by the distribution of benefits from the stadium. There is no clear connection between car rentals and the stadium. While local governments sometimes tax car rentals to target out-of-town visitors, few stadium patrons likely rent cars in Cobb and pay the tax. Nearby visitors drive their own cars. More distant travelers who fly to Atlanta for stadium events might rent cars at the airport, but the airport is not located in Cobb. Tim Lee justified the tax by stating, "There's a wide variety of people that rents cars," which, while true, is not a particularly compelling reason to tax car rentals.²⁷ Most Cobb car rentals are made by local residents experiencing car trouble—a group that is more deserving of a break rather than added taxes to fund a Major League Baseball stadium.

While the special service districts are close to the stadium, and some nearby property owners may experience some positive spillovers from the stadium's presence, it does not follow that the special district tax revenue derives from stadium-induced development or that district taxpayers are adequately compensated for the increased tax burden. *All* eligible

property in the district is assessed for these taxes, whether or not it is connected to, or benefits from, the stadium. This represents revenue that the County could tap for other funding obligations if it did not fund the stadium, and makes assessed property owners less likely to be supportive of future general tax increases to fund other priorities. While some spending at nearby businesses in the district may be induced by game- or Battery-related spending, most of it is not. Hotels in the district must remit the \$3 per night fee for all stays, not just those that are game-related. This is in addition to the five mills assessed on Cumberland CID property, which does not contribute to the annual funding of the stadium.

For example, the popular Cobb restaurant Pappasito’s Cantina lies one mile north of the stadium, just off I-75 at the Windy Hill exit (Figure 4). It is located within the Cumberland special service district boundary, and thus it pays the district property taxes in addition to its existing County and Cumberland CID property tax obligations.²⁸ The restaurant may benefit from additional customers on game days—its business may also lose customers to competing restaurants at The Battery—but most of its business derives from non-game activity. This is obvious because the restaurant existed for many years before



Figure 4: Cumberland Area around Truist Park

the stadium opened, and it continues to operate as a popular eatery for local residents and interstate travelers when Truist Park is not hosting games or other events. To not count the \$5,000 in additional taxes it pays annually to meet the special district assessment as a cost of the stadium is absurd. This tax cost is partially borne by the restaurant's owner, and some of it is passed along to customers through higher prices, which also results in some lost business.²⁹

It is important to note that though stadium funding comes from different revenue buckets, government funds are fungible and drawn from a common well of County taxpayers, which limits the availability of funds for other purposes. Because Cobb residents and businesses face higher taxes to fund the stadium, Cobb voters may oppose further tax increases, and stadium-related taxes could have been used to generate revenue for other purposes (e.g. roads, parks, public safety, etc.). Chairman Boyce illustrated the reality of the County's financial challenges when discussing the stadium, "Now that we've run out of all these buckets to raid, are you willing to pay what it costs to maintain a five-star county? What we have to show the taxpayer is have we turned over every single leaf to find every single savings that we can before we've asked you for more money."³⁰

Though the Board of Commissioners cannot reallocate funds from Cobb public schools directly, higher general fund taxes draw down revenue that might have been available for schools from their shared tax base of Cobb property owners. Higher County taxes make residents less amenable to tax increases from the Board of Education, which thus restricts funding available for schools.

In total, Cobb County has funded nearly half of the cost of Truist Park, and thus it is responsible for funding approximately \$25 million per year to meet its obligations. Some of this comes directly from the stadium tenant, but the bulk of funding comes from taxpayers. Stadium supporters have argued that the public funding represents an investment that will pay off through greater tax collections. Whether or not this is occurring is an empirical question that I examine in the remainder of this report.

3

What do economists know about the economic impact of stadiums?

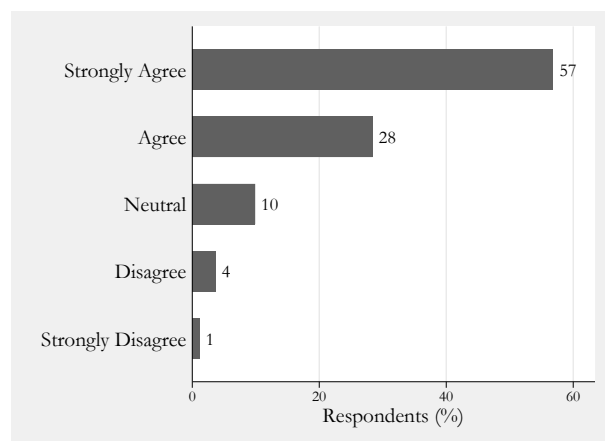
The large and growing peer-reviewed economics literature on the economic impacts of stadiums, arenas, sports franchises, and sport megaevents has consistently found no substantial evidence of increased jobs, incomes, or tax revenues for a community associated with any of these things. . . . If professional sports franchises and facilities do not have any important positive economic impact in the local economy, then subsidies for the construction and operation of these facilities are even more difficult to justify.³¹

Economists began studying the economic impact of sports stadiums during the 1990s' stadium construction boom, which relied heavily on public funding. Early researchers were motivated by claims of stadium subsidy advocates who presented privately-commissioned reports of suspect credibility, which projected substantial economic gains that varied widely. Despite the paucity of data and rudimentary statistical methods, the first economic studies found little evidence of tangible gains to metropolitan areas from constructing stadiums. As data became more available, and studies employed more advanced empirical methods, researchers confirmed earlier findings of economic impotence.

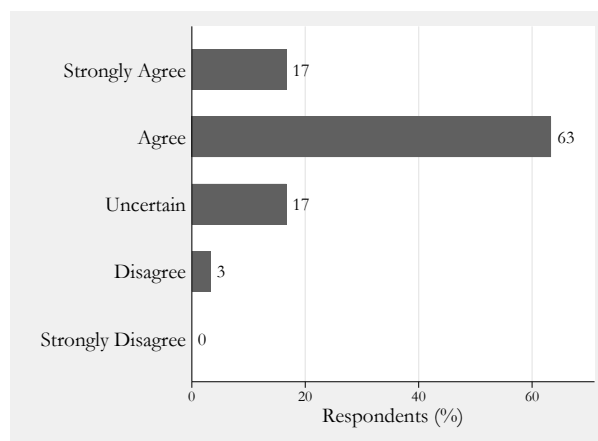
Over 30 years of research that observes multiple stadium projects, across various time periods, and use ever-improving empirical methods demonstrates that stadiums typically are not engines of economic development to host communities. A recent review of more than 120 published studies—conducted by economists Dennis Coates, Brad Humphreys, and me—reports the remarkable consensus of the findings:

*nearly all empirical studies find little to no tangible impacts of sports teams and facilities on local economic activity, and the level of venue subsidies typically provided far exceeds any observed economic benefits. In total, the concurrence of research findings demonstrates that sports stadiums and arenas are not an appropriate channel for economic development policy.*³²

Therefore, it is not surprising that economists largely agree that new stadiums constructed to host professional sports teams are not justified on economic development grounds. Figure 5 presents the results from two surveys of economists regarding the desirability of subsidizing professional sports teams and venues. In both surveys, at least 80% of economists



(a) Question: Local and state governments in the U.S. should eliminate subsidies to professional sports franchises.



(b) Question: Providing state and local subsidies to build stadiums for professional sports teams is likely to cost the relevant taxpayers more than any local economic benefits that are generated.

Figure 5: Economists’ Opinions on Sports Subsidies. (a) 2005 survey of American Economic Association. (b) 2017 survey of Chicago Booth’s Initiative on Global Markets panel of economic experts.³³

agree that these subsidies cost taxpayers more than the benefits they generate, or that these subsidies should be eliminated.

The lack of support for stadium subsidies among economists is further strengthened by a strong theoretical expectation that economic gains from stadium projects are inherently unlikely, which may seem odd at first glance. Stadiums are venues that host large crowds, where spectators spend considerable amounts of money on tickets, concessions, merchandise, and related entertainment. How does this highly-visible spending at sports events not translate into increased economic activity to the community? The answer is simple: sports-related spending primarily comes from reallocated local consumption. Though sporting events do attract spending, it mostly does not represent net new spending in the area. Instead, local residents transfer their consumption from other local entertainment options (e.g., restaurants, bars, movies, etc.) to the sports team, which competes with local merchants for customers. Thus, sports-related spending represents transferred wealth, rather than a windfall of new revenue for the host municipality. Stadiums provide competition for local businesses, rather than catalyzing more spending, which explains why multiplier ripple effects on the wider economy from stadiums, which are often assumed in commissioned economic impact projections (see Section 5), do not manifest in reality.

Where might stadiums have positive impacts?

The consistent non-findings of large regional economic effects have led economists to explore narrower channels through which stadiums might impact host communities. Subsequent studies have sought to identify more-localized development effects in the area immediately surrounding stadiums and difficult-to-observe non-financial social benefits.³⁴ While some studies have identified instances of positive effects in these areas, indicating that some public subsidies may be justified, many other studies also find zero and negative effects. Overall, the general findings of this research are best described as mixed. Even when positive benefits

are identified the magnitude tends to be too small to cover the public costs. I summarize the findings of these studies below.

Localized Neighborhood Development Effects Even if teams and stadiums have not been found to improve the economies of large cities or metropolitan areas, they may be able to influence development around the stadium. In some cases, gains such as revitalizing/creating business and entertainment districts may be desirable to citizens of the region. Businesses that are complementary to sports games and benefit from game-related activities may capture spending from the presence of a stadium, which benefits existing businesses of this type and may induce complementary establishments to move to the area.

While localized development effects from stadiums may be prevalent, they tend to be small and limited to establishments that complement sports consumption (e.g., restaurants and bars) in the immediate vicinity (less than two miles) of the facility. Economists have also identified negative impacts of stadiums on competing local entertainment establishments (e.g., movies, bowling, etc.) which serve as substitutes for sports attendance.³⁵ Sports stadiums may also have negative effects on neighbors. Non-complementary and competing businesses, such as commercial offices, retail shopping and other entertainment options, may be disrupted by congestion and crime, and thus leave the area.³⁶ The effects often differ by local characteristics, as some neighborhoods appear to be better suited for hosting sports events than others.

Social Benefits Though they are often touted as economic drivers, the returns to building sports stadiums do not have to be purely financial to be worthwhile projects. Perhaps residents value hosting teams as amenities like local parks or strong public schools, for which taxpayers consider the added cost to be a worthwhile expenditure. A professional sports team affiliation may also boost civic pride and promote a big-city image. In addition, a sports stadium may add new walkable space, events, and entertainment options that make the area a more enjoyable place to live and work.

Economists have taken two approaches to identifying these intangible social benefits. The first method uses survey-based methods to aggregate how much individuals value hosting professional sports teams. While these studies do identify positive non-use value from hosting teams, the estimated value amounts to only a small fraction (5 -15%) of typical subsidies provided to construct new stadiums.³⁷ The second method examines property values surrounding stadiums. If stadiums and teams have positive benefits on the community, like good public schools and government services, then it should manifest through increased property values. Overall, the evidence of stadium effects on residential property values is mixed, as studies have identified both positive and negative relationships stadiums and property values.³⁸

Summary of economists' research findings

In general, subsidizing the construction of sports stadiums to host professional sports teams has not been associated with positive economic impacts for local communities. Though economists have identified some positive benefits, any positive effects that stadiums might have on their surrounding community appear to be small and restricted to certain businesses in close proximity to the stadium. From a public policy perspective, this is problematic for justifying public subsidies, because sports stadium funding tends to come from a much wider tax base that does not necessarily benefit from the presence of a professional sports team. Thus, the ex-ante case for expecting a new baseball stadium to have positive economic effects on Cobb County is weak; however, the next section discusses several features of Truist Park that may make it more likely to succeed where other stadiums have failed.

4

Why might the Cobb stadium succeed when others have failed?

*Atlanta leaders had hoped for the same sort of “halo effect” when Turner Field was built in the mid-1990s. It never materialized. That neighborhood was shabby then and is shabby now. But things will be different here.*³⁹

— *Marietta Daily Journal*

Though economists agree that sports stadiums tend not to produce large economic gains, boasting about economic effects of a new ballpark is quite common among stadium projects, including the Atlanta Braves’ previous stadiums, as noted in the epigraph—see the end of this section for other examples. However, perhaps Truist Park possesses features lacking in other stadium projects that might allow it to succeed, which many stadium advocates have claimed. First, Truist Park is part of a mixed-use development that may attract more external commercial activity than typical stadium projects. Second, the stadium is favorably located to attract non-Cobb spending from Atlanta baseball fans.

Mixed-Use Development

During a town hall meeting soon after the stadium was proposed, a constituent asked Commissioner Bob Ott the following question: “What do you say to the taxpayers that say that the commission is turning a blind eye to 50 years’ worth of research, and to this issue whether or not taxpayer subsidies spur positive economic development that have almost all found that there is no appreciable economic development from sports stadiums, and that you’re doing this to benefit a very narrow group of well-heeled business owners in the area?” His response was described as follows, “Ott said he was well aware of the studies about stadiums and economic development, but what [taxpayers] should consider is that the Braves weren’t simply building a stadium. They were also building a \$400 million mixed-use development to accompany it.”⁴⁰

ANLBC CEO Mike Plant similarly made the case that Truist Park’s mixed-use development is a feature that most other ballparks lack. Rather than relying on an uptick in spending from hosting 81 games for six months of the year, The Battery is designed to be a commercial hub that attracts spending even when it is not hosting baseball games.

*[T]here’s a different expectation about the Atlanta Braves because the tired old story pontificated by certain professors is there’s been some carnage in these deals. There’s no doubt and no debate to that fact. [Truist] Park, as a standalone sports venue (without the mixed-use component), like every one of these, probably cannot pencil out financially. . . . we’re going to build a city and we’re going to create tons of jobs, tons of density and year-round tax revenues. And that’s what’s going to make this whole formula set a new standard and result.*⁴¹

Figure 6 provides an aerial map of The Battery, which shows the stadium and its ancillary development. The black line marks a rough outline of the boundary of the campus, though ANLBC does own parcels of land outside this area. The campus covers approximately 60 acres that houses restaurants, shops, offices, apartments, hotels, and parking



Figure 6: The Battery Atlanta

decks. Establishments are intermixed, but their concentrations are noted by color shading in the figure. Many of these establishments benefit from baseball games and other stadium events, but they also cater to customers at other times. Though the mixed-use portion covers the bulk of the campus, the stadium is the largest revenue generator by a considerable amount. Table 3 records how the stadium development has progressed since its inception.

Table 3: Timeline of Key Dates

Date	Event
<i>Announcement</i>	
November 11, 2013	Cumberland stadium project announced.
November 26, 2013	Cobb Board of Commissioners approves MOU.
<i>Opening</i>	
March 31, 2017	Truist Park hosts first exhibition game for season-ticket holders.
April 8, 2017	Truist Park officially opens to public with college baseball game.
April 14, 2017	Truist Park hosts first MLB game. Battery at 20% capacity.
April – July 2017	Three apartment communities in The Battery open.
December 2017	Omni Hotel opens. Battery 50% operational. ⁴²
2018 – 2019	Battery approaches full capacity operation. ⁴³
2020 – 2021	COVID-19 pandemic limits operations.

One useful attribute of the team being a corporate subsidiary is that it publicizes

useful financial information for stockholders. Liberty Media publishes ANLBC revenue from the stadium and ancillary development separately in its annual reports.⁴⁴ In 2017, when it grew from 20% capacity on opening day to 50% by the end of December, the development generated \$15 million of revenue.⁴⁵ During its two years of pre-COVID full operation in 2018 and 2019, the development generated \$38 million each year. From 2017 to 2019, the team averaged \$404 million per year from baseball revenue, which means the mixed-used development represents less than 10% of the franchise's total revenue. However, its baseball revenue comes from three sources: ballpark operations, broadcast rights, and shared MLB revenue streams. In 2020, when Truist Park hosted no games due to the COVID pandemic, baseball revenue declined to \$142 million; therefore, a rough estimate of revenue from annual ballpark operations is average baseball revenue (\$404 million) minus the revenue earned when the ballpark was not operational (\$142), which is \$262 million. That would mean that the mixed-use component of the development represents 13% of The Battery's revenue. However, some undetermined amount of broadcast and other revenue was also lost during the pandemic, so the percentage was likely a little higher.

By another metric, *Forbes* reports that the average MLB team derives 39% of its revenue from game day operations, which translates to \$158 million of the team's average baseball revenue. By this metric, the mixed-use development generated 19% of The Battery's revenue.⁴⁶ Though the exact share of revenues is indeterminate, reported revenues indicate the stadium contributes the bulk of The Battery's revenue—80% is a reasonable estimate, and it is likely responsible for at least 75% of the development's income.

In absolute terms, the \$38 million in reported revenue from The Battery's mixed-use component is a minuscule part of Cobb's \$57 billion economy. By comparison, the average Walmart store generated \$70 million in 2019, which means the mixed-use portion contribution is approximate to half a Walmart store.⁴⁷ Walmarts are not small operations, but store openings typically do not garner the attention or the size of subsidies that stadiums receive.⁴⁸ In addition, not all this revenue is new to the county (see Section 6).

Thus, the mixed-use component of The Battery generates a relatively small share of the stadium development’s revenues, which means the relevance of Truist Park’s ancillary development to its economic contribution may be less than it is often made out to be. To describe The Battery as “a city” is a fanciful exaggeration. Its overall impact may not be substantially greater than if Truist Park were a standalone stadium.

Location

Truist Park’s location on the edge of Cobb County, just across the Chattahoochee River from the City of Atlanta offers another source of optimism. It is not far from fans in northern Atlanta neighborhoods, and it may be more convenient than Turner Field to some Atlanta residents. When the stadium was announced, the team cited its desire to be closer to its fan base as one of its motivations, releasing a map of ticket purchasers concentrated on the north side of Atlanta.⁴⁹ Added spending from these non-Cobb patrons from other metro-area

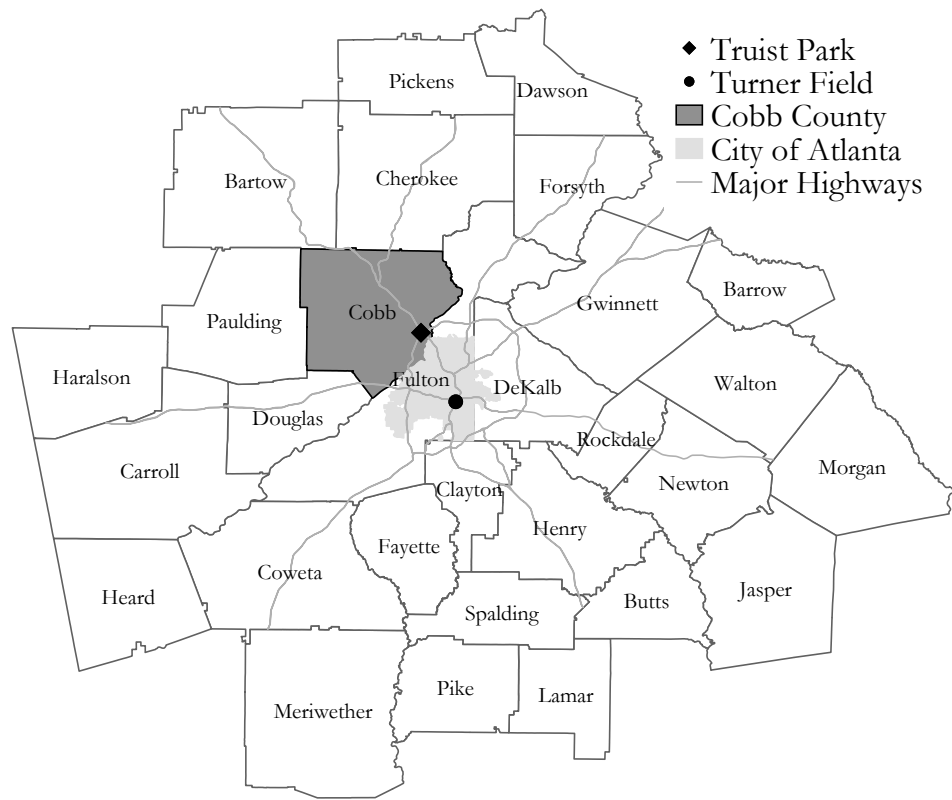


Figure 7: Map of Metropolitan Atlanta Counties

counties may result in net new spending in Cobb. The stadium itself is also located at the major junction of I-75 and I-285, so that it can be easily accessed by residents throughout metro-Atlanta (see Figure 7).

The proximity to these non-Cobb customers is important for The Battery’s potential fiscal impact. Though stadium spending largely represents a reallocation of spending within a region, when spending crosses into Cobb’s tax jurisdiction, the County may benefit from spending coming from outside Cobb at the expense of other counties. Baseball fans who previously purchased tickets, concessions, and related entertainment near Turner Field—whether they are residents of other metro-Atlanta counties like Clayton, DeKalb, or Fulton, or even from out of state—may now import this consumption to Cobb. This net new spending may translate into greater tax revenue through added sales that ultimately enrich Cobb merchants and taxpayers. If the gains are sufficient, then the stadium may represent a worthwhile expenditure that generates a positive return on investment, providing added tax revenue that exceeds the public funding it receives. I investigate the ballpark’s fiscal impacts in Sections 6, 7, and 8.

Claims about past stadiums

Braves Field (1915–1952)

*The model of the new baseball park in Allston which the Boston National League club expects to occupy . . . shows to a nicety the layout of the building and field, which, embodying the best and most successful features of other new parks in the country, makes the new home of the Braves the last word in ball parks.*⁵⁰

Milwaukee County Stadium (1953–1965)

The Braves, in turn, have helped Milwaukee as much as Milwaukee has helped them, causing a boom in taxi, restaurant and retail sales. Beamed a merchant, “This is the greatest thing that has happened to Milwaukee since beer.” The

Association of Commerce estimated that the Braves attracted nearly \$5 million in new business to Milwaukee in 1953... and Milwaukee boosters exulted in their new-found urban competitiveness. "Milwaukee is big-league in every respect, not only in sports, but in the much bigger league of industry and commerce."⁵¹

Atlanta-Fulton County Stadium (1966–1996)

Why spend taxpayers money for such folly?... Why a stadium? I can't answer this for sure yet, because all the returns won't be in for a year or two, but I doubt that any other stadium has ever had the effect on a community's economy, thinking and pride that Atlanta Stadium has had on Atlanta. Mayor Allen conservatively estimated that it would bring between \$11 million and \$15 million in "new money" into the city.⁵²

Turner Field (1997–2016), converted from Centennial Olympic Stadium (1996)

As a result of the new, debt-free stadium, the Braves are committed to remaining in the city. Atlanta will therefore continue to benefit from major league baseball's economic impact of \$200 million per season, as estimated by a Kennesaw State College study prepared for the Braves.⁵³

5

Commissioned economic impact reports

*This makes Cobb's marketability so much stronger, and it helps us become more than a suburban community. We are going to see huge benefits for many, many years to come especially having such a wonderful organization like the Braves be a part of our community.*⁵⁴

— Brooks Mathis, Cobb Chamber of Commerce Executive Vice President

Stadium boosters often commission private economic impact reports to advocate for public funding of stadium projects. A study that purports to find financial benefits from a new stadium not only promotes the notion that the project will be a net benefit to the community, but also serves as counterbalance to the strong academic consensus that stadiums are not strong drivers of economic growth (see Section 3). But rather than provide an objective policy assessment, these commissioned reports serve as public relations documents designed to support the predetermined conclusions of a paying client. For policymakers, who seem predisposed to favor stadium projects, the reports offer a justification with the perception of credibility.

Stadium proposals are inherently forward looking; therefore, expectations are based on projections. This differs from academic studies that use retrospective analysis to estimate economic impacts from past observations. Projected estimates in commissioned reports frequently rest on subjective assumptions, sloppy methodology, and optimistic assessments to justify desired outcomes. They typically place particular emphasis on unique features of the proposed stadium, casting it as an exception to the spate of stadiums that have failed to live up to similar promises. Rather than provide reasonable and objective forecasts of expected returns, these “advocacy studies” have been described as “fantasy documents which use pseudo-scientific regalia to legitimize organizationally biased points of view” to build public support and persuade decision-makers.⁵⁵

Local business leaders often take a lead role in promoting sports stadiums and events as economic development opportunities; in fact, the Atlanta Chamber of Commerce played a significant role in building support for bringing the Milwaukee Braves to Atlanta (see Figure 8). Therefore, it is not surprising that the Cobb Chamber of Commerce was heavily involved in both developing the initial stadium deal and promoting it to the public.⁵⁶ Studies of stadium campaigns have found that local growth coalitions of community and business leaders play a primary role in influencing public perceptions of a stadium to garner public funding.⁵⁷ Between 2013 and 2018, the Cobb Chamber commissioned three economic impact reports that projected significant tangible economic impacts from the stadium.

Though commissioned economic impact reports often suffer from confirmation bias and other methodological shortcomings, the possibility of deficient findings does not necessarily render the projections faulty. In this section, I review the findings of the commissioned reports to assess their credibility and projections. In addition, I subject these studies (and my own studies) to a set of objective questions designed for evaluating non-peer-reviewed economic impact estimates.



ATLANTA CHAMBER OF COMMERCE

1300 COMMERCE BUILDING / P. O. BOX 1740 / ATLANTA, GEORGIA 30301

October 15, 1964

IMPORTANT

A decision is in the offing concerning moving the Milwaukee Braves to Atlanta. If we are successful it will mean great prestige and millions of dollars each year for Atlanta and the South.

This will really move Atlanta into her rightful place as a MAJOR LEAGUE CITY.

You can help !!!

You can help swing the decision. Please send a telegram, adding your encouragement to the Braves to move to Atlanta.

Here is the address:

William C. Bartholomay
Chairman of the Board
Milwaukee Braves, Inc.
2 North Riverside Plaza
Chicago, Illinois

Will you do this now, today, for Atlanta?

Thanks!

Opie L. Shelton
Executive Vice President

Figure 8: Atlanta Chamber of Commerce Flyer⁵⁸

Brailsford & Dunlavey

The program management firm Brailsford & Dunlavey provided the initial projections used to tout the economic impacts of the stadium in two reports, which were presented in memos. The initial 2013 report estimated that total ongoing benefits would total \$171 million over a 30-year period (\$5.7 million per year), and \$81.6 million in present discounted value. This estimate includes \$4 million in annual tax collections accruing to the County from on-site property, sales, and beverage taxes and off-sites sales, hotel, and transportation taxes. The 2016 update projected \$178 million in total benefits (\$5.9 million per year).⁵⁹

Though the reports include many projected estimates, the analysis is not well de-

scribed, so it is unclear exactly what assumptions were used or the justifications for those assumptions. At its base, the estimates are based on the assumption that the stadium would attract 3 million fans in 2017 and stabilize at an average annual attendance of 2.7 million fans by 2020. However, the team has never attracted more than 2.65 million fans in any season (2019), and it averaged 2.57 million spectators during its first three seasons. Thus, its projections are based on a 5% overestimate of attendance, which means its economic projections are biased upwards.

The projected benefits also include impacts from construction jobs and spending, but construction expenditures are not particularly useful for measuring the economic impact of such projects. First, construction is a short-term endeavor, which does not produce durable long-term benefits. Second, stadium construction largely involves a reallocation of existing construction workers and materials to the stadium from other projects rather than creating net new economic activity.⁶⁰

In terms of employment, the report estimates that the ballpark will generate 17 new full-time positions—1 MLB team player, 1 coach, 10 administrator, 2 maintenance, and 2 concession payroll jobs—and 526 part-time positions for county residents for a total of \$6.2 million in earnings, which translates to \$11,500 per job.⁶¹ Using several job-specific multipliers of approximately 1.5, it projects the indirect creation of 29 new full-time jobs in the county for an a total of 527 new jobs earning a total of \$8.7 million, which translates to \$15,000 per job. It projects visitor spending (including visiting teams) to result in \$38 million in new spending, which produces 310 new jobs and \$9 million in earnings (\$29,000 per job). Finally, it projects ancillary development surrounding the ballpark will support \$66 million in new spending, 509 jobs with \$13.2 million in earnings (\$26,000 per job).

Overall, the Brailsford & Dunlavey reports are vague and unconvincing. While some assumptions have been made regarding local and new spending, they are not stated explicitly. The methods and models employed for generating projections are not provided. It does not address crowding out of existing spending or induced wage pressure from reallocations from

the existing workforce (discussed below). It is not obvious how the presented details sum to the total benefits presented. In total, they are confusing documents, and the complexity of the presentation obfuscates the reported information so that it is not intuitively decipherable.

Center for Economic Development Research

In 2018, the Cobb Chamber commissioned a “fiscal impact” study of the stadium’s impact on Cobb County and public school budgets by the Center for Economic Development Research (CEDR), which is a part of Georgia Tech’s business outreach organization Enterprise Innovation Institute. CEDR estimated that the stadium development was responsible for \$18.9 million in net tax revenues flowing to Cobb County annually, with a net gain of \$4 million to the County government and \$14.9 million to public schools. If true, an annual return approaching \$19 million would be an unprecedented return on investment for a stadium, contrary to research findings from other stadiums discussed in Section 3.⁶²

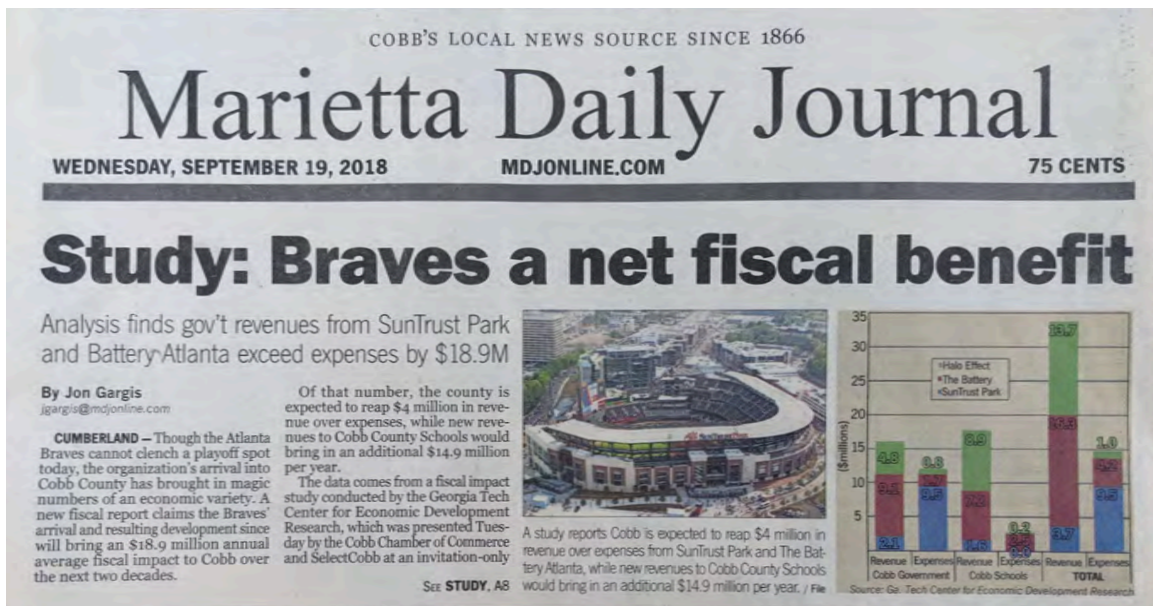


Figure 9: *Marietta Daily Journal*, September 19, 2018

The study was presented with great fanfare before a private invitation-only audience at The Battery. Its findings were repeated verbatim in a banner front-page article in the Cobb-based *Marietta Daily Journal* (Figure 9), in which no critical commentary nor objective

vetting of the estimates were reported.⁶³ The paper followed up with an editorial declaring the estimates provided definitive proof of the stadium’s positive fiscal impact to the County: “it’s difficult to describe [Truist] Park and The Battery Atlanta as anything less than successful. There are still naysayers who will try, but had the stadium paid for itself in one year, the cynics would still find fault with something somewhere, somehow.”⁶⁴

As an aside, though the *Marietta Daily Journal* reported much useful information on the stadium deal, this uncritical coverage exemplifies its pro-stadium advocacy slant, which resembles a phenomenon documented by sociologists Kevin Delaney and Rick Eckstein in their extensive research of stadium campaigns across the US. They find: “For the most part, local newspapers, television, and radio were editorial sycophants for proponents of new publicly subsidized stadiums and ridiculed opponents as shortsighted and selfish.” In addition, they observed, “Editorials supporting the new stadiums would often parrot the fantasy documents . . . and (mostly) ignored contrary arguments.”⁶⁵

The report acknowledges that years of academic research has demonstrated that “public stadiums have not historically paid for themselves;” however, it argues that the outcome of the Cobb stadium project would be different from other stadiums, noting the unique advantages discussed in Section 4. CEDR Director Alfie Meek declared that “the Atlanta Braves changed the stadium-financing paradigm” with its mixed-used development: “[T]hat is why The Battery impact is so important. . . . You simply can’t use the old ‘traditional wisdom’ for stadium financing for this deal.”⁶⁶ However, CEDR’s reported positive return is not a product of a new paradigm; instead, its estimates derive from faulty accounting, inappropriate methods, and dubious assumptions.

Merkle’s CEDR’s Boner⁶⁷

The study’s abnormally high fiscal impact estimate is largely the product of one egregious accounting error: it classifies tax revenues collected from the special service districts (cost) as stadium-generated revenue (benefit).

This money does flow through the county, but it is not an expense against county taxpayers (other than the commercial property owners who self-tax and the hotel visitors who pay a \$3 per night fee who are likely not Cobb County residents). Simply put, without the stadium, these revenues would not be available to the county to fund other initiatives. Because these revenues would not be available to fund other county initiatives, the true annual debt service expense to the county government is only that amount that comes from the General Fund, the Hotel/Motel Tax, and the Rental Car Tax.

This reasoning—that the tax revenue would not exist without the stadium, therefore it is not a cost to taxpayers—is specious. Furthermore, the exception of “other than the commercial property owners” is a bizarre qualifier, because *Cobb commercial property owners are County taxpayers*. As discussed in Section 2, assigning special service district tax revenues to cover stadium costs is not the same as the stadium producing this revenue. The stadium development most certainly is not responsible for most of this revenue, which is generated year-round by businesses that mostly have little-to-no connection to the stadium. By statute, commercial property owners in the district must remit these taxes to the County even though nearly all of them derive their revenue from non-stadium-related business. Special district taxes represent a real burden to Cobb taxpayers to fund the stadium, which amounts to nearly \$9 million in tax revenues annually that must be subtracted from the fiscal benefit calculus. This incomprehensible accounting error is responsible for almost half of the report’s projected fiscal benefit.

The remainder of the benefits manifest through three channels of fiscal impact: Truist Park, The Battery, and a halo effect on an “area of influence” around the development, through which property and sales tax revenues flow to the County. I discuss each area separately.

Truist Park

The fiscal impact estimates of the stadium were generated using a proprietary model LOCI™, which the report states “was developed in the early 1990s by economists at Georgia Tech” and “has been used to evaluate hundreds of projects.” Though its company website declares LOCI™ to be “the gold standard in fiscal impact analysis software,” it appears to be used only by CEDR and the consulting group Economic Impact Group (EIG), whose principals overlap with CEDR.⁶⁸ A search of the American Economic Association’s index of all economics publications EconLit does not produce any record of its use or application in any published economics articles in its extensive database.⁶⁹ I was able to find one assessment of LOCI™ from 2001, which notes a lack of documentation regarding its estimation methods and raises many concerns regarding how input choices and outdated parameters can result in misleading and biased estimates.⁷⁰ The report does not provide even a general description of how the software model generates its projections. LOCI™’s lack of established reputation as a credible projection model and non-transparent black-box methods raise substantial doubt about its reliability. Though its estimates should not be accepted at face value for these reasons, I proceed in describing and evaluating its findings.

Truist Park is owned by the Cobb-Marietta Coliseum and Exhibit Hall Authority; therefore, the \$672 million stadium is not taxable property. However, the stadium has \$100 million in taxable on-site personal property. In addition, in-stadium purchases of tickets, concessions, and merchandise are subject to sales taxes, where 1% each goes to the County and Cobb public schools for use in pre-determined capital projects.⁷¹ CEDR estimates that attendance by non-Cobb attendees represents 70–75% of stadium spending and 3,100 seasonal employees working at the game will contribute sales tax revenue. This number of employees far exceeds the projection of Brailsford & Dunlavey (~550); however, it is not clear what jobs either report is referring to. In addition, it reports 18% of tickets are purchased by fans more than two hours away, and thus it assumes these fans will stay one night in Cobb hotels where they will contribute to the County’s 8% hotel taxes and additional

consumption spending. In total, it estimates that the stadium alone will contribute \$2.1 million in taxes to the County and \$1.6 million to public schools.

The assumptions regarding long-distance visitors who stay in hotel stays are not well-justified. While some visiting fans likely do stay in hotels; many traveling fans return home, stay with local friends, or stay in hotels outside of Cobb (especially considering many of Atlanta’s prominent tourist attractions are in Fulton County). Furthermore, it does not account for displacement of hotel guests who may chose not to stay in a Cobb hotel to avoid crowds and congestion. It further assumes the 18% of approximately 2.5 million stayed overnight and spent \$105 per day on transportation, food, lodging, retail, and entertainment, which translates to \$900,000 in annual sales and hotel tax revenue.⁷² This estimate is based on many assumptions and little hard evidence, and thus it is difficult to validate.

While it makes some attempt to exclude local spending by focusing on non-Cobb attendees, it does not make further adjustments for non-local fans who adjust their already-planned visits to attend games. The two groups of non-local fans who do not contribute net new spending are known as “casuals” and “time-switchers.” Casuals are attendees who happened to be visiting Cobb and decided to attend a game because it was an option. For example, a business traveler staying overnight in Cobb decides to attend a game instead of going out to dinner. Time-switchers plan their visits to town when games are occurring. For example, grandparents plan to visit their grandchildren in Cobb during baseball season rather than at Thanksgiving. Failing to make these adjustments is likely not generating large overestimates, but it has long been acknowledged that economic impact studies should adjust for these types of fans.⁷³

The Battery Atlanta

CEDR projects that The Battery generates an annual average of \$3.6 million in property taxes, \$3.1 million in sales and hotel taxes, and \$2.4 million in other license and permit fees. This sums to a total of \$9.1 million per year flowing to the County. After subtracting out

County expenses, the net gain is \$7.3 million per year. For the school system, it projects \$7.2 million in gross added revenue and \$4.7 million on net.

However, these estimates are based on a projection model that is neither explained nor justified as appropriate. The analysis does not use LOCI™ to analyze the impact of The Battery, because the author states that the model is not designed for mixed-use projects. This is a strange limitation for software designed to estimate fiscal impacts, because mixed-use developments are common economic development projects, and cities are inherently mixed-use jurisdictions. This further calls into questions LOCI™’s credibility to estimate the impact of the stadium. Instead, the analysis is conducted using a “mixed-use model approach,” which the report describes as:

*based on statistical analyses of the influence of changes in residential, commercial, and industrial property values on specific revenue and expenditure categories. This is achieved through regression equations using pooled time series and cross-sectional data for all counties and cities in Georgia.*⁷⁴

No further details are provided, and this description is wholly inadequate for describing the estimation method. Regression-based strategies have many strengths, but a well-known weakness of regression estimators is that they are often sensitive to a multitude of factors and assumptions that can result in biases. Therefore, economic researchers typically devote considerable time detailing regression models and estimators to demonstrate their validity. Without an explicit description of the methods employed, or presentation of the full estimates—which are standard when presenting regression-derived estimates—it is impossible to assess the accuracy of the estimates that are reported: the results simply are not credible.

Area of Influence

The final contributor to the stadium development’s impact is its effect on Cobb property values from new economic development beyond The Battery. This “halo effect” is expected

to spill over onto what the report describes as an “area of influence.” It notes that property values in the area of influence increased by 45.9% between 2013 (when the stadium was announced) and 2017 (the most recent valuation at the time the report was released). However, the evidence does not support the contention that property value growth in the area was *caused* by the stadium development.

A unique aspect of the stadium’s location is that it lies within the Cumberland CID, which pre-dates the stadium. The CID provides a natural area to assess nearby economic development spillovers on the surrounding halo of businesses; however, the analysis strangely eschews this natural predefined geographic boundary to observe a much larger area. This is problematic because Cobb County property values actually grew at a greater rate than CID property values between the date of the stadium’s announcement and the date of comparison in 2017 presented in Table 4.

Table 4: Gross Property Tax Digests in Cumberland CID and Cobb County

Year	Cumberland CID	Cobb County
2010	\$1,217,586,907	\$31,428,353,769
2011	\$1,102,741,561	\$29,710,685,634
2012	\$1,113,705,816	\$29,000,027,430
2013	\$1,093,675,055	\$28,814,578,201
2014	\$1,136,913,418	\$29,923,663,025
2015	\$1,154,136,289	\$31,279,057,426
2016	\$1,222,335,320	\$33,410,647,692
2017	\$1,313,463,256	\$35,200,397,578
2018	\$1,396,986,326	\$38,088,149,593
2019	\$1,395,789,103	\$40,283,566,493
2020	\$1,555,924,065	\$42,328,158,033
<i>Tax Digest Growth (%)</i>		
2013–2017	20.10%	22.16%
2013–2020	42.27%	46.90%

Bold denotes CEDR (2018) comparison years. Source: Georgia Department of Revenue: <https://sso.dor.ga.gov/>

As described in Section 3, economic studies have identified limited positive effects on certain types of business activity near stadiums; however, the effect tends to be limited to the

immediate area and generally does not extend more than two miles. The arbitrarily-defined area of influence is approximately twice the land area of the CID. If the stadium is stimulating commercial development, property values closest to the stadium ought to rise faster than the rest of Cobb. That stronger growth is not present in the CID indicates that growth in the area of influence, which extends well beyond the Cumberland CID, likely reflects an effect from other factors and not the stadium. I examine Cumberland CID property values in Section 7 and find the stadium did not result in CID property value growth.

From the growth of this area of influence, CEDR concludes that, on an annual basis, the stadium contributes \$4.8 million in property taxes to the County and \$8.9 million to schools, with net impacts of \$4 million and \$8.7 million, respectively. However, these estimates do not appear to be credible for the reasons discussed above.

The report does not include revenue collection estimates for other parts of the county, nor does it account for the possibility that this new commercial hub might reduce other local business activity elsewhere in Cobb County, which economists refer to as “crowding out.”⁷⁵ Most people tend to spend a large share of their incomes near their homes. If Cobb residents are spending at The Battery, then this likely reduces consumption at other local establishments like restaurants, movie theaters, and retailers. The way in which the local contributions are summed up—from the stadium, to The Battery, and the area of influence—only adds to local spending; therefore, the estimated sales and property taxes collected at the stadium and its surrounding development do not represent net new spending. Approximately one-third of spending at the development comes from Cobb residents who likely would have been spending that money elsewhere in Cobb (see Section 6), which this projection does not account for.

Summary of CEDR Report

CEDR’s methods are not explained clearly beyond inadequate general descriptions, and the calculations suffer from incorrect accounting methods (e.g., counting taxes collected as a

benefit rather than a cost) and not properly measuring aggregate effects for the County. The report does not present compelling evidence that the County government or public school systems have benefited financially from Truist Park and The Battery, no matter how novel a paradigm this mixed-use development may be. Stronger support using appropriate methods are needed to justify such a strong conclusion that is anomalous among studies. Like most commissioned advocacy reports, the CEDR estimates are not credible.

An Objective Framework for Evaluating Economic Impact Studies

Privately commissioned studies are rarely reviewed for credibility after studied projects are finished. This contrasts with the academic studies summarized in Section 3, which undergo standardized academic peer review, where expert scholars review and critique studies anonymously before being published, which provides a quality check on the methods and findings. While peer review is useful for establishing study credibility, the process is time-consuming and tedious, with back-and-forth reviews and revisions sometimes lasting months or years; thus, it is not well-suited for informing policy in the standard decision-making time-frame. Though I offer ex-post reviews of the studies above, my assessments may not be viewed as objective because I have expressed skepticism of the stadium-project since its inception. Though my assessments are consistent with the near-unanimous findings in the academic literature and represents a mainstream view held by most economists, I wish to provide further assurance that my interpretations are objective and credible.

Public policy scholars Robert Wassmer, Ryan Ong, and Geoffrey Propheter have developed an objective framework for critically assessing economic impact studies, which is published in the reputable journal *Economic Development Quarterly*. The assessment uses 20 evaluative questions based on common mistakes in commissioned economic impact reports.⁷⁶ I employ the questions to evaluate the commissioned reports and my own peer-reviewed studies discussed in this report. The evaluation, which is available in full in Appendix A,

confirms that the commissioned economic impact studies of Truist Park suffer from many common shortcomings of advocacy studies.

In conclusion, the much-publicized reports commissioned by the Cobb Chamber of Commerce commit many errors common to advocacy studies, and their economic impact projections of the Truist Park development are not credible.

6

Impact on Cobb spending

There's been so much emphasis based on the general fund and all that, and really, there has not been a lot of discussion about the sales tax, and it's some serious dollars.⁷⁷

— Bob Ott, District 2 Cobb County Commissioner

If Truist Park and The Battery attract new spending from visitors and retained spending from Cobb residents, then it should be evident in County sales tax revenue. Attracting new spending from non-Cobb residents was an early selling point for the ballpark, because The Battery's location at a major transportation nexus and proximity to Atlanta should facilitate visitor commerce. The added economic activity should translate to greater County revenue through sales tax collections.

In Cobb County, most tangible personal property and certain services are taxed at a rate of 6% of the retail sales price. From this collection, 4% goes to the state, and 1% each goes to Cobb County government and Cobb public schools.⁷⁸ Sales taxes from Truist Park are not an added benefit to the state, because these funds were previously collected at Turner Field.⁷⁹

The revenue the County and public schools receive from their shares cannot be used directly to fund the stadium or contribute to other general budget expenditures. These are

Special Local Option Sales Taxes (SPLOST and ESPLOST) that are approved by voter referendums to fund predetermined projects from prioritized lists, which do not include the stadium. However, if the tax revenue is sufficient to fund more SPLOST priorities, then the County may be able to reduce general fund obligations that might otherwise be needed. Thus, added tax funds from the development may theoretically generate more revenue than the cost of the County's budget obligations to fund the stadium. As former Cobb Chairman Mike Boyce described the impact from fans at the ballpark: "I've become a huge fan of two-fisted drinkers. Those aren't beer cups, those are SPLOST cups. I'm also a huge fan of \$10 hot dogs, because that's SPLOST money coming into this county to do great things."⁸⁰

In an effort to estimate the impact of the stadium on Cobb County sales, I observed how sales tax collections changed after the stadium opened, which may be attributable to the development. Though sales tax collections have increased since the stadium opened, the difference in tax revenue generated before and after The Battery opened is not sufficient to quantify the impact of the development, because spending changed for reasons other than the addition of a ballpark. During this period, the US economy was generally growing and resulted in greater spending in Cobb, like much of the country. However, by comparing how Cobb sales tax collections have changed relative to other nearby similar counties, it is possible to determine how much of this change may be attributable to an influx of spending from the ballpark development. If The Battery has had a strong impact on spending, then Cobb tax collections should have jumped following the stadium's opening in addition to the general tax collection growth experienced in other metro-Atlanta counties.

I begin with a simple comparison to changes in other counties. Figure 10 maps quarterly sales tax revenue per capita collected in Cobb and other metro-Atlanta counties. It shows that Cobb's tax collections increased after the stadium opened, in the second quarter of 2017; however, Cobb's growth was less than the rest of Atlanta, which is not consistent with the stadium stimulating additional economic activity in Cobb.

While a comparison to the metro-Atlanta average is useful, a comparison based on

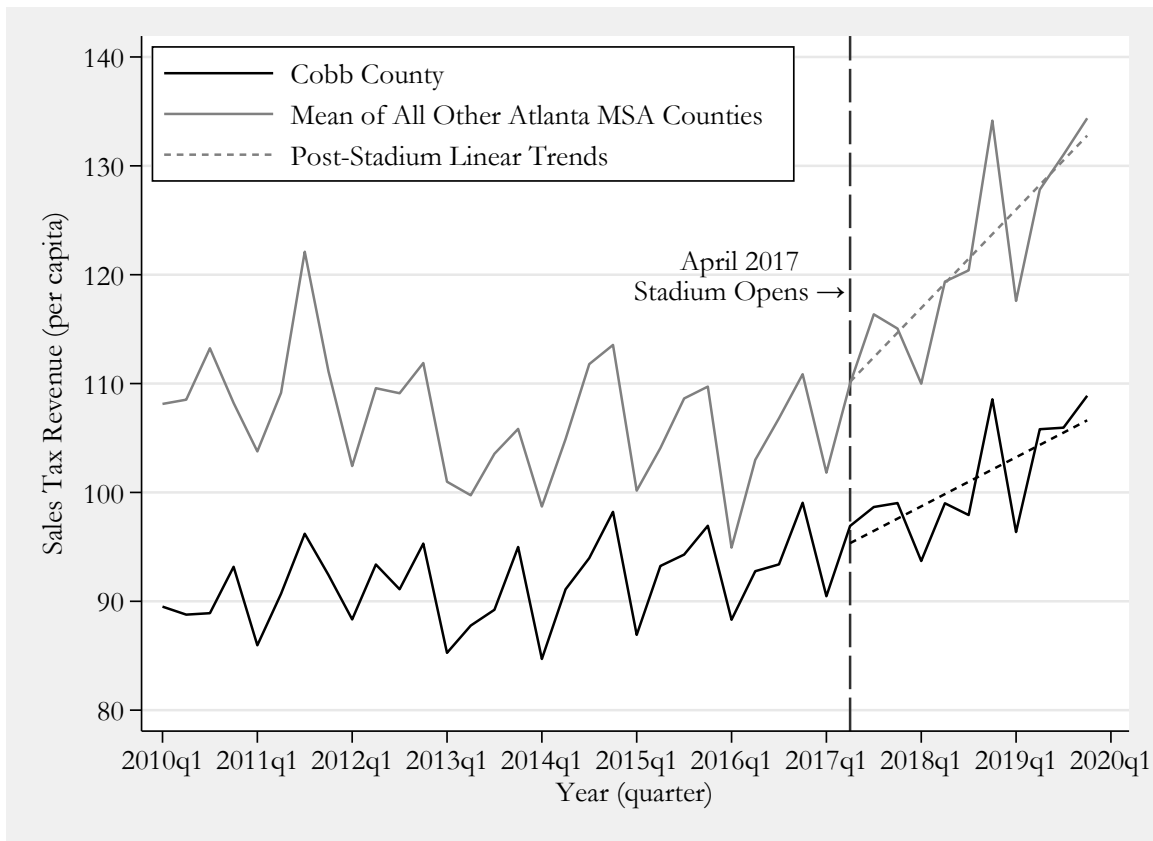


Figure 10: Sales Tax Revenue per capita (quarterly), Cobb and Metro-Atlanta Counties

counties most similar to Cobb may be more instructive. An empirical technique known as the synthetic control method permits a comparison of what Cobb sales revenue might have been without the stadium based on observed experiences in counties that are most similar to Cobb. I use the synthetic control method to estimate the stadium’s impact on Cobb sales tax revenue, discussed in this section, as well as Cumberland CID and countywide property assessments, presented in the following sections. This technique has gained wide traction by economists and other social scientists for evaluating policy. Renowned econometricians Susan Athey (2007 American Economic Association Clark Medalist) and Guido Imbens (2021 Nobel Laureate) describe the method as “arguably the most important innovation in the policy evaluation literature in the last 15 years.”⁸¹ For expediency, I provide only a general description of its application in the following paragraph, but I include a more detailed description of the empirical procedure in Appendix B. Explicit descriptions that detail the

empirical methods are available in the published peer-reviewed studies, which I summarize in this report.

Though the synthetic control method is complicated, its intuition is straightforward. It involves estimating a reasonable counterfactual expectation of what likely would have occurred without a particular intervention (e.g., the addition of a new baseball stadium). This requires using several relevant county characteristics (e.g., sales tax rate, income, past sales tax collections, etc.) to identify the counties most similar to Cobb for estimating an expectation of Cobb's per capita sales tax revenue if it had not opened a new baseball stadium. Using an objective pre-determined computational routine, the method constructs a "synthetic Cobb" from a weighted average of the counties that closely track with Cobb's sales tax revenue before the stadium opened. This generates a likely expectation of how Cobb's sales tax collections would have progressed without the stadium, which permits a comparison of Cobb's observed sales tax revenue with a stadium to a reasonable expectation of its sales tax revenue if Truist Park had not been built. A post-stadium deviation between observed and synthetic Cobb sales tax revenue is indicative of the stadium impacting sales tax revenue, and the magnitude of the gap quantifies the effect.

The post-stadium gap between actual sales tax collections (solid line) and expected sales tax collections (dashed line) in Figure 11 indicates that Cobb experienced a small increase in sales tax collections following the stadium opening. Also, sales tax revenue was greater during the baseball season (denoted by the gray bars). This estimate is consistent with an influx of new game-related spending, which many stadium advocates predicted. This deviation is not evident in comparison to the metro-Atlanta average (Figure 10), which demonstrates an advantage that the synthetic control method may offer in identifying any positive economic impacts.

Though stadium development may have increased total Cobb sales, the gains were meager. In fact, the estimated difference is so small that it is not "statistically different" from what other area counties lacking a stadium experienced. In total, collections represent

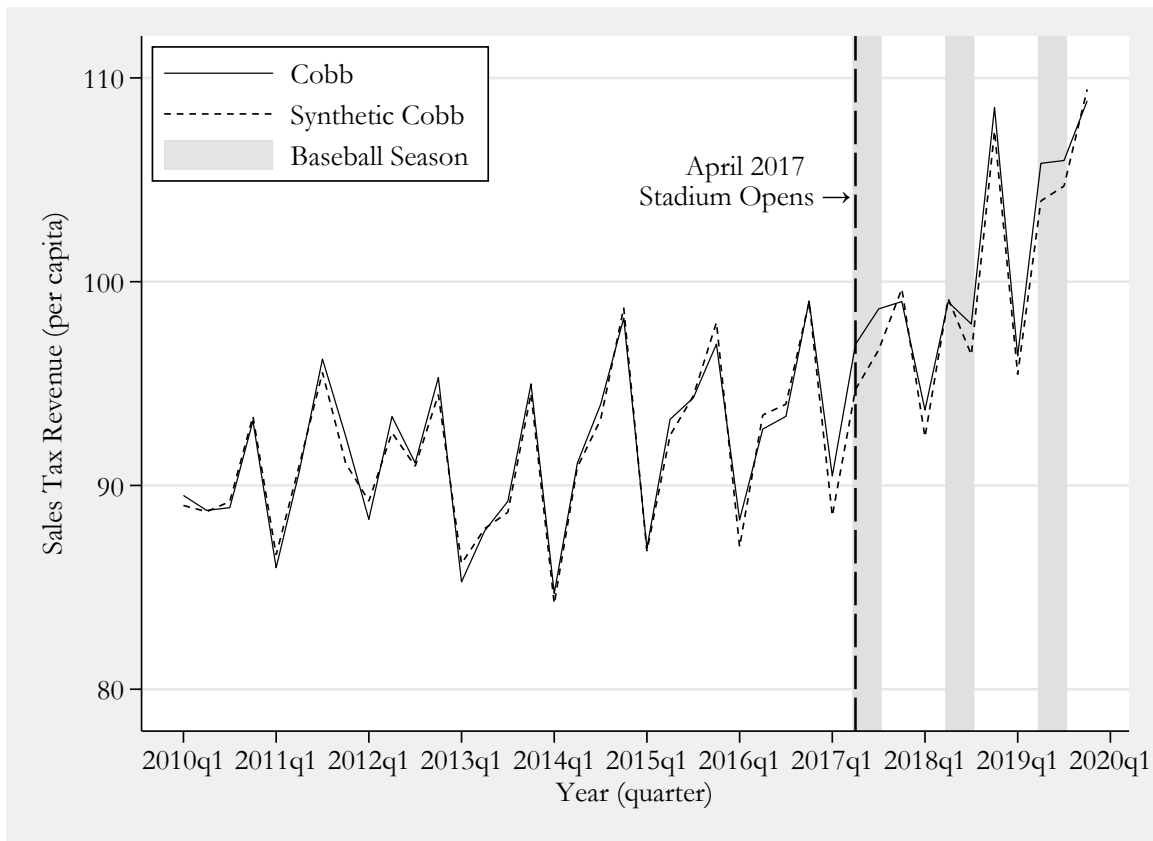


Figure 11: Sales Tax Revenue per capita (quarterly) in Cobb and Synthetic Cobb County. Comparison of trends in sales tax revenue collected (solid line) and expected sales tax revenue without stadium development (dashed line). Gray bars denote the baseball season.

approximately \$3 million per year in added tax revenue, which is split between the County and Cobb public schools. \$1.5 million flowing to the County is well below its annual stadium funding obligation of approximately \$18 million (see Section 2).

Crowding Out

The synthetic control comparison of aggregate Cobb sales tax collections has an advantage of accounting for the redistribution of spending within the county, because aggregate revenue captures both added and lost spending to all Cobb merchants. The Chamber of Commerce commissioned reports discussed in Section 5 directly estimate spending at the development and assume that it only adds to county residents' existing spending, without accounting for

any negative impacts on other Cobb businesses. Not all spending at The Battery comes from visitors, and thus the local contribution that would have otherwise been spent within Cobb needs to be removed from the contribution.

Locals contribute to spending in two ways. Some Cobb residents may spend their incomes at the ballpark development that they would have otherwise spent outside Cobb. For example, Atlanta Braves season ticket holders living in Cobb now return some of their exported spending to Cobb from Fulton, where the team used to play. Economists refer to the retention of local spending as “import substitution,” which represents local spending that is an added contribution to local economic activity. However, a bigger issue is that much of local spending is diverted from other local establishments. Cobb residents who attend baseball games at Truist Park or restaurants and merchants at The Battery likely would have otherwise spent their incomes at other Cobb businesses, like restaurants, movies, or retail shopping, which would have generated equivalent sales tax revenue for the County and schools. This spending is transferred from existing Cobb businesses and thus is not new local spending. Economists refer to this reallocated spending as “crowding out,” because it crowds out local economic activity by replacing spending at existing locations.

The Cobb Board of Commissioners reports total sales tax collections from The Battery as part of its annual update on the ballpark development, which are presented in Table 5. During its first three years of operation, business at the The Battery generated an average of \$4.6 million in sales tax revenue in Cobb, which translates to \$228 million local spending per year. \$3 million dollars in added sales taxes results from \$150 million in total local sales in the county. The difference represents $-\$78$ million in local economic activity that was crowded out by businesses at The Battery, which is approximately one-third of sales at the development.⁸² Thus, even though The Battery may be responsible for a small increase in economic activity in Cobb, it has not been a pure windfall, as some Cobb businesses lost revenue when residents spent their incomes at The Battery.

The identified presence of crowding out reveals the error in the commissioned eco-

Table 5: Economic Activity at The Battery

	Sales Tax Revenue		Economic Activity		
	County/School Share	Cobb Total	All Spending	Crowded Out	
2017	\$1.6	\$3.2	\$160	-\$10	
2018	\$2.5	\$5.0	\$248	-\$98	
2019	\$2.7	\$5.5	\$274	-\$124	
Average	\$2.3	\$4.6	\$228	-\$78	(34%)

Dollars in millions. Source: Sales tax revenue from Cobb County Board of Commissioners (2018, 2019, 2020).

conomic impact reports (see Section 5) in assuming there are only positive spillover benefits from the presence of The Battery on local commerce. It is a mistake to add development spending on top of existing spending without accounting for any substitution that local residents make between old and new businesses. This miscalculation is common in for-hire economic impact reports, which often assume development multipliers greater than one. The Battery represents a new outlet for resident spending as well as new non-resident spending, and it competes with other local businesses for customers just like any other new business that opens up in a community.

In summary, though the stadium opening was associated with increased local sales from hosting baseball games, the observed gains have been small, and not all spending at The Battery represents added spending in Cobb.

Full study:

The full details of this study are published in *Journal of Urban Affairs* (Bradbury 2023).

7

Impact on Cumberland CID

You know, like I said, the idea was to do a business deal, leave Cobb better than we found it and try to transform the Cumberland area into the economic engine. And it's happening. If you look at all the numbers, I mean really look at all the numbers, you can't find a hole anywhere.⁸³

— Tim Lee

Findings from research on the economic impact of stadiums (see Section 3) suggest that if Truist Park generates any economic development effects, then they should be most evident in the area closest to the stadium. The general idea behind stadiums being economic development catalysts is that sports events attract new visitors who patronize local restaurants and bars, shop at neighborhood stores, and stay at nearby hotels as part of their game-experience. New businesses in search of profits may enter the market to serve these consumers, further expanding the stadium-anchored entertainment district that becomes self-sustaining when games are not being held. Furthermore, the mixed-use nature of The Battery development creates a new population of residents who may want localized shopping options, which ought to enhance its commercial appeal.

From a research perspective, a desirable feature of the stadium's location is that it happens to be located in the Cumberland Community Improvement District (CID), with

a geographic boundary that was defined long before the stadium came to be. Figure 12 maps Cumberland’s boundary and The Battery’s central location within. CIDs are Georgia’s version of business improvement districts, which are common across the US. Georgia law permits local business owners to form these self-taxing districts to fund improvements that facilitate commercial activity among local businesses, such as infrastructure improvements and beautification. To do so, Cumberland CID assesses a property tax of five mills on commercial property owners in the district—residential property is exempt—and thus CID property has been assessed annually according to strict state standards that ensure assessments reflect fair market value when compared to recent sales. Commercial property is valued for its revenue-generating potential to business. Locations that garner greater business will sell for higher prices; therefore, any anticipated or realized added economic activity near the stadium should be capitalized in CID property values, which have been assessed for many years.



Figure 12: Cumberland CID (white) and The Battery Atlanta (black)

Stadium advocates have often noted the growth in Cumberland property values since the stadium was announced as evidence of The Battery’s positive impact on the district. In

2017, Cumberland CID executive director Malaika Rivers stated, “The Braves move to Cobb County is going to raise a lot of money.” According to CID officials, “The CID’s success has contributed to an explosion in property values, to the tune of \$670 million since the Braves’ decision to move to Cobb in 2013.” A 2018 *Marietta Daily Journal* editorial touted the stadium’s economic impact to be evident in Cumberland property values when it reported: “Fair market value in the CID rose from \$2.75 billion in 2012 to \$3.25 billion in 2017. [Cobb County Board of Tax Assessors] is still crunching the numbers for 2018, but [the director] admits he’s never seen anything like it.”⁸⁴

While there is no doubt that Cumberland property values have increased since the stadium was announced, the growth was not unique to the district. Property values throughout metro-Atlanta have also been growing since 2013, along with the expanding economy; therefore, stadium-induced growth needs to be distinguished from normal growth experienced throughout the region. Truist Park’s location in a CID provides a way to isolate the impact of the stadium, because it provides a sample of control observations of other Atlanta-area business districts without a new MLB stadium. Figure 13 maps the 12 CIDs in metro-Atlanta’s four core counties of Cobb, DeKalb, Fulton, and Gwinnett for which CID property has been assessed since 2010.⁸⁵

If The Battery is responsible for the growth in Cumberland property values, then its property values should have increased more than other Atlanta-area CIDs, which are similarly organized as business districts to facilitate commercial activity in a pre-defined district. Figure 14 reports a simple comparison of how Cumberland and other CID assessed property values changed relative to its pre-announcement values in 2013—the year prior to the first post-announcement property assessments in 2014. In comparison to other CIDs, Cumberland’s property value growth appears typical among local CIDs, which is not indicative of extraordinary growth from the stadium.

However, not all CIDs may be perfectly comparable to Cumberland. Some CIDs are more urban or suburban, larger or more compact, and serve different types of business

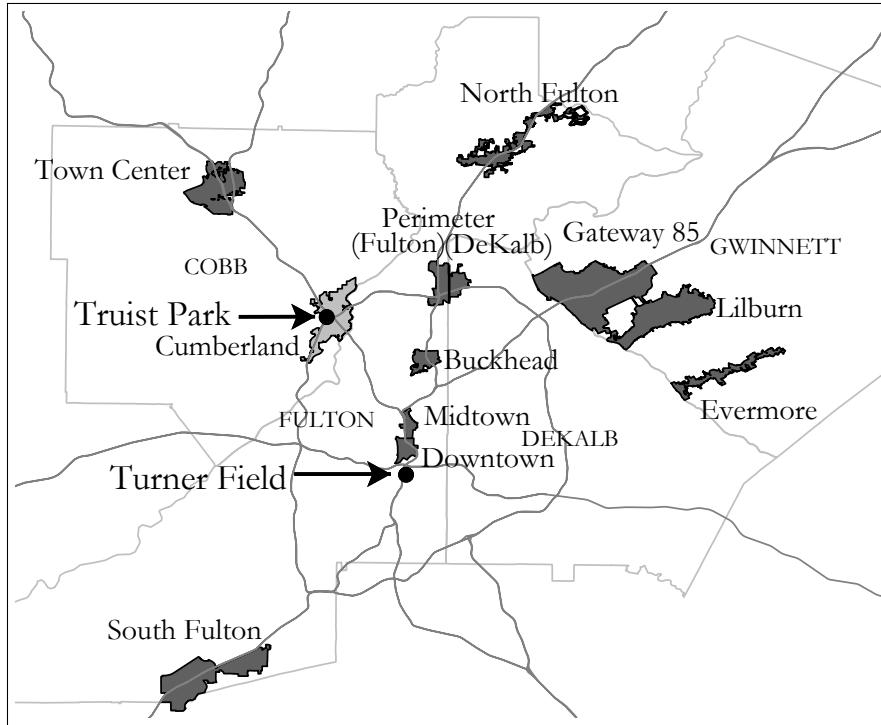


Figure 13: Metro Atlanta CIDs

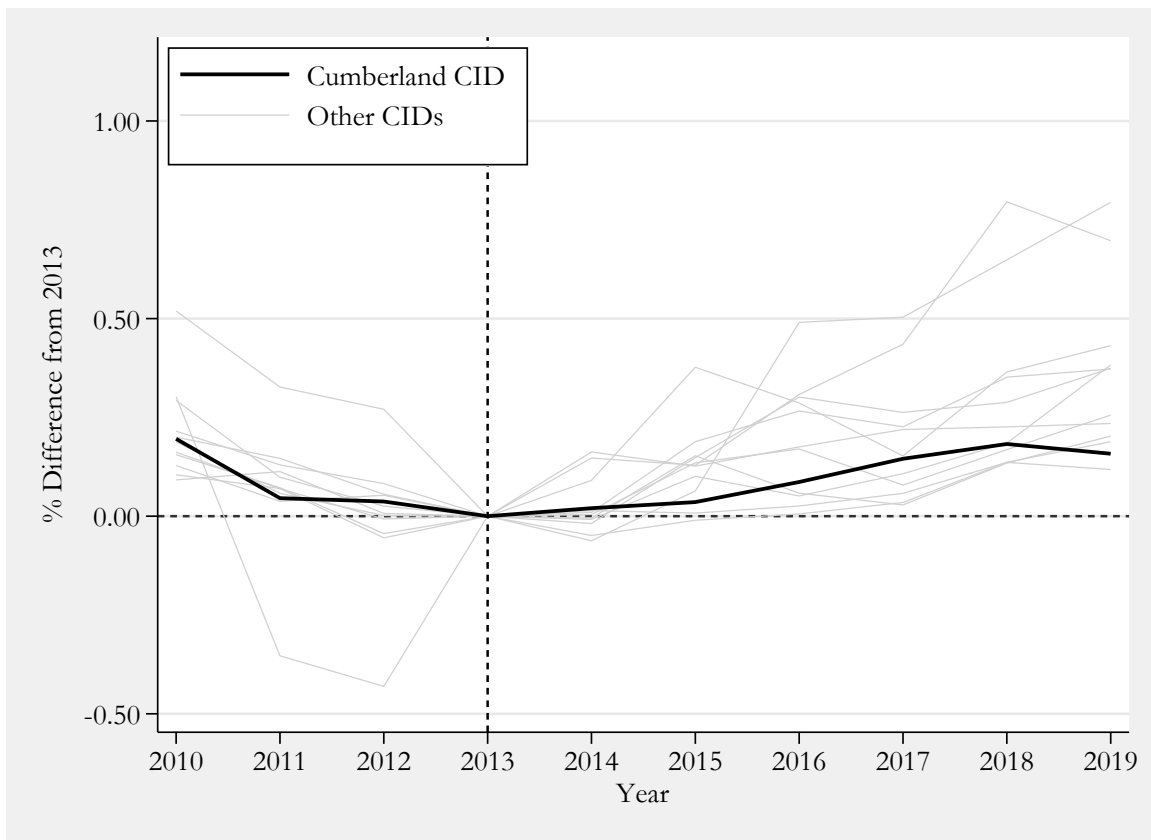


Figure 14: Percent Difference in CID Property Value Assessments Since 2013

activity; thus, the average of all CIDs may not provide the best counterfactual expectation of what Cumberland property values might have been without the stadium. To create a more apt comparison, I use the synthetic control method (see Appendix B) to estimate the expected progression of Cumberland property value assessments if the CID had not experienced the stadium development. Synthetic Cumberland property values derive from a weighted average of CIDs that were most similar to Cumberland before the stadium was announced or opened.

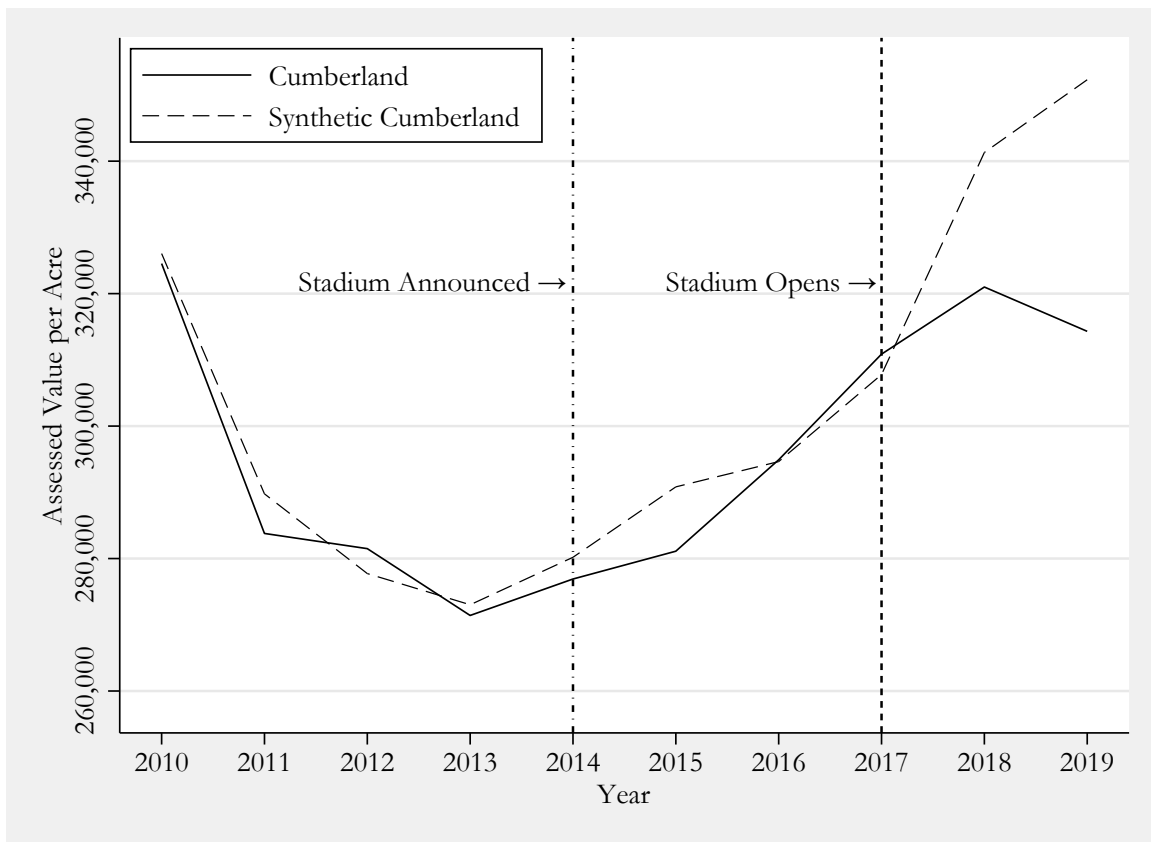


Figure 15: Assessed Property Value per acre in Cumberland and Synthetic Cumberland CID. 2014 is the first year property was assessed after announcements. 2017 is the first year of property assessment after opening.

The comparison in Figure 15 indicates that synthetic and observed Cumberland property values tracked closely both before and after the stadium announcement.⁸⁶ After the stadium opened, property values in Cumberland actually declined relative to expectation, though the sample size and magnitude of the differences are not large enough to declare the

divergence to be statistically different from property value fluctuations experienced in other CIDs.

Commercial property values in Cumberland CID do not appear to have been boosted by the stadium's announcement or opening; therefore, it is unlikely it has had a strong impact on economic activity in the district or spilled further into Cobb. This finding further calls into question the assumption in CEDR's commissioned report (see Section 5) that the development halo effect of The Battery extends beyond Cumberland, because the impact is not observable within the CID.

In the three years after the stadium opened, the stadium hosted an average of 2.57 million fans per year. How could the impact of all these fans traveling to Cumberland CID to make purchases not be positive? It would seem that if the stadium is attracting game-related spending that did not exist previously, then the impact should be positive. However, urban development is more complicated than just adding new spending. Hosting games has benefits and costs, but they do not fall equally on all business. Game traffic generates money for the team and complementary businesses, such as nearby restaurants and bars, which may experience an influx of business of new patrons, and thus may be better off. However, this activity creates congestion that is not good for other types of business. Customers of retail and commercial services located in the area that do not benefit from game day traffic (e.g., grocery stores, auto mechanics, doctors offices, etc.) may choose to avoid problems of congestion by relocating to an area with less disruption.

Overall, the net effect of the stadium on Cumberland property values does not appear to be positive, which is consistent with findings in other economic studies discussed in Section 3. The lack of impact also suggests that existing business districts may be poor locations for stadium-anchored entertainment hubs.

Full study:

The full details of this study are published in *Journal of Regional Science* (Bradbury 2022b).

8

Impact on Cobb property values

*Property values in Ott's District 2 ... have increased by almost \$11 billion since 2013, according to the data the commissioner shared last month. Ott says Cumberland alone has seen significant developments step up to the plate in the wake of the Braves' announcement of their entry into Cobb. ... "As those come online, you start to increase property taxes, and it's people in the area. They weren't being proposed before (the Braves arrival)."*⁸⁷

Even if Truist Park and The Battery have not stimulated commercial activity near the stadium or significantly boosted local sales, it is possible that the development is valued sufficiently by residents to make it worth the public investment. People choose to live and work in Cobb because of its amenities and its relatively low cost of living within the Atlanta area. Just as people may be willing to pay higher prices to live in a municipality with good schools, safe neighborhoods, and accessible parks, residents may similarly value living in a community with its own MLB team. Close access to the stadium is an asset to baseball fans, and residents may be happier knowing that people around the country recognize Cobb County as the "home of the Braves." If such benefits exist, then the added value should be reflected in land prices throughout Cobb.

Like Bob Ott (see epigraph), many stadium supporters have argued that the stadium

has boosted property values to reflect the spillover benefits onto county residents, which has the additional fiscal benefit to the County of raising revenue through greater property tax collections. In a pro-stadium editorial, *Marietta Daily Journal* credited the stadium development with not only creating jobs, but “sending property values skyward in developments around the stadium—adding to the tax base. . . . That’s a home run in our book.”⁸⁸

These basic observations are not incorrect: property value assessments in the area around the stadium and countywide have grown considerably since the stadium was announced and opened. However, increasing property values on their own do not mean the stadium *caused* the growth. Like Cumberland CID values discussed in Section 7, property values in most other metro-Atlanta counties have been growing as well, without having a new baseball stadium. Figure 16 shows that Cobb property value growth since 2013 has

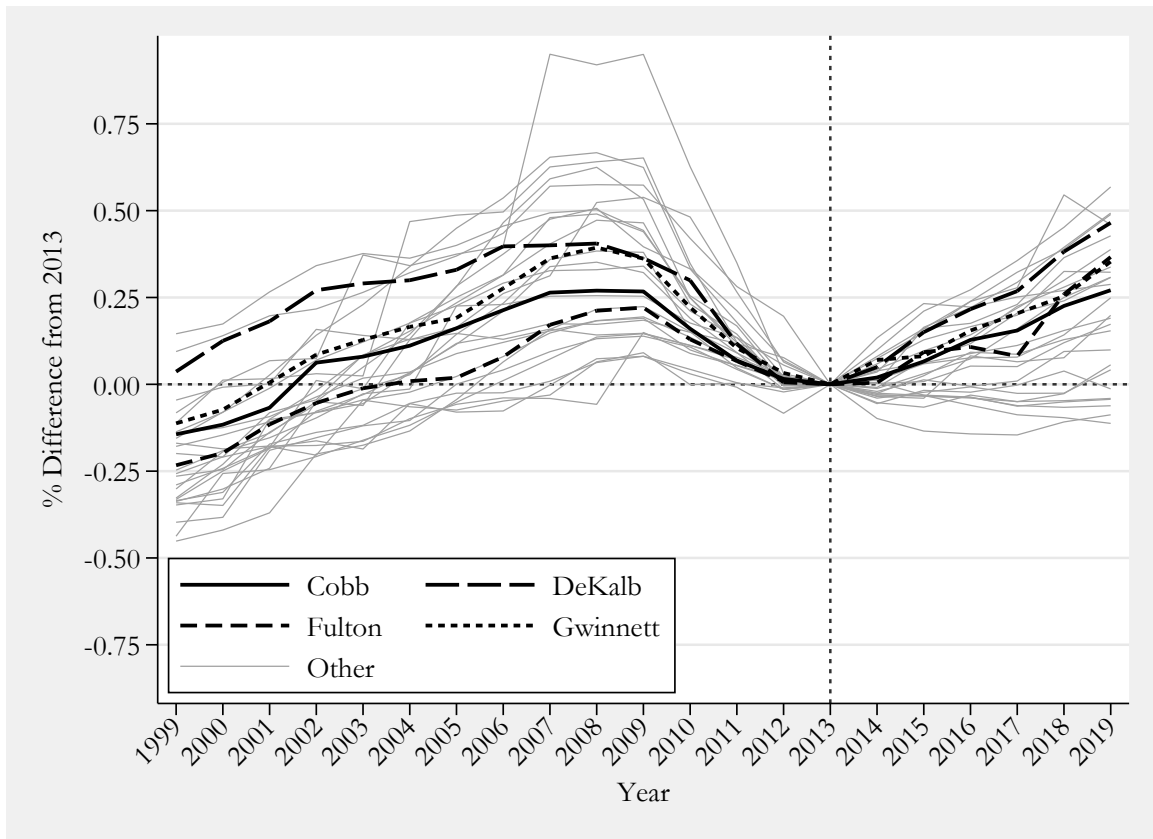


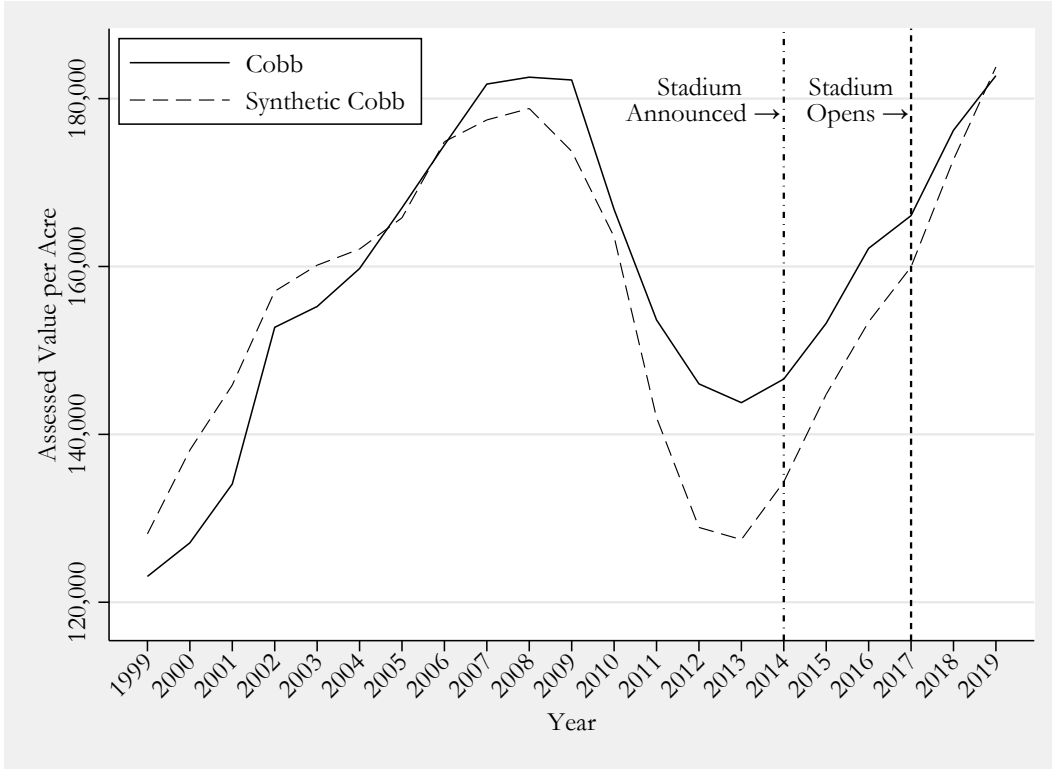
Figure 16: Percent Difference in County Property Value Assessments Since 2013.

been typical among area counties, including Atlanta’s prosperous core of DeKalb, Gwinnett, and Fulton.

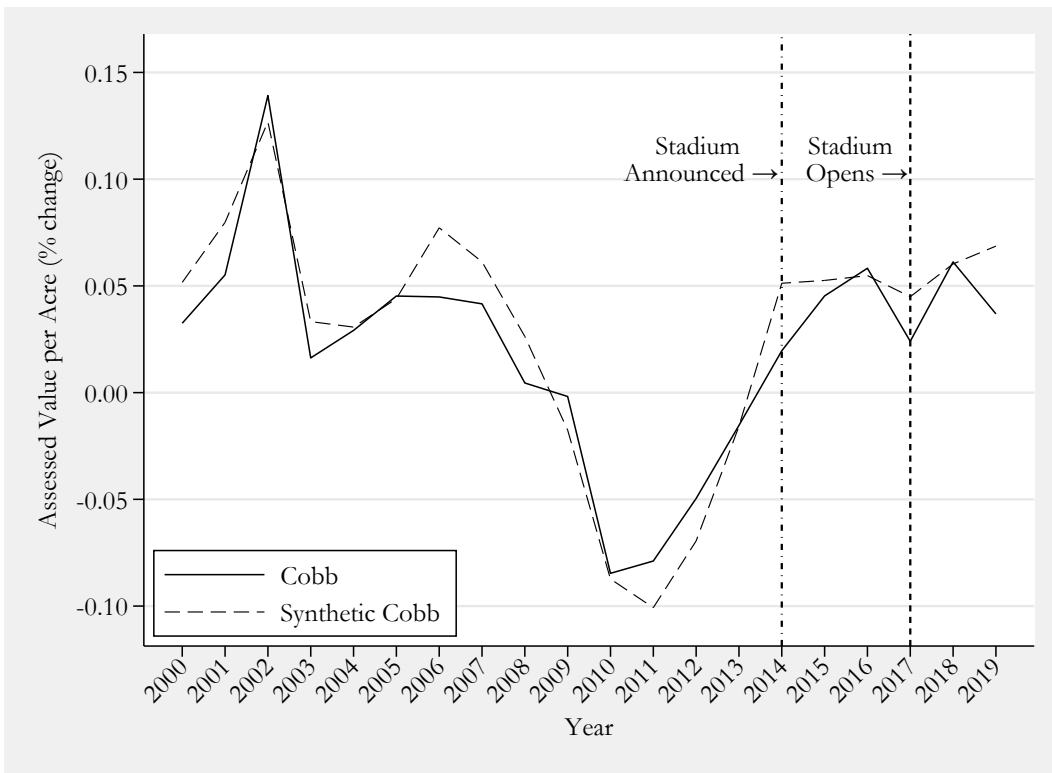
To account for potential outside factors influencing property values, I used the synthetic control method (see Appendix B) to estimate what Cobb’s property values likely would have been if a stadium had not been built. Figure 17 compares Cobb’s property value per acre—both its level and percentage change—to a synthetic estimate of how Cobb property values likely would have progressed without a stadium, after the stadium announcement. By both measures, Cobb property values progressed similar to pre-stadium expectations, which is not consistent with a stadium-induced boost to property values translating into increased tax assessments and greater property tax revenues flowing to the County general fund.⁸⁹

These observations are also consistent with Cobb County’s post-stadium budget, which is set by the Board of Commissioners. Since the stadium was announced Cobb County’s property tax rates have increased 0.54 mills, from 29.81 to 30.35 mills. Though Cobb County School District’s millage has remained constant at 18.9 mills, the County’s share of property tax assessments increased from 10.91 mills in 2013 to 11.45 mills in 2021.⁹⁰ This increase does not include the 0.33 mills that were reallocated from park bonds to fund the stadium, instead of being retired as planned (see Section 2). If the stadium increased property assessment values, then the millage rate should have fallen not increased. Of course, other factors beside the stadium are covered by the budget; however, the predicted influx of property tax revenue through increased property values from the stadium is not evident in any metric.

A 2018 pro-stadium *Marietta Daily Journal* editorial failed to make the connection between sanguine projections of the CEDR report (see Section 5) and actual property tax receipts when it complained about millage increases approved by the Board of Commissioners: “The rosy report further raises the tangential question of the need for a property tax hike hoisted onto taxpayers . . . Between the new revenue generated by the Braves, the county’s 1 percent special purpose local option sales tax coming in \$47 million over initial



(a) Property Assessments



(b) Annual Change in Property Assessments (%)

Figure 17: Assessed Property Value per acre in Cobb and Synthetic Cobb County. 2014 is the first year property was assessed after announcements. 2017 is the first year of property assessment after opening.

projections, better-than-expected revenues from a county-wide hotel tax and a 9.1 percent jump in the county’s gross tax digest over last year, it perplexes how any tax increase was necessary—especially one that raised the millage rate by 25 percent.”⁹¹ It appears the blame lies in CEDR’s faulty prediction, and the editorial board’s faith in it, rather than actual tax collections, because no fiscal windfall from the stadium has manifested in property assessments.

Full study:

The full details of this study are published in *Economics of Governance* (Bradbury 2022a).

9

Cost-benefit assessment

The average resident is going to pay \$26 a year for millions of dollars in returned investment and the benefit associated with that. I think it's a good investment by the Cobb County government on behalf of the taxpayers to spend \$26 to create the returned investment we're going to get in economic growth, the continued job creation, the expansion of our economy and all the opportunity that it provides for us so I think that that is a good investment.⁹²

— Tim Lee

When Chairman Lee proposed that Cobb County provide \$300 million in public dollars to fund Truist Park, he did not pitch it to the community as an expense for a worthwhile public amenity, like a park or a library. This was not touted as a subsidy for an unprofitable venture: he argued that the stadium was a sound financial investment that would pay off, like a business taking on a loan to build a new factory to expand production to serve unmet demand. Yes, \$300 million may be a lot of money, but Lee and other stadium advocates insisted that Truist Park and The Battery would generate enough revenue to return the public funding with a large surplus, which would flow to taxpayers through lower taxes and improved public services.

In economic development, such declarations are easy to make before ceremonial gold

shovels hit the dirt and oversized scissors cut red ribbons in front of flashing cameras. What the future might bring is in the mind’s eye of the politicians and developers, shaped by well-paid consultants who draft renderings of shiny glass buildings and bustling walkways of strolling customers, which make their commissioned financial forecasts seem like a fait accompli. Now that Truist Park and The Battery have been open for five years, it is time to replace ex-ante projections with ex-post observations to quantify true costs and benefits. By looking at the costs incurred and revenues generated presented in this report, the County’s actual fiscal return on the stadium investment is quantifiable.

Table 6 presents the County’s stadium expenditures in 2018 and 2019. I focus on this period because they represent typical years when The Battery was fully operational and pre-date the COVID-pandemic; however, expenditures for 2017 and 2020 are reported in Table 2 in Section 2. In these years, the County spent just under \$25 million per year servicing the stadium debt and funding other stadium-related obligations, and it is likely that expenditures and revenues will continue at this level for the foreseeable future.

Table 6: Annual Cost of Truist Park to Cobb County, 2018–2019

	2018	2019	Average
Debt Service	\$22,484,130	\$22,485,537	\$22,484,834
Capital Maintenance	\$1,230,000	\$1,260,000	\$1,245,000
I-285 Bridge	\$169,656	\$169,655	\$169,656
Property Insurance	\$55,856	\$71,361	\$63,609
Police	\$899,097	\$890,428	\$894,763
Total Cost	\$24,838,739	\$24,876,981	\$24,857,860

Fiscal years from October 1 to September 30. Source: Cobb County Board of Commissioners (2019, 2020).

Table 7 presents the inflow of revenue to the County directly from The Battery, which includes the stadium and its surrounding businesses. Revenues derive from two sources: (1) the rent that ANLBC pays for using the stadium and (2) taxes/fees collected from businesses at The Battery. The annual rent is fixed at \$6.1 million by the stadium agreement, while

taxes and fees are determined by the extent of taxable business activity on The Battery campus. The largest single tax source for funding is sales taxes, which brings in \$2.61 million for pre-determined capital projects. Though sales tax revenue cannot be used to fund the stadium directly, I count this revenue as a benefit to County taxpayers, because it represents a funding stream than may offset expenditures on other government projects or used to lower the overall tax burden on residents. Combined property taxes from the general fund and special service district contribute the next largest contribution of \$2.35 million. Other taxes and fees contribute the remaining \$1.21 million. In total, taxes and fees contribute \$6.18 million, which is nearly the same as ANLBC rent.

Table 7: Direct Revenue Contributions from Truist Park and The Battery Atlanta, 2018–2019

	2018	2019	Average
Sales Taxes	\$2,482,550	\$2,743,463	\$2,613,007
General Fund Property Taxes	\$1,782,956	\$1,868,937	\$1,825,947
Cumberland SSD2 (Property)	\$516,341	\$541,241	\$528,791
Business License	\$272,407	\$189,611	\$231,009
Liquor by the Drink	\$472,682	\$601,431	\$537,057
First District Fund	\$222,833	\$631,816	\$427,325
Debt Service Fund	\$9,787	\$28,719	\$19,253
Total Tax Contribution	\$5,759,556	\$6,605,218	\$6,182,387
2/3 Contribution (adjusting for crowding out)	\$3,839,704	\$4,403,479	\$4,121,591
ANLBC Rent	\$6,100,000	\$6,100,000	\$6,100,000
Total Contribution from ANLBC and The Battery			
No crowding out	\$11,859,556	\$12,705,218	\$12,282,387
Adjusting for crowding out	\$9,939,704	\$10,503,479	\$10,221,591

Fiscal years from October 1 to September 30. Source: Cobb County Board of Commissioners (2019, 2020).

During annual presentations of stadium finances before the Cobb Board of Commissioners, all revenues from taxes and fees are presented as added revenue to the County coming from the development. However, estimates of the impact of the stadium on sales taxes presented in Section 6 demonstrate that it is incorrect to credit all this revenue to the stadium. While sales at The Battery do generate sales tax revenue for the County, much of

it is not net new revenue. I find that the stadium increased total Cobb sales tax revenue by \$3 million per year during its first three years of operations, half of which goes to public schools. This is less than the \$4.6 million in total sales taxes collected directly from The Battery. For The Battery to generate more sales tax revenue than the gains to the entire county, it means that local spending must have been transferred from other local businesses, which amounts to approximately one-third of spending at The Battery. Therefore, the cost-benefit assessment requires that direct revenue collections from The Battery be adjusted downward to account for crowding out of revenue from competing Cobb establishments that lost business to Battery establishments. The crowding out estimates for sales taxes provides a reasonable benchmark for all revenue and fees, because the amount of revenue diverted from fewer sales at other businesses is likely reflected similarly in reduced property values and fees. However, I report all tax revenue collected for reference.

Table 8 reports the costs and revenues together to present the annualized fiscal return on investment to the County. The balance of costs and revenue indicate an annual fiscal loss to the County of \$14.62 million. Normalizing that by Cobb households translates to an annual cost of \$52 per household. Even when all tax revenue is treated as net new revenue (not adjusted for crowding out) the returns remain negative at an annual cost of \$45 per household. Contrary to the assertion of stadium boosters, Cobb County's funding of Truist Park has generated a negative return on investment.

An approximate cost of \$50 per household may not seem like much, especially to Cobb baseball fans who are willing to pay higher taxes to have an MLB team located in Cobb; however, not all taxpayers remitting \$50 per year in additional taxes necessarily feel this way. Subsidizing consumers' personal tastes is not generally considered a proper function of government. Cobb residents who do not follow baseball or care about the presence of the team pay County taxes just like loyal fans do. Just because it is worthwhile to some taxpayers does not make it worthwhile to all, or even a majority of taxpayers. A quasi-referendum on the stadium occurred in 2016, when stadium-deal architect Tim Lee was

Table 8: Cobb County Annual Fiscal Return on Stadium

Total County Funding Obligation	– \$24.86	million
<i>Not adjusted for crowding out</i>		
Total ANLBC Revenue Contribution	\$12.28	million
Annual Return on Investment	– \$12.58	million
Annual Cost per Cobb Household	– \$45	per household
<i>Adjusted for crowding out</i>		
Total ANLBC Revenue Contribution	\$10.22	million
Annual Return on Investment	– \$14.62	million
Annual Cost per Cobb Household	– \$52	per household
Contribution averages from 2018 and 2019. 280,374 Cobb households from US Census population estimates (2015–2019).		

defeated by a landslide in his Chairman re-election campaign to Mike Boyce, who campaigned on a stadium-opposition platform.⁹³ Cobb’s current Chairwoman Lisa Cupid was the lone Commissioner to vote against approving the stadium deal in 2013, when she represented District 4. As a political issue, the stadium has not proved to be popular with voters.

Though sports stadiums regularly receive public subsidies, they are not necessary to keep professional sports teams afloat or attract them to new areas. New baseball stadiums typically generate enough revenue for team owners to cover their construction costs; thus, public funding serves only to pad team owners’ pockets.⁹⁴ The San Francisco Giants’ Oracle Park was constructed almost entirely with private funds, and several recent professional sports stadiums have been constructed with little to no public funding.⁹⁵ If Cobb County residents value supporting a baseball team, then it should be self-sufficient from consumer purchases without subsidies, just like any other private local business.

What about the social benefits from Cobb citizens who do not attend games but value hosting the team for other amenities? Residents may feel community pride from knowing Cobb is the “home of the Braves” and value reveling in the afterglow of a World Series championship. Hosting the team may have positive social value beyond the price paid for tickets; however, the gains appear to be so small that they are not evident in property

values countywide (Section 8) or near the stadium (Section 7). Residential and commercial property owners ought to value land more if the team provided significant intangible benefits. This indicates that the social benefits are small—far less than \$50 per year for every Cobb household.

One possible objection to this cost-benefit calculation is that the taxes derive from different sources and are not borne equally by all Cobb citizens; in particular, businesses near the stadium remit a larger share of the taxes than taxpayers outside the special service districts. However, that the tax burden is not uniform is irrelevant. Businesses in the special services district near the stadium do pay more taxes than residents in other parts of Cobb, but these are still costs to these taxpayers, most of whom are not deriving extra revenue or amenities that justify the taxes. In addition, the costs of special service district taxes are not just borne by business owners. Customers share some of the burden through higher prices, workers through lower wages, and owners may suffer losses without deriving any benefit from the team. And tax funds collected from the same sources could have been tapped to fund different priorities—for example, not increasing Cobb’s millage rate by half a mill since the stadium deal was approved. The relevant aspect is that a private entity is being subsidized with taxpayer funds that may have better uses than funding a ballpark. Even after spreading out only the annual general fund obligation of \$6.4 million across county residents, the net tax burden is \$23 per household, which still produces a negative return on investment.

In summary, the prediction that subsidizing Truist Park would bring a substantial return on investment to Cobb taxpayers has not come true. It is also unlikely that the returns will improve over time, because stadiums tend to attract the most fans immediately after opening. A “novelty/honeymoon” effect of increased fan interest when a new stadium opens that diminishes over time is well-documented, which motivates team owners to replace their venues before their useful life is exhausted.⁹⁶ Most likely, the best days of Truist Park as a revenue generator have passed, and thus the returns flowing to the County are likely to decline rather than increase to cover its sizable funding deficit.

10

Conclusion

*There will always be those naysayers who refuse to recognize any benefit from the Braves' move into Cobb County. But for the rest who enjoy the amenities of having the major leagues in the neighborhood, it's time to play ball.*⁹⁷

— Editorial, *Marietta Daily Journal*

The Truist Park/ The Battery Atlanta development has many strong and passionate advocates. Bringing major-league caliber baseball to Cobb County is certainly desirable to baseball fans (like myself) and other community members who feel pride in their home county hosting a professional sports team. But personal preferences and wishful thinking do not make good public policy. As much as I—a life-long Atlanta Braves fan with deep roots in Cobb County—might hope, the evidence does not support the widespread claim that the \$300 million invested by the County to fund the stadium was a sound financial investment. Available financial figures demonstrate that the stadium runs significant annual deficits, which will likely continue for the remaining 25 years of the County's commitment. That conclusion reflects the honest reality, not cynical pessimism.

While I have often been painted as a “naysayer” for my criticism of hopeful projections of economic impacts, my skepticism appears to have been warranted. I have always been willing to be swayed by available evidence, but the contrary evidence is not there. My

conclusions are supported by the experience of other stadium-projects, documented in a large literature of consistent findings, and in the lack of positive effects identifiable in Cobb County's economic data. If strong economic impacts exist, they should be obvious in the data, and observations of official sources show that the returns are not even a close call. Maintaining operations and servicing the stadium debt costs Cobb households approximately \$50 per year. Furthermore, if stadium advocates are so confident in the success of the stadium, why have they had to rely on commissioned for-hire studies that obfuscate their methods and results when an impact so large should be obvious? These are not credible estimates, and no one should take them seriously as objective measures of performance.

It is understandable that financial data can be difficult to interpret, and perhaps what I have presented here is confusing. While some of my findings derive from complex methods that may be difficult for non-economists to interpret, simple comparisons of Cobb's performance relative to metro-Atlanta counties reveal that Cobb's property values and sales taxes collections have not progressed differently than most areas in Atlanta, which is not consistent with the stadium having a large economic impact on Cobb County. Since the stadium was approved, the Cobb Board of Commissioners has increased property taxes: a positive fiscal impact should have resulted in a millage rate rollback.

To provide an additional layer of credibility, I subjected my analyses presented in this report to standard academic peer review, where my methods and findings were vetted by multiple expert researchers before being accepted for publication in reputable academic journals. Though I have summarized my findings with simple descriptions in this report for ease of understanding, my complete studies with detailed methods and findings are available for any one who wants to delve into the details. My investigation has been public and transparent.

The findings I present do not mean that my fellow Cobb residents should not enjoy baseball and cheer on the local team: I still do. While I continue to oppose using public funds to subsidize professional sports, the decision to bring the Atlanta Braves to Cobb cannot be

undone. However, it is inappropriate to operate under the fiction that the stadium and team are somehow economically beneficial to the community, when all available evidence indicates that they are not. A sound public policy assessment requires acknowledging that Truist Park and The Battery have not made the average Cobb citizen any wealthier. Furthermore, other communities can learn from Cobb's experience.

Despite being ideally located and developed as part of a comprehensive mixed-use project, Truist Park is not an exception to the dismal economics of stadiums: this stadium has not been different from past publicly-subsidized stadiums that have failed to generate promised economic returns. Vociferous claims that the stadium would be a home run are like the call of an overly-enthusiastic announcer who yells in excitement at the crack of the bat; however, when it turns out to be just another routine pop-fly we expect even the most home-biased commentator to call it as an out and not lie about the ball going over the fence. It is time to admit that the Braves have not been a home run for Cobb.

Notes

1. Marietta Daily Journal (2013)
2. Klepal (2013)
3. Gillooly (2013d)
4. Humphreys (2019) reports that the average age at which major-league sports teams replace stadiums is 27 years, which means that many facilities built during the mid-1990s/mid-2000s stadium construction boom will be approaching replacement age during the next decade.
5. New stadiums and arenas constructed for MLB, NBA, NHL, and NFL teams. Sources: 1970–2010, Long (2013), pp. 19–29; 2011–2020, compiled from media reports and reported in Bradbury et al. (2022).
6. Deere (2021)
7. Lee (2016)
8. Gillooly (2013a)
9. See Klepal (2014a) for a description of MOU terms. Cobb County Communications (2022) provides a website with information and documents regarding the stadium agreements.
10. ANLBC has claimed total construction costs reached \$684 million; however, it is not clear what costs this figure includes, and Cobb County officials have been unwilling to confirm this accounting (Lutz 2018).
11. New stadiums and arenas constructed for MLB, NBA, NHL, and NFL teams. Sources: 1970–2010, Long (2013), pp. 19–29; 2011–2020, compiled from media reports and reported in Bradbury et al. (2022).
12. Long (2013)
13. Tim Lee would later state, “[The pedestrian bridge] was never meant to be part of the \$672 million. That’s somebody’s vision that it should have been, but it never was” (Murphy 2020a). However this contradicts early reports of stadium funding, including his own statements, “The bridge, which Lee said is included in the projected \$672 million cost to build the stadium, will be functional when the stadium opens in 2017” (Gillooly 2013b). The pedestrian bridge project is included in the list of transportation and infrastructure plan projects in Exhibit D of the MOU and Exhibit H of the Development Agreement: “Proposed potential Pedestrian/Transportation only bridge spanning across I-285 from the Galleria area across I-285 to the Site

near US 41/I-75/I-285, subject to best efforts to obtain funding for design and construction” (Memorandum of Understanding 2013). Bridge funding included \$5 million from Cumberland CID and \$3.6 million from a federal grant (Gargis 2018a).

14. Gargis (2017c)
15. The amended budget includes \$300 million + \$12 million in agreed added infrastructure costs + \$11 million to fund the I-285 pedestrian bridge. Unbudgeted funding includes \$34 million of additional funds provided by the County (\$70 million documented by County Transportation Director – \$24 million in original budget – \$12 million in amended budget to reimburse ANLBC) and \$14 million by ANLBC (the remainder of the \$26 million of on-site infrastructure improvements, for which it received \$12 million in the amended budget). Thus, the added expenditures by the County and ANLBC bring the total construction cost to \$743 million.
16. Gargis (2017d)
17. Stadium Development Agreement (2014), p. 28. E-mail correspondence between author, Mike Boyce, and County Attorney Deborah Dance. Boyce stated that the interpretation was not unanimous among commissioners.
18. Stadium Operating Agreement (2014), Article 21.1., pp. 36-37.
19. Gillooly (2013a) provides a concise summary of funding sources in the MOU.
20. Marietta Daily Journal (2014b)
21. Lutz (2017b)
22. Marietta Daily Journal (2014a)
23. Cobb County Board of Commissioners (2018, 2019, 2020, 2021). From 2018–2020, the presentations report property tax payments from The Battery as separate ANLBC contributions rather than as part of property tax contributions. While ANLBC may remit these taxes, it does not necessarily reflect net new revenue due to crowding out of other local business, which I identify in Section 6. Thus, I report the general fund and SSD1 property tax contributions in aggregate and adjust for crowding in the cost-benefit assessment presented in Section 9. For reference, mean annual ANLBC contributions were \$1.9 million (General Fund) and \$545,000 (SSD2).
24. Gargis (2018b)
25. Gilbert (2021)
26. Around Town (2016)
27. Gillooly (2013a)
28. [2020 Tax Bill](#).
29. Economists refer to the burden of a tax as “tax incidence,” which is shared among buyers and sellers according

to elasticities of demand and supply. Taxes also discourage marginal transactions, which represents welfare loss to both buyers and sellers, known as “excess burden” or “deadweight loss.”

30. Lutz (2017a)
31. Coates and Humphreys (2008)
32. Bradbury et al. (2022)
33. (a) American Economic Association survey of 210 Ph.D. economist members, 81 respondents (Whaples 2006). (b) Chicago Booth’s Initiative on Global Markets panel of economic experts survey of 42 members, 30 respondents (IGM Economic Experts Panel 2017).
34. Bradbury et al. (2022) provides a comprehensive summary of this research.
35. Harger et al. (2016) identified a small increase in employment in eating/drinking establishments within one mile of a sample of US stadiums; however, they found no effects on the number of establishments or employees within five miles of new stadiums. Similarly, Stitzel and Rogers (2019) found higher sales of sports industry-related sales within two miles of Oklahoma Thunder’s Chesapeake Energy Arena, but negative impacts on other entertainment establishments. Coates and Humphreys (2003, 2011) found that in cities hosting teams, Amusement and Recreation sector employees did tend to experience improved earnings; however, these gains were offset by declines in other sectors, like restaurants, bars, and retail. In total, the net impact was negative. Propheter (2019b) did not identify any positive or negative employment effects within three miles of the stadiums that lost or gained an MLS team in Denver. Propheter (2020) found that survival times for retail businesses within a half mile of Sacramento’s Golden 1 Center NBA arena were half as long as similar establishments further away, and other sports-complementary businesses (e.g., restaurants, lodging, etc.) were not affected. Propheter (2019a) identifies a positive effect of proximity on commercial rents within one mile of Brooklyn’s Barclay’s Center.
36. Humphreys and Zhou (2015) demonstrates how stadiums impact commercial agglomeration that can be positive or negative. Humphreys and Pyun (2018) found significant traffic costs on MLB game days. Pyun (2019) and Mares and Blackburn (2019) identified increased criminal activity associated with MLB games.
37. The Contingent Valuation Method relies on resident surveys contacted via phone or mail, like those employed for political polling, in which a sample of individuals is asked a series of questions to determine how much they might be willing to pay to host a sports team. Percent valuations calculated from Matheson (2019).
38. Studies that identify positive relationships between stadiums and property values: Carlino and Coulson (2004), Tu (2005), Feng and Humphreys (2012), Feng and Humphreys (2018), and Keeler et al. (2021). Studies that identify negative relationships: Humphreys and Nowak (2017) and Propheter (forthcoming). Studies that identify mixed or null effects: Coates et al. (2006), Dehring et al. (2007) and Huang and Humphreys (2014).

39. Around Town (2013)
40. Gillooly (2013c)
41. Murphy (2019a)
42. Tucker (2017a)
43. Cobb County Board of Commissioners (2019) reports The Battery Atlanta as 92% occupied in 2018. Like most developments, The Battery continues to evolve, adding and losing tenants. By the beginning of the second season, it was operating like a full-scale mixed-use development.
44. Liberty Media (various years)
45. Tucker (2017b) provides 2017 development timeline. 2017 operational capacities reported in Gargis (2017a) and Cobb County Board of Commissioners (2018).
46. *Forbes* publishes annual estimates of team revenue for all major US sports leagues (Birnbaum 2021). Calculations: $39\% \times \$404 \text{ million} = \158 million . $\frac{\$38}{[\$158+\$38]} = 19\%$.
47. According to its [2021 Annual Report](#) (p. 39), Walmart's 2019 net US sales were \$332 billion in 4,769 stores, which translates to \$70 million per store.
48. [Good Jobs First](#) provides a list of local economic development incentives provided to Walmart in Georgia, which typically are less than \$2 million per store.
49. Tucker (2013)
50. Boston Globe (1915)
51. Full quotation compiled from Gendzel (1995) and LIFE (1953).
52. Bisher (1966), p. 167
53. Humphreys and Plummer (1995)
54. Cassidy (2013)
55. Delaney and Eckstein (2003a)
56. Tim Lee identified Chamber Executive Brooks Mathis as one of the first people he reached out to after being contacted by the Mike Plant (Murphy 2019b).
57. Sociologists Kevin Delaney and Rick Eckstein have documented the importance of local growth coalitions for the success of stadium advocacy campaigns in multiple case studies (Delaney and Eckstein 2003b, 2007).
58. Gendzel (1995)
59. Brailsford & Dunlavey (2013, 2016)
60. Findings in Miller (2002) indicate stadium construction substitutes for other construction projects, resulting in no new job creation in the construction industry.
61. It also cites the creation of 1,074 "non-profit positions." It is unclear what these positions are. Including these positions lowers the earnings per job to \$3,800.

62. CEDR (2018)
63. Gargis (2018c)
64. Marietta Daily Journal (2018b). In 2021, *Marietta Daily Journal* self-published a collection of its articles and photos as a coffee-table style book, which includes many articles cited in this report. The book is available for purchase directly from [the publisher](#) (Townsend 2021).
65. Delaney and Eckstein (2003b,a)
66. The report does not credit an author, though CEDR Director Alfie Meek presented the study when it was released in 2018 and acknowledged authoring the report in the media (Lutz 2018). It is also notable that Meek projected that the minor-league Gwinnett Braves stadium would generate \$15 million year in new economic development while working as an economist for Gwinnett County (Pearson 2009). That development never materialized and the revenue generated for the County has fallen well short of covering the public funding (Klepal 2014b).
67. This is a reference the infamous 1908 baserunning gaffe, known as “Merkle’s boner” in baseball lore, when Fred Merkle failed to advance to second base on the would-be game-winning hit, which cost the New York Giants the NL pennant.
68. The company website (<http://www.lociapp.com/>) states that the software is “licensed by economic development agencies/departments, chambers, development authorities, and local governments throughout the United States.” It states that the software was completely redesigned in 2013 and is now owned and supported by EIG. EIG’s website (<https://economicimpact.com/>) lists its principals as Robert Lann—a co-developer of LOCI™ who is retired from Georgia Tech’s Enterprise Innovation Institute, which houses CEDR—and Alfie Meek, current Director of CEDR.
69. LOCI™ is also a unique software application for commissioned economic impact reports, which typically rely on software such as IMPLAN, REMI, or RIMS-based input-output models. Though these other programs’ estimates are not widely trusted by economists, economists are somewhat familiar with their use in commissioned impact reports.
70. Kalambokidis and Leishman (2001)
71. The SPLOST project list pre-dates the stadium and thus no sales tax revenue may be used to fund the stadium directly.
72. The report credits this estimate to Georgia Department of Economic Development in the text, but a figure credits the source as “Leisure Visitor Profile – State of Georgia” from the travel research firm D.K. Shifflet & Associates Ltd. I was not able to locate this source.
73. Crompton (1995); Hudson (2001); Wassmer et al. (2016)
74. CEDR (2018), p. 14

75. The report states, “it is impossible to know how much of [retail sales at The Battery] represents actual new sales in Cobb County versus the reallocation of existing sales” (p. 15).
76. Wassmer et al. (2016)
77. Gargis (2019)
78. Cobb County has two public school systems that receive a share of school sales tax revenue: Cobb County School District (92.7%) and Marietta City Schools (7.3%) (Georgia Department of Revenue 2022).
79. It is possible that the state may experience a slight increase in spending from extra out-of-state spending at the new stadium as the results of a novelty effect that produces a temporary boost in attendance that diminishes over time. Overall, any novelty gains are likely insubstantial.
80. Around Town (2017)
81. Athey and Imbens (2017)
82. Local sales can be imputed by dividing sales tax revenue by Cobb’s share of the sales tax rate (0.02). Crowding out percentage estimated as percent of difference between total Cobb spending and Battery spending ($-\$78 \text{ million}/\$228 \text{ million} = -34\%$).
83. Murphy (2020b)
84. Hendrick (2017); Marietta Daily Journal (2018a)
85. Metro-Atlanta has added several other CIDs since 2010; however, they have not been in existence long enough to be used in this synthetic control method comparison. Their inclusion would shorten the pre-treatment period used for matching districts by characteristics.
86. Synthetic controls for announcement and opening treatments are similar. The synthetic control based on announcement date treatment is estimated from the following CIDs (weights in parentheses): Town Center (0.893), Perimeter-DeKalb (0.059), Midtown (0.036), Downtown (0.011), and Perimeter-Fulton (0.002). The synthetic controls for stadium opening date treatment derive from: Town Center (0.875), Perimeter-DeKalb (0.068), Midtown (0.035), and Perimeter-Fulton (0.022). Sensitivity tests that included different CIDs produced similar estimates reported in Bradbury (2022b).
87. Gargis (2017b)
88. Marietta Daily Journal (2019)
89. Donor counties (weights) for property assessments levels, announcement treatment: DeKalb (0.754) and Gwinnett (0.246). Donor counties for property assessments levels, opening treatment: DeKalb (0.785) and Gwinnett (0.215). Donor counties for property assessments percent changes, announcement treatment: Gwinnett (0.536), Forsyth (0.249), DeKalb (0.125), and Clayton (0.081). Donor counties for property assessments percent changes, opening treatment: Carroll (0.410), Gwinnett (0.352), Fayette (0.307), and DeKalb (0.060).

90. The 2013 millage does not include state millage of 0.15, which was phased out by 2016.
91. Marietta Daily Journal (2018b)
92. The \$26 figure refers to the 0.33 mills assessment on a \$200,000 Cobb home, which was diverted from existing park bonds to fund the stadium (Gillooly 2013d).
93. Gargis (2016)
94. Poitras and Hadley (2006)
95. NFL: SoFi Stadium (Los Angeles), MetLife Stadium (New York), and Gillette Stadium (Boston). NBA: Chase Center (San Francisco). NHL: T-Mobile Arena (Las Vegas) and Nationwide Arena (Columbus).
96. Coates and Humphreys (2005); Poitras and Hadley (2006); Bradbury (2019)
97. Marietta Daily Journal (2018a)

Appendix A

Evaluating economic impact studies of Truist Park

Stadium advocates often commission private economic impact reports as part of their campaign to persuade elected leaders that sports stadiums are worthy of public subsidies. However, unlike academic studies that are assessed by anonymous subject experts through a standardized peer review system, commissioned reports are normally not vetted for accuracy, nor is there an agreed set of methodologies or reporting standards for these studies to meet. Thus, policymakers may lack the ability to evaluate the multitude of studies. As a remedy, Wassmer et al. (2016) develops a list of questions for evaluating economic impact studies of sports stadiums.

Table A1 lists the questions, as written in Wassmer et al. (2016), short explanations that further explain the reasoning behind the questions, and assessments the economic impact studies of Truist Park conducted by the Cobb Chamber of Commerce and my own analyses.

Table A1: Evaluative Questions of Economic Impact Studies of Truist Park/The Battery
Atlanta

Question	Explanation	Brailsford & Dunlavey (2013, 2016)	CEDR (2018) <i>Fiscal Impact</i>	Bradbury (2022b) <i>CID Property</i>	Bradbury (2022a) <i>Cobb Property</i>	Bradbury (2023) <i>Sales Taxes</i>
Findings (on annual basis):		\$5.7 million in benefits \$5.9 million in benefits	\$18.9 million in added tax revenue	No impact	No impact	\$3 million in added sales tax revenue
1. Does the study adjust for the inappropriateness of counting nonlocal casuals, nonlocal time switchers, and local residents who would have spent regardless?	Casuals are visitors who attend games because they happen to be in town. Time switchers are people already planning to visit the host jurisdiction but adjust visit timing to attend a sporting event. Thus, even though this is nonlocal spending, it does not represent net new spending.	No.	No. It observes attendance by non-Cobb residents in 2017. It does not account for casuals or time switchers.	Yes. The aggregate comparison captures impacts of net new economic activity.	Yes. The aggregate comparison captures impacts of net new economic activity.	Yes. The aggregate comparison captures impacts of net new spending.
2. Does the study adjust for the possibility of redistributed labor?	Does it account for already employed workers switching jobs? This can increase wage pressure, which is good for resident workers, but discourages relocation of new businesses.	No.	No.	Yes. The aggregate comparison accounts for redistributed labor.	Yes. The aggregate comparison accounts for redistributed labor.	Yes. The aggregate comparison accounts for redistributed labor.
3. Does the study adjust for the possibility of import substitution?	Does it account for retained spending from locals who otherwise would have spent income outside the jurisdiction?	No.	No.	Yes. The aggregate comparison accounts for import substitution.	Yes. The aggregate comparison accounts for import substitution.	Yes. The aggregate comparison accounts for import substitution.
4. Does the study adjust for the possibility of crowding out?	Does it account for dampened consumption to existing local businesses that compete for similar customers?	No.	No.	Yes. The aggregate comparison accounts for crowding out.	Yes. The aggregate comparison accounts for crowding out.	Yes. It explicitly estimates crowding out.

Table A1: (continued)

Question	Explanation	Brailsford & Dunlavey	CEDR (2018)	Bradbury (2022b)	Bradbury (2022a)	Bradbury (2023)
5. Does the study adjust expenditure and employment estimates for novelty effects?	Novelty effects in baseball tend to last 8-10 years (Coates and Humphreys 2005; Bradbury 2019), thus attendance declines over time are expected.	It overestimates sustained attendance for first three years and does not account for a decline.	No, it does not account for the temporary influx of new fans that tends to wear off after a few years following a new stadium opening.	Not enough time has passed, but it acknowledges that the estimated effects are anticipated to diminish over time.	Not enough time has passed, but it acknowledges that the estimated effects are anticipated to diminish over time.	Not enough time has passed, but it acknowledges that the estimated effects are anticipated to diminish over time.
6. Does the study discuss specific types and sources of intangible social benefits?	Are there hosting benefits from civic pride and quality-of-life amenities that are not quantified in standard economic impact metrics.	Theoretical existence is discussed, but not quantified. Not the intent of the analysis.	Mentioned, but not quantified. Not the intent of the analysis.	Yes. Intangible benefits should be capitalized into property values.	Yes. Intangible benefits should be capitalized into property values.	No. It is not a subject of the study.
7. Does the study use a survey of residents to determine the importance of intangible social benefits?	Surveys are sometimes used to measure resident's value of intangible benefits.	NA	NA	NA	NA	NA
8. Does the study use a survey of residents to gauge the importance of a team or an event to the community?	Surveys are sometimes used to measure resident's value of intangible benefits.	NA	NA	NA	NA	NA
9. Does the study use a survey of residents to gauge the importance of a team or an event relative to other community goals?	Surveys are sometimes used to measure resident's value of intangible benefits.	NA	NA	NA	NA	NA

Table A1: (continued)

Question	Explanation	Brailsford & Dunlavey	CEDR (2018)	Bradbury (2022b)	Bradbury (2022a)	Bradbury (2023)
10. Does the study estimate a specific impact for only the jurisdiction(s) subsidizing the venue/event?	Refers to impacts on local tax jurisdictions (e.g., districts, city, county, metro area, etc.).	Yes. Cobb County.	Yes. Cobb County.	Yes. Cumberland CID.	Yes. Cobb County.	Yes. Cobb County.
11. Does the study use an income multiplier and report its value (of any type)?	Income multipliers attempt to account for repeat spending of direct spending on sports events that ripple through to other economic activity. Multiplier > 1 indicates larger impact on overall economy.	Yes. Reports separate earnings multipliers for job classifications (~ 1.5).	Unclear. It uses the “LOCI” proprietary model. No further explanation or description of the model is provided. It is not a widely-used or accepted model.	No. Aggregate assessment should estimate any multiplier that exists.	No. Aggregate assessment should estimate any multiplier that exists.	No. Aggregate assessment should estimate any multiplier that exists.
12. Is the logic of the chosen multiplier clearly stated and reasonably defended?	Is the source of the multiplier provided and are its methods justified as reasonable?	No.	No.	NA	NA	NA
13. Does the study incorporate future economic development into its impact estimates?	Impact analyses sometimes overstate impacts by assuming development that may not occur.	Yes. It includes estimate of ancillary development in the report, but they are not included in total benefit estimates.	Yes. It estimates a halo effect on “area of influence” greater than Cumberland CID, which is inappropriately large.	Yes. Future development effects should be capitalized into property values.	Yes. Future development effects should be capitalized into property values.	Yes. Impacts of induced spending should be reflected in countywide taxable sales.

Table A1: (continued)

Question	Explanation	Brailsford & Dunlavey	CEDR (2018)	Bradbury (2022b)	Bradbury (2022a)	Bradbury (2023)
14. Are assumptions about the probability of development and magnitude of investment explicit?	Does it consider the uncertainty nature of development?	No.	No.	No assumptions needed. Measures observed outcomes.	No assumptions needed. Measures observed outcomes.	No assumptions needed. Measures observed outcomes.
15. Does the study discuss shifting economic activity within a jurisdiction as a benefit?	Does it account for relocation of existing local business activity to new venue?	No.	No.	Yes.	Yes.	Yes.
16. Does the study discuss project benefits in the context of public costs?	Does it account for the benefits for forgone public investments from the stadium funding that might yield higher returns (e.g., roads, libraries).	No.	No.	NA. Not a cost-benefit analysis.	NA. Not a cost-benefit analysis.	Yes. Includes cost-benefit comparison. It notes the potential for alternate investments with greater returns.
17. Does the study discuss capital and ongoing costs such as facility construction, future renovations, land acquisition, infrastructure improvements, municipal services, and transaction costs?	Does it account for required additional costs beyond the initial public capital investment.	Yes. It includes estimates for maintenance and repairs.	Yes. Notes the existence of the capital maintenance fund.	NA. Not a cost-benefit analysis.	NA. Not a cost-benefit analysis.	Yes. Notes the existence of the capital maintenance fund.

Table A1: (continued)

Question	Explanation	Brailsford & Dunlavey	CEDR (2018)	Bradbury (2022b)	Bradbury (2022a)	Bradbury (2023)
18. Does the study calculate expenditure estimates based on different assumptions about the percentage of attendees that are nonlocal casuals, nonlocal time switchers, and local residents?	Does it present alternate models with different assumptions to evaluate its sensitivity to the assumptions?	No.	No. It uses one estimate of non-locals (without accounting for casuals or time switchers) from one season.	No assumptions used. Measures observed outcomes.	No assumptions used. Measures observed outcomes.	No assumptions used. Measures observed outcomes.
19. Does the study calculate expenditure and employment effects with different multipliers?	Does the study calculate expenditure and employment effects with different multipliers?	Yes. Jobs and earnings multipliers are reported.	Unclear. Not reported.	No. Aggregate assessment should estimate any multiplier that exists.	No. Aggregate assessment should estimate any multiplier that exists.	No. Aggregate assessment should estimate any multiplier that exists.
20. Does the study calculate real estate development impacts based on different probabilities of development actually occurring and based on different investment levels?	Does it present alternate models with different assumptions to evaluate its sensitivity to the assumptions?	No.	No.	No assumptions used. Measures observed outcomes.	No assumptions used. Measures observed outcomes.	No assumptions used. Measures observed outcomes.

Appendix B

Synthetic control method

Measuring the impact of a new economic development project like a sports stadium on a local economy is difficult. Simple before-and-after comparisons of relevant of economic outcomes can be misleading, because local economies grow and shrink over time for many reasons. Identifying a cause-effect relationship requires separating the stadium effect from other potential contributing factors. The synthetic control method provides a strategy for isolating the effects of specific changes to determine causality.

The synthetic control method was designed by economists and political scientists for the purpose of estimating causal effects of policy interventions or “treatments” (e.g., new law, government program, new facility, etc.) that are often applied to one of several similar jurisdictions/units (e.g., counties, states, countries, etc.). It operates by comparing outcomes of the “treated” and “untreated” units over time to identify deviations in outcomes that may indicate a treatment effect. This type of analysis is useful, because successful policies can be identified and implemented elsewhere, while unsuccessful policies can be avoided, based on real-world experience. The approach exploits on the treated unit’s similarity with untreated units to account for non-treatment factors associated with the outcome of interest. If the treated unit’s outcomes changed after the treatment, relative to an expectation informed by

the outcomes of similar untreated units, then it is reasonable to infer that the intervention contributed to the change.

The synthetic control method has been presented and refined in several papers (Abadie and Gardeazabal 2003; Abadie et al. 2010, 2015), and it is well summarized in Abadie (2021). Though the method is too complex for a detailed description here, this appendix provides the intuition that motivates its design and a brief summary of how the procedure works, with an example. For further reading, economist Scott Cunningham (2021) provides an accessible general summary and demonstration of the method in his book on empirical methods for identifying causal inferences. Economists Robert McClelland and Sarah Gault also provide a short primer on using the synthetic control approach for policy analysis (McClelland and Gault 2017).

The approach uses an experimental design that emulates a lab experiment, where the outcomes of a treatment group of subjects is compared to the outcomes of a control group of similar subjects that did not receive the treatment. For example, treatment group subjects are given caffeine pills and the control group subjects receive benign sugar pills. Both groups are assigned identical tasks before and after taking their respective pills, and the changes in performance between groups are compared to identify and estimate any effect of caffeine on task performance. When outcomes between the treated and control groups differ considerably, it suggests that the treatment (caffeine) contributed to the difference.

Because controlled lab experiments are not possible in a real-world setting, researchers use a sample of real-world observations from similar, but untreated, subjects to estimate a “control” counterfactual outcome of the treated unit’s expected outcome without the treatment. An obvious limitation of this approach is that a true counterfactual outcome is unobservable by its nature; therefore, researchers must take great care in estimating the counterfactual expectation, which is why synthetic control comparisons are subjected to multiple robustness checks to ensure they are not sensitive to changes in data and sample.

The world is full of many unique geographic regions, none of which are perfectly alike,

but many units often share several characteristics. Comparing Cobb County to Gwinnett County is likely imperfect, because though they are both suburban Atlanta counties, they differ in some important ways. However, comparing Cobb to a large sample of Georgia’s 158 other counties loses some of the important ways that Cobb and Gwinnett are quite similar, because these suburban-Atlanta counties have more in common with each other than most other counties in the state. Instead of comparing Cobb to one chosen control county or a simple average of many control counties, the synthetic control method constructs a counterfactual expectation from an average of the most similar counties, weighted according to their degrees of similarity. In this case, I use counties included as part of the Atlanta Metropolitan Statistical Area (MSA) as the control sample. Econometricians Susan Athey and Guido Imbens describe the weighted average as a “systematically more attractive” comparison than sample averages or matched comparisons, “The simplicity of the idea, and the obvious improvement over the standard methods, have made this a widely used method in the short period of time since its inception” (Athey and Imbens 2017, p.9).

In order to identify the best real-world control counties, the approach exploits the co-movement of relevant factors—how closely the factors move together—between Cobb (treated with a new baseball stadium) and multiple similar untreated metro-Atlanta counties. It selects and weights counties by observing economic and demographic characteristics and past outcomes of Cobb and its control counties prior to the stadium-treatment. This is accomplished with a pre-determined computer algorithm designed to match outcomes of the treated unit (Cobb) to outcomes of untreated units (metro-Atlanta counties) that best predict the observed outcome in Cobb *before* the stadium came to be. Units that co-move before a treatment are likely to progress similarly over time. The algorithm selects untreated “donor” counties that match the movement of Cobb, and then weights outcomes of donor counties (weights sum to one) to produce a synthetic control that mimics the trajectory of the outcome that Cobb likely would have experienced without a stadium. Cobb’s observed

outcomes are then compared to the synthetic Cobb's expected outcomes to estimate the impact of the stadium.

I use the example from my study of Cobb sales taxes revenue presented in Section 6 to demonstrate the application of the synthetic control method. In this case, Cobb County received the treatment of new stadium in the second quarter of 2017, and the counterfactual outcome is no stadium being built. I use metro-Atlanta counties' economic experiences to construct Cobb's expected sale tax revenue per capita without the stadium. Of the 28 remaining Atlanta MSA counties, five are not suitable for estimating Cobb's tax revenue: Fulton lost its MLB team, and DeKalb, Fayette, Haralson, and Morgan counties all implemented sales tax rate increases after the stadium opened that boosted their sales tax collections for an unrelated reason. (Including the latter counties in the analysis makes it appear as if Cobb experienced a decrease in sales tax revenue after the stadium opened.) Thus, 23 counties that did not open an MLB stadium in 2017 remain available to serve as a "donor pool" of control counties to construct a synthetic Cobb. The computer program uses an iterative method to compare county characteristics to select and weight donor counties to construct the synthetic control that best matches Cobb's sales tax revenue *prior to the stadium opening*. This last part is important, because the weights should reflect how the economic factors move together without the presence of a stadium. The program selects the most similar counties and weights their outcomes according to the relative similarity to Cobb in order to minimize the difference between observed and synthetic outcomes before the stadium opened.

Figure 11 (also reported as Figure B.2(b) in this appendix) shows that actual and synthetic Cobb values move together quite closely prior to the stadium opening, which indicates the weighted average of the donors does a good job of estimating the sales tax revenue in Cobb. This provides confidence that the synthetic Cobb predicts Cobb's per capita sales tax revenue well, and likely would progress similarly during the period after the stadium was constructed.

Figure and Table B1 show the location of the donor counties and their weights used for constructing synthetic Cobb. Gwinnett contributes the greatest weight to synthetic Cobb, but it is not the sole contributor as the weighting procedure selects other suburban counties that improve the prediction of Cobb’s per capita sales tax revenue. The progression of sales tax revenue collections in Gwinnett and several other counties provide an even better counterfactual expectation. Note that this difference is not observable in average comparisons: the synthetic control method indicates a positive effect of The Battery on spending that is not otherwise observable.

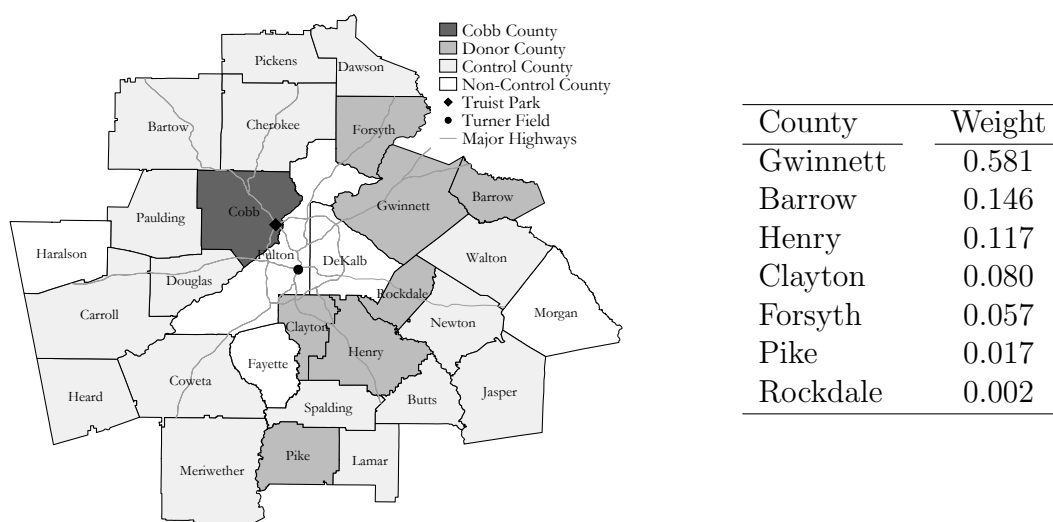


Figure B1 & Table B1: Selected County Donors and Weights

Table B2: Pre-Stadium Means of County Characteristics

Variables	Cobb County		All
	Actual	Synthetic	Control Counties
Ln (Income per capita)	\$10.75	\$10.44	\$10.40
Sales Tax Rate	6.00%	6.44%	6.91%
Population Density (population/square miles)	2,087	1,478	452
Land Area (square miles)	344	345	298
Distance from Turner Field (miles from county seat)	18	28.53	37.13
Sales Tax Revenue per capita (1st Quarter, 2010-2016)	\$87.00	\$86.99	\$101.15
Sales Tax Revenue per capita (2010)	\$90.09	\$90.08	\$110.05
Sales Tax Revenue per capita (2013)	\$89.31	\$89.31	\$102.63
Sales Tax Revenue per capita (2016)	\$93.38	\$93.36	\$103.78

Quarterly means from Bradbury (2023).

Table B2 demonstrates that the weighted means of the matching characteristics (or

covariates) by synthetic Cobb are closer to observed Cobb than the average of all MSA control counties. Since the weighted average of the selected donor counties predicts Cobb County's tax revenue well, it provides a reasonable objective estimate of what tax revenues would have been absent the ballpark.

Thus, the post-2017 deviation in observed sales tax revenue above the synthetic control in Figure 11 suggests that the stadium opening contributed to the growth in sales tax revenue. This inference is strengthened by the fact that the deviations are largest during the baseball season, when the influx of external spending is expected.

Robustness check

It is also important to evaluate whether the estimates reflect mistakes in the model's design rather than represent a reasonable expectation of post-treatment outcomes, because synthetic controls may be sensitive to many factors. Therefore, researchers are expected to conduct several validity tests to demonstrate the credibility of the synthetic control comparisons. I report the results of many such tests in my published papers, all of which indicate that the method generates reasonable estimates. As an example, I present the results of one robustness test, the in-time placebo test, to demonstrate how the tests work.

One suggested validation exercise is to observe predicted outcomes of a synthetic control generated from the same characteristics well before the treatment was implemented to see how well the synthetic outcomes predict actual outcomes when they still can be observed. While it is impossible to know for certain what Cobb's sales tax revenue would be without a stadium after March 2017, it is possible to observe how well the factors used to construct synthetic Cobb predicted sales tax revenue before the stadium opened. I use the same county characteristics to select county donors and weights well before the stadium opened. This is a type of placebo test, because it falsely assigns a premature-treatment, like giving a sugar pill to medical subjects when testing the efficacy of a new drug, to observe if a response is generated by the method itself, rather than a true response to the treatment. If

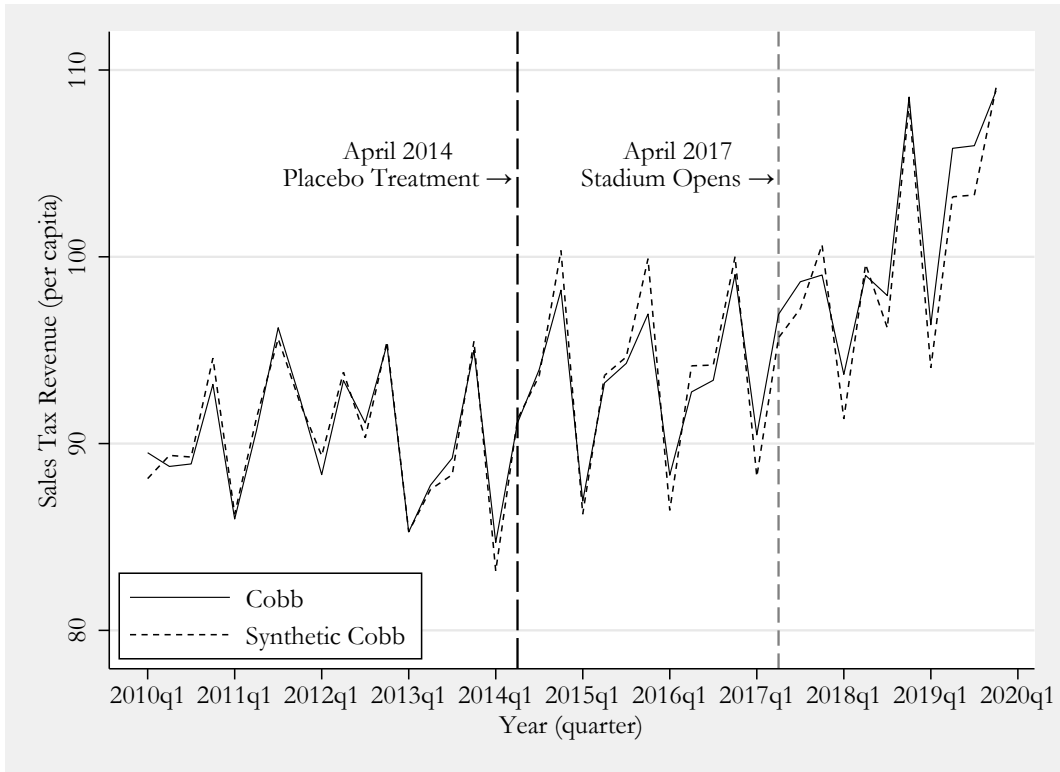
the synthetic control generated from the same characteristics during an earlier period predicts well, then there should be little deviation between synthetic and observable outcomes after the placebo-treatment and before the actual treatment, which builds confidence that the synthetic control represents a realistic counterfactual outcome.

Thus, I conducted the placebo test by setting a premature placebo treatment in the second quarter of 2014, three years before the stadium opened, which permits observing synthetic and actual outcomes before the stadium opens. Figure B.2(a) reveals that synthetic Cobb closely tracks actual Cobb sales tax revenues closely and without bias until the stadium opens in 2017, when a positive deviation is consistent with a small increase in sales tax revenue. Its estimates are similar to those reported in Figure B.2(b) (identical to Figure 11 presented in Section 6), even though the placebo synthetic control is estimated from less-recent observations. Actual and synthetic Cobb move closely together before the stadium opened (from second quarter 2014 through first quarter 2017) before exhibiting greater divergence after the stadium opened. Thus, the in-time placebo test indicates that synthetic Cobb represents a reasonable estimate of a counterfactual Cobb in which no stadium opened in 2017, which provides confidence in the synthetic control comparison.

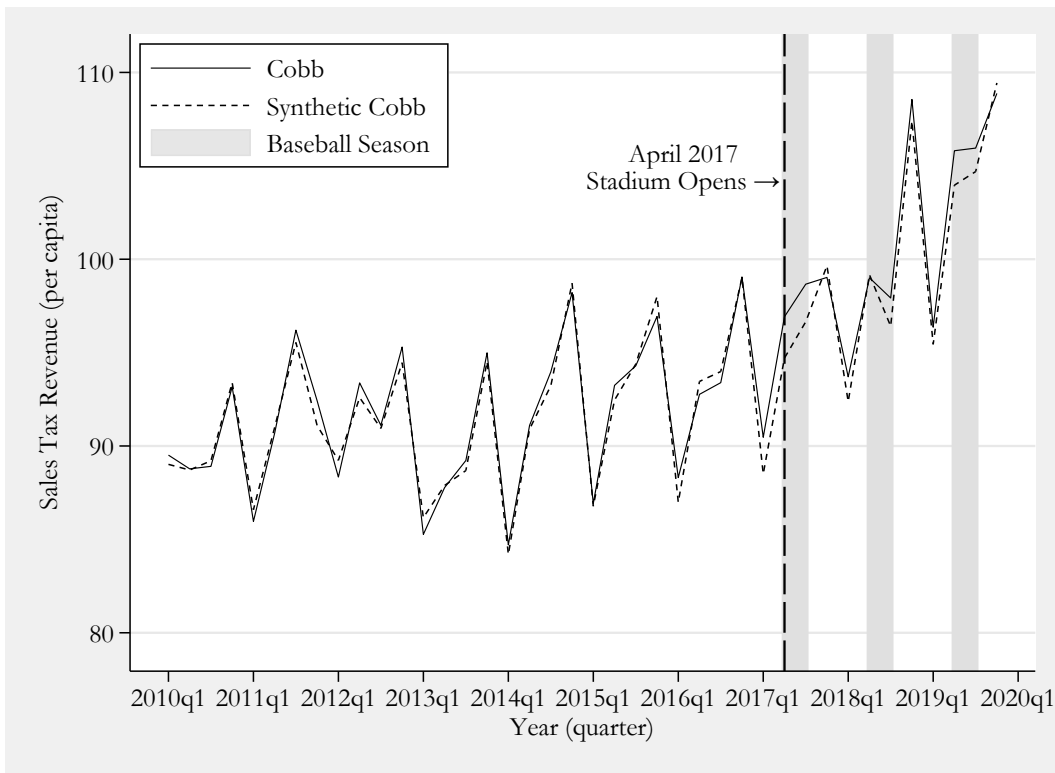
In addition to the in-time placebo test, I conducted other falsification exercises recommended when implementing synthetic control comparisons for all studies summarized in Sections 6, 7, and 8, which I describe in detail in the individual papers. The other robustness checks included are as follows.

Assigning false placebo treatments to other counties/CIDs: Tests whether assigning a stadium treatment to non-stadium counties produces similar effects or stronger effects for Cobb. Cobb did not experience significantly stronger effects than placebo counties, which is consistent with limited stadium impacts.

Testing for the undue influence of specific donor counties: When selected donor counties are removed from the control group, the remaining counties produce similar esti-



(a) Premature stadium-treatment assignment



(b) Original stadium-treatment assignment (Figure 11)

Figure B2: In-Time Placebo Test

mates, which indicates the results are not being driven by characteristics of counties that are not appropriate donors.

Testing different combinations of county characteristics: Synthetic controls created from different county characteristics do not produce meaningfully different estimates.

In all cases, after accounting for potential sources of error, the selected county characteristics appear to generate reasonable estimates that are relevant for estimating the economic impact of the stadium development on Cobb County.

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