Does NBA Revenue Matter to Local Governments?

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Abstract

This study tested the relationship between NBA revenue fluctuations and tax revenue collections in mid-sized cities U.S. cities that host NBA teams. It used the 2016 NBA media distribution deal with Turner and ESPN as a natural experiment to investigate whether NBA revenue increases translation to tax revenue increases for cities. The exploratory section makes a case study of Philadelphia. The main section expanded the analysis to 17 cities, introduced several economic controls, and divided cities into experimental and control groups based on the presence of a wage and/or sales tax system and the presence or absence of an NBA team. Results in both sections showed no consistent, significant impact of NBA financial gains on host cities' tax revenue collections.

Keywords: NBA Revenue, Sales Tax Wage Tax Revenue, Municipal Finance, Economic Impact

Developers associated with the Philadelphia 76ers want to build a new basketball arena near the city's downtown Chinatown. At the time of this writing, City Council had yet to definitively block or approve the project but will likely make a final decision sometime in 2024.

The proposed new arena would border the major cultural center of Chinatown to the north. Project supporters have argued a new basketball arena in the area would cannibalize restaurant revenue—a central industry in the neighborhood—and increase the cost of living and put additional pressure on residents. To the proposed stadium's south side, workers at a major hospital and a fire station would have to compete with sports fans for traffic infrastructure and road space (Hunt).

Developers must persuade policymakers that benefits like new jobs, increased foot traffic, and new tax revenue for local and state governments outweigh all potential risks. They projected the arena would produce $800 million in tax revenue for the Philadelphia General Fund and $200 million for the School District over the course of 29 years: $74.7 million in personal income tax, $248.9 million in sales and use tax, $118.8 million in corporate net income tax, $28.8 million in liquor tax, and $800,000 in realty transfer tax (76DevCo).

The argument rests on the assumption that a policy decision benefiting an NBA franchise will also benefit the host city financially. To test this assumption, this study looks at the NBA's last

major financial victory for evidence either for or against the idea that the NBA's finance welfare connects in some way to the financial welfare of cities that host NBA teams.

The 2016 NBA media distribution deal with Turner and ESPN, which significantly increased NBA franchise revenue and player payrolls nationwide, provided a natural experiment to this end. Prior research has shown that the 2016 media distribution deal between the NBA and Turner-ESPN corresponded with increases in NBA revenue and payrolls (Keefer 2021). The current study will show that the deal indeed produced measurable gains for the NBA, but NBA team hosting cities did not see noticeably more tax revenue gains in subsequent years than cities that do not host NBA teams.

The exploratory stage of the test made a case study of Philadelphia. A second and more rigorously controlled and calculated survey expanded the test across 17 cities with and without sales and wage tax systems, and that do and do not host NBA teams. The main study produced results consistent with the Philadelphia findings: the large and sudden influx of revenue to the NBA in 2016 did not correlate to noticeable increases in municipal government sales or wage tax revenues.

Overestimation of the financial benefits professional basketball provides Philadelphia is a tradition that dates back to at least the 1980s. The local professional sports industry hired economist Edward Shils to assess the economic benefits the 76ers provided for Philadelphia found the 76ers generated about $6.9 million a year in annual tax revenue for Philadelphia in the

1980s. Economists have since used Shils' work as a teachable example of techniques frequently employed with the intention to overestimate the economic impacts of such development projects (Cromley, Baade).

Philadelphia's Commerce Department estimated the Spectrum contributed $6.2 million in tax revenue and generated $8.8 million for the City in a newly constructed 76ers venue (Shropshire and Kelly, p. 21). City Council approved the construction of Spectrum II, now known as the Wells Fargo Center, after the 76ers threatened to leave Philadelphia in 1991. When the private financing negotiations behind the new construction project stumbled, an *Inquirer* op-ed expanded the promised annual municipal tax revenue figure to $12 million (Macnow, Daughen, Anonymous).

To test whether the 76ers and their home venue met these predictions, we requested relevant documents from the City of Philadelphia. The Law Department found no responsive records for the lease agreement between Wells Fargo Center and the City and the Center's annual financial statements.

The lease document, available on file at the Department of Records, indicated developers and the property management company, Spectrum Arena Partners, LP, paid no realty transfer tax (Philadelphia Authority for Industrial Development, 1994. p. 44, 78, 388). A document in Bessey v. Spectrum Arena, filed by Spectrum Arena's attorney in US Federal Court, confirmed Spectrum pays no parking tax, and a fixed $2 million annual payment-in-lieu-of-taxes in place of property

tax (Cozen O'Connor, 2011). The 76ers and their property management company, according to the court documents, do pay other taxes typical to a company operating in city limits: Wage, Business Privilege Tax, Sales, Amusement, and Net Profits Taxes.

In the exploratory phase of this study, we estimated the 76ers' municipal tax revenue contributions to Philadelphia between 2001 and 2022, using Forbes financial data on the team and consolidated municipal annual financial reports. We looked at Philadelphia tax revenue and used tax rate data to calculate the 76ers' estimated tax contributions: an uncontrolled estimate limited in scope to Philadelphia. 76ers player payrolls markedly increased in 2016.

The 2016 NBA-Turner-ESPN deal accounted for this change in the 76ers' contributions. A broadcasting agreement between the NBA, Turner, and ESPN took effect that year. The deal represented an estimated $24 billion, superseding the NBA's prior $2.67 billion deal. The media deal produced a historically significant NBA revenue influx. Tax revenues in Philadelphia, magnitudes larger in scale, registered no noticeable change that year.

Literature Review

Sports economists have used team relocations, venue construction, and lockouts and strikes as natural experiments to this effect, but the last major 2011 NBA stoppage resulted in only 11 un-played NBA home games over the course of 161 days. League-wide, the partial loss of a single season represented hundreds of millions of dollars due to a lockout by team management over a

contract dispute. Locally, the Philadelphia City Controller's Office estimated potential tax revenue losses at only around $90,000 per game (Gambacorta).

The majority academic consensus holds that public investment in sports mostly produces losses, and occasionally neutral results or slim gains (Bradbury et al., 2023, p. 2). The few voices of dissent have generally held that the public benefits of professional sports may only be quantified in extra-financial metrics like civic pride and personal inspiration and have favored qualitative methodologies like phone surveys over quantitative assessments.

Bradbury et al. has recently and diligently catalogued the larger history of work on the economic effects of all professional sports leagues over the last several decades. The current review focused more narrowly on NBA teams and stadiums and the tax revenue local governments collect from them.

The contributions of professional basketball to tax revenue, observable at the state level, represent fractions of those from professional football and baseball (Belleville). The most granular end of the research has differentiated between individual NBA games, and game types: playoff, regular season, home, away. NBA playoff games generated positive revenue, versus regular home and away games, which produced net revenue losses (Baade, Baumann, and Matheson, 2008, p. 800).

Other studies examined economic fluctuations in local government tax revenue before and after NBA team relocations. Dean et al. tested for sales tax revenue fluctuations during Oklahoma City's transition from hosting no professional sports teams to hosting one NBA team. After Oklahoma City raised the sales tax rate to fund the construction of an NBA arena, sales tax revenue increased only slightly in subsequent years (2017, p. 8).

Propheter (2012) found no proof of economic development following the construction of any NBA arenas between 1994 and 2009 (p. 450). Gilchrist expanded and updated Propheter's work to include more cities, updated the data through 2018, and considered additional variables like franchise value and team success. The thesis documented no evidence of economic development in cities with newly built NBA venues when controlling for exterior factors.

Most prior tests for impact on city tax revenue by professional sports have focused solely on sales tax, overlooking the small group of U.S. cities that heavily rely on wage taxes like Philadelphia. Philadelphia charges the country's highest wage tax rate. Wage tax revenue is currently the city's largest single tax revenue source (City of Philadelphia). 76ers power forward Joel Embiid alone owed Philadelphia more in wage tax than all professional basketball spectators combined paid in amusement tax in 2020 (Sportrac).

Despite this trend to focus primarily on sales tax revenue in these scenarios, several arguments in recent public policy literature make the case for including wage tax.

Wage tax revenue may say more about a city's fiscal health than sales tax per dollar, though it generally represents smaller proportions of cities' overall revenue bases. Guzman and Ermasova weighed wage tax as a more significant indicator of municipal fiscal health than sales tax revenue (2022, p. 34). Wage tax tracks more closely to important metrics like per capita income and employment (Bruce, Fox, & Tuttle, 2006).

METHODOLOGY

In the exploratory phase of this study, we estimated the 76ers' total tax contributions to Philadelphia since 2001. We listed known taxes through which local government receives revenue from NBA operations: amusement, business, net profits, wage, and sales taxes. Spectrum makes a $2 million annual Payment in Lieu of Taxes in place of property tax to Philadelphia.

Annual Philadelphia tax rate data was used to estimate how much the 76ers owed in each of these tax categories between 2001 and 2022. Given Zimbalist's estimate that one-third of NBA players live in the cities that host their teams, we estimated that Philadelphia charged one-third of the 76ers player roster the resident wage tax rate and the non-resident wage rate to the rest.

Two coinciding events produced the 2016 NBA revenue influx. A collective bargaining contract between the NBA and team management ended that year, which raised the soft salary cap for NBA players by 35%—a historically significant amount. A large NBA media distribution deal

also took effect at that time, which inflated professional free agent basketball player salaries by 81% during 2016 (Keefer 2021, p. 3475).

Economist Quinn Keefer used these events to test whether better player compensation produced better on-court performance. From a public administration perspective, these events also created a natural experiment to test whether NBA teams' finances affect their home cities' tax revenue bases.

Preliminary analysis suggested these league-level gains produced a major, positive impact on the 76ers' finances, but no noticeable gains to Philadelphia's tax revenue base. We predicted a similar situation across other NBA teams and other NBA host cities: the NBA's 2016 revenue increases would benefit NBA teams but would not translate to local tax revenue gains for NBA-team host cities.

We tested this prediction more formally on 17 mid-sized US cities between 2001 and 2022. The study excluded major US population centers like New York and Chicago; the size difference between cities that large and their respective NBA teams would likely prove too large, making it unlikely that we would be able to isolate the effects we wanted to observe. We also eliminated Oklahoma City due to a team relocation during the observation period.

City wage and sales tax revenue data came from each respective city's consolidated annual financial reports, NBA financial data from Forbes and Statista, historical city population

estimates from the US Census Bureau's Population Estimates Program, and macroeconomic data from the Federal Reserve Bank of St. Louis.

Data pre-processing consisted of five steps. To create control and treatment groups, we flagged cities by the presence or absence of wage and sales tax systems and the presence or absence of NBA franchises. This enabled us to test for a difference in tax revenue increases in cities during 2016 that host NBA teams versus non-NBA team hosting cities.

To control for COVID-19's effects, we smoothed financial data from 2020 and 2021 by averaging those values with unaffected values from neighboring years. To control for inflation, we converted financial data from all years to 2020 values with adjustment factors based on the Consumer Price Index (CPI). To control for population differences by city and by year, we normalized financial data on an annual, per capita basis.

To justify the use of a difference-in-difference (DID) analysis, we needed to test for parallel trends between aggregated wage and sales tax revenue prior to 2016. We ran a preliminary Ordinary Least Squares (OLS) regression to find lines of best fit for those variables. We then calculated and compared the slopes of those lines.

Diagnostics on the preliminary regression also guided model selection. Heteroscedasticity and non-normality warnings, common in panel data analyses, informed our decision to use a Weighted Least Squares (WLS) regression with robust (HC3) standard errors.

We set up a multivariate regression that ran two models. The first assessed the 2016 media deal's impact on sales tax revenue. The second did the same for wage tax revenue. For each of these two models, cities were divided into groups based on the presence or absence of an NBA team and the presence or absence of wage and sales systems. The equations are represented here:

Wage Tax Model:

$$\text{WageTax}_{it} = \beta_{0,1} + \beta_{1,1}\text{NBA Team}_i + \beta_{2,1}\text{Post-2016}_t + \beta_{3,1}(\text{NBA Team}_i \times \text{Post-2016}_t) + \epsilon_{it,1}$$

Sales Tax Model:

$$\text{SalesTax}_{it} = \beta_{0,2} + \beta_{1,2}\text{NBA Team}_i + \beta_{2,2}\text{Post-2016}_t + \beta_{3,2}(\text{NBA Team}_i \times \text{Post-2016}_t) + \epsilon_{it,2}$$

Where:

WageTax_{it} represents the wage tax revenue in given city i at time t.

SalesTax_{it} represents the sales tax revenue in given city i at time t.

$\beta_{0,1}$ and $\beta_{0,2}$ are the intercepts for the wage tax and sales tax models.

$\beta_{1,1}$ and $\beta_{1,2}$ are the coefficients for the presence of an NBA team in the wage tax and sales tax models.

$\beta_{2,1}$ and $\beta_{2,2}$ are the coefficients for the post-2016 period in the wage tax and sales tax models.

$\beta_{3,1}$ and $\beta_{3,2}$ are the interaction terms capturing the effect of the 2016 media deal on cities with NBA teams for the wage tax and sales tax models.

$\epsilon_{it,1}$ and $\epsilon_{it,2}$ are the error terms for the wage tax and sales tax models.

The first model designated cities with an NBA team and a sales tax system as the treatment group. Cities with no NBA team and a sales tax were designated as the control group. The second model was similar, except treatment and control groups were defined based on the presence or absence of a wage tax system. This configuration enabled us to assess whether cities with NBA

teams saw sales tax revenue increases in tandem with the major revenue increases experienced by the NBA in 2016.

In both models, we represented the 2016 intervention with the variable ‘Post-2016,’ which divided observations by whether they were made before or after the 2016 intervention. This term captured differences in tax revenue impacts in cities with NBA teams before and after the 2016 media deal. The interaction term ‘NBA Team * Post-2016’ isolated the effect of the media deal on cities with and without NBA teams.

Given the early diagnostic warnings the preliminary data analysis produced, we performed several post-modeling tests to assess the severity of multicollinearity and heteroscedasticity in the WLS models. We ran diagnostic tests before and after stationary bootstrapping to see if this technique resolved potential problems.

Results

The exploratory phase of this study compared Philadelphia tax revenue collections to estimated 76ers tax obligations from 2001 to 2022.

Estimated tax contributions to Philadelphia by the 76ers remained static, at around an annual $2 million, between 2001 and 2015. 2016 marked an uptick, coincident with the Turner-ESPN media deal, and peaked in 2022 at around $7 million. In line with Keefer’s observation that the deal produced significant player salary increases, estimated 76ers wage tax contributions grew

from $1.5 million in 2016 to $4.6 million in 2022: the single largest observed increase among the included variables.

Both the 76ers' and Philadelphia's revenues noticeably dipped during the COVID-19 pandemic years. The 2016 media deal, however, corresponded only to a strong response from the 76ers' financials. The effect did not seem to translate to Philadelphia tax revenue collection trends.

This study's main section expanded the scope to 17 cities between 2001 and 2022, featured a host of control measures, and introduced treatment and control groups in a setup designed to isolate the effect of the NBA's 2016 financial performance on municipal tax revenues.

The preliminary OLS regressions showed that sales and wage tax revenues shared similar slopes ($p = .353$) consistent between cities with and without NBA teams. This provided proof of parallel trends in these variables prior to the intervention: a necessary pre-requisite for a multivariate DID analysis using a WLS model.

The sales tax model accounted for 47.8% of observed variance ($R^2 = 0.478$), and the wage tax model accounted for 42.3%. These are acceptable values for social science purposes, given the presence of statistically significant explanatory variables (Ozili, p.10).

The sales tax model associated the presence of an NBA team with a statistically, but not practically significant reduction in sales tax revenue (coefficient = -0.0007, $p < 0.001$). The wage tax model produced a similar figure (coefficient = -0.0008, $p < 0.001$).

Results further indicated no significant change in tax revenues before and after the 2016 media deal. The coefficients of the interaction terms in both models ranged from -0.0002 to 0.0002, with p-values over 0.667. Interaction terms in both sales tax and wage tax analyses did not show significant effects post-2016 media deal (coefficients: -6.874e-05 and -0.0002, p-values: 0.823 and 0.712).

Post-regression diagnostic tests suggested statistical issues with the models, which we could not resolve. P-values and other relevant statistics are available in the Appendix.

Using stationary bootstrapping, we generated 10,000 samples to re-test the wage and sales tax models' hypotheses at 95% confidence intervals. The sales tax model 95% confidence intervals ranged from -0.00036186 to 0.00083068. For wage tax residuals, they ranged from -0.00069225 to 0.00098265. These results further validated the models' fits, showing the probability of observing the residuals under the null hypothesis.

Diagnostics suggested non-normality of residual distribution in both models. Stationary bootstrapping allayed heteroscedasticity issues in the sales tax model, but not the wage tax

model. The wage tax model also continued to exhibit negative autocorrelation after stationary bootstrapping.

Limitations

Without access to primary source financial documents, we had to infer how much the 76ers and their home stadium pay Philadelphia annually in taxes based on a collage of court filings and a real estate document the City Solicitor's Office claimed did not exist.

The NBA's strong financial performance in 2016 may have exerted a localized economic effect in Philadelphia to which our back-of-napkin test was insensitive. This study would benefit from improved access to direct documentation of the financial transactions between NBA teams and their host cities.

Further research would benefit from better access to primary source financial documents and more granular monthly data. It would also benefit from data on all types of taxes cities exact from the NBA in addition to wage tax, such as net profits and sales tax.

Though municipal consolidated financial statements reviewed for this study adhered closely to US Generally Accepted Accounting Principles (GAAP), accounting conventions varied between cities. Fiscal years began and ended in different months in different cities. Different tax regimes defined tax categories differently. While most data was published on an annual basis, monthly

data would further articulate the nuances of the 2016 intervention and enable improved control of actuarial variances.

Conclusion

The 2016 NBA-Turner-ESPN media deal produced league-level revenue gains and increased NBA players' payrolls by a substantial margin. These payroll increases did not translate to substantial local tax revenue through the conduit of wage tax in any city observed in this study. These results should be interpreted with the knowledge that we could not adequately resolve all statistical problems with the assumptions that underlie our statistical model.

References

Acolin, A. (2024, January 15). 76 Place could cost Philadelphia $908 million in lost tax revenue, destabilizing existing jobs, businesses, and tax base. WHYY. https://drive.google.com/file/d/1OKVyk57PrsjrcdV9eMYXCSOCBzSKTkQj/view?pli=1.

Althouse, M. (2023, April 22). City denies Right-to-Know requests for 76ers arena proposal, activists demand more information. Philly Voice. https://www.phillyvoice.com/76ers-arena-chinatown-right-to-know-requests-denied/.

Anonymous. (1994, June 12). An arena for the future: A pricier Spectrum II is still a splendid way to bring jobs and growth to the city. *The Philadelphia Inquirer*, p. C.6.

Baade, R. A. (2000). The Impact of Sports Teams and Facilities on Neighborhood Economies: What is the Score? In *The Economics of Sports* (pp. 21–50). https://doi.org/10.17848/9780880993968.ch2.

Baade, R. A., Baumann, R., & Matheson, V. A. (2008). Selling the game: Estimating the economic impact of professional sports through taxable sales. *Southern Economic Journal*, 74(3), 794–810. http://www.jstor.org/stable/20111996.

Beck, H. (2011, November 26). NBA reaches a tentative deal to save the season. *The New York Times*. https://www.nytimes.com/2011/11/27/sports/basketball/nba-and-basketball-players-reach-deal-to-end-lockout.html.

Belleville, D., Cebula, R. J., Jolley, G. J., & Bone, C. (2020). COVID-19-related jock tax revenue losses in US states. *Regional Studies, Regional Science*, 7(1), 428–430. https://doi.org/10.1080/21681376.2020.1820901.

Bradbury, J. C. (2024). Sports stadiums and local economic activity: Evidence from sales tax collections. *Journal of Urban Affair*s, 46(1), 139–159. https://doi.org/10.1080/07352166.2022.2044837.

Bradbury, J. C., Coates, D., & Humphreys, B. R. (2023). Public policy toward professional sports stadiums: A review. *Journal of Policy Analysis and Management*. https://doi.org/10.1002/pam.22534.

Bureau of Labor Statistics. Consumer Price Index (CPI) Data. https://www.bls.gov/cpi/.

City of Philadelphia. (2023). The Mayor's Operating Budget in Brief for FY2024 as Approved by Council June 2023. https://www.phila.gov/media/20230720135438/Mayors-Operating-Budget-in-Brief-for-FY2024-as-Approved-by-Council-June-2023.pdf.

Coates, D., & Depken, Craig A. (2011). Mega-events: is Baylor football to Waco what the Super Bowl is to Houston? *Journal of Sports Economics*, 599–620. https://doi.org/10.1177/1527002510391368.

Coates, D., & Humphreys, B. R. (2001). The Economic Consequences of Professional Sports Strikes and Lockouts. *Southern Economic Journal*, 67(3), 737–747. https://doi.org/10.2307/1061462.

Coen, A. (2020, December 5). Philadelphia 76ers chasing arena after bond-supported bid falters. *The Bond Buyer*. https://www.bondbuyer.com/news/philadelphia-76ers-chasing-arena-after-bond-supported-bid-falters.

Daughen, J. R. (1991, June 8). New arena a done deal. *The Philadelphia Daily News*, p. 3.

Dean, K., Evans, R., & Willner, J. (2017). Thunder up the taxes: The economics of the Oklahoma City Thunder's impact on local tax revenues. *Journal of Economics and Finance*, 41(4), 559–577. https://doi.org/10.1007/s12197-016-9366-7.

Draper, K., & Mullin, B. (2023, October 29). Tug-of-War over N.B.A. rights provides a glimpse of media's future. *The New York Times*. https://www.nytimes.com/2023/10/29/business/nba-media-rights.html.

ESPN. NBA Attendance Report - 2023. https://www.espn.com/nba/attendance/_/year/2023.

Federal Reserve Bank of St. Louis. Personal Consumption Expenditures (PCE) Price Index. https://fred.stlouisfed.org/series/PCE.

Forbes. The Business of Basketball. https://www.forbes.com/nba-valuations/list/.

Forbes. (2023). NBA Valuations. https://www.forbes.com/lists/nba-valuations/?sh=38653ff86982.

Bruce, D., Fox, W. F., & Tuttle, M. H. (2006). Tax Base Elasticities: A Multi-State Analysis of Long-Run and Short-Run Dynamics. *Southern Economic Journal*, 73(2), 315–341. https://doi.org/10.2307/20111894.

Cozen O'Connor. (2011). Defendant Spectrum Arena, L.P.'s proposed findings of fact and conclusions of law. United States District Court for the Eastern District of Pennsylvania. https://s3.documentcloud.org/documents/24253233/defendant-spectrum-arena-lps-proposed-bessey-findings-of-fact-and-conclusions-of-law.pdf.

Frank, H., Lopez, S., & Santana, S. (1998). Old Before Their Time: The Shortened Lifespan of Professional Athletic Venues and Its Implication for Public Subsidy. *Public Administration Quarterly*, 22(3), 384–401. https://www.jstor.org/stable/40862327.

FRED. Philadelphia GDP. https://fred.stlouisfed.org/series/NGMP37980.

Gambacorta, D. (2011, December 15). $1 million deep-sixed thanks to lack of Sixers games. *The Philadelphia Inquirer*. https://www.inquirer.com/philly/news/20111215__1_million_deep-sixed_thanks_to_lack_of_Sixers_games.html.

Gilchrist, G. (2018). Analysis of the economic impact of constructing an NBA arena on the host city. https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=2938&context=cmc_theses.

Guzman, T., & Ermasova, N. (2022). Municipal Fiscal Stress, Bankruptcies, and Other Financial Emergencies (1st ed.). Routledge. https://doi.org/10.4324/b23117.

Harald, J., & Reinhard, K. (2023). The National Basketball Association's (NBA's) digital transformation: An explanatory case study. Quality in Sport. https://doi.org/10.12775/QS.2023.11.01.005.

Heberling, E., & Swindell, D. (2024). Congress and the Politics of Sports. In Congress, Teams and Power Dynamics in Siting Sports Facilities. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003376897-8/congress-teams-power-dynamics-siting-sports-facilities-eric-heberlig-david-swindell.

Humphreys, B. R. (2023). Professional Sports Subsidies and Urban Congestion Externalities: Assessing 50 Years of Failed Urban Economic Development Policies. *Eastern Economic Journal: The Journal of the Eastern Economic Association*, 49(4), 457–474. https://doi.org/10.1057/s41302-023-00245-2.

Hunt, K. (2024, March 15). Residents raise concerns that traffic from proposed 76ers arena could impact emergency care at Jefferson Hospital. PhillyVoice. https://www.phillyvoice.com/sixers-arena-jefferson-hospital-traffic-emergency-trauma-health-care/.

Keefer, Q. (2021). Sunk costs in the NBA: The salary cap and free agents. *Empirical Economic*s, 61(5), 3445–3478. https://doi.org/10.1007/s00181-020-01996-z

Lee, M. (2014, October 6). NBA's new $24 billion media deal with Turner, ESPN will greatly impact upcoming free agents like Kevin Durant, LeBron James. *The Washington Post*. https://www.washingtonpost.com/news/sports/wp/2014/10/06/nbas-new-24-billion-media-partnership-with-turner-espn-will-greatly-impact-upcoming-free-agents-like-kevin-durant-lebron-james/.

McCrystal, L. (2019). Philly's Wage Tax is the Highest in the Country. Here is Everything You Need to Know About it. Philly.com. https://www.inquirer.com/news/wage-tax-rate-philadelphia-business-jobs-reduction-reform-20190515.html.

Macnow, G. (1991, July 4). Arena Legislation sails through City Council. *Philadelphia Inquirer*, p. B.1.

Ozili, P. K. (2022). The Acceptable R-Square in Empirical Modeling for Social Science Research. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4128165.

Philadelphia Department of Revenue. (2023). Historic Tax Rates. https://www.phila.gov/media/20231116085343/Historic-Tax-Rates-Updated-Dec-2023.pdf

Philadelphia Authority for Industrial Development and Spectrum Arena Limited Partnership. (1994). Lease and Development Agreement. On file at the Philadelphia Department of Records. Retrieved 2023. https://www.documentcloud.org/documents/24251456-spectrum-lease-and-development-agreement.

Propheter, G., & Dai, S. (2023). The economic impact of sports facilities, franchises, and events. In *The Dallas Cowboys' relocation and intra-metropolitan sales tax revenue impacts across cities and industries*. Springer International Publishing. https://link.springer.com/book/10.1007/978-3-031-39248-1.

Propheter, G. (2012). Are basketball arenas catalysts of economic development? *Journal of Urban Affairs*, 34(3), 441–459. https://doi.org/10.1111/j.1467-9906.2011.00597.x.

Sadler, R., & Sanders, S. (2016). The 2011-2021 NBA collective bargaining agreement: Asymmetric information, bargaining power, and the principal agency problem. *Managerial Finance*, 42(9), 891-901. https://doi.org/10.1108/MF-02-2016-0048.

Shropshire, K. L., & Kelly, M. S. P. (1995). The Philadelphia v. Camden Story. In *The Sports Franchise Game: Cities in Pursuit of Sports Franchises, Events, Stadiums, and Arenas* (pp. 20–26). University of Pennsylvania Press. http://www.jstor.org/stable/j.ctt3fhxb1.9.

Rosentraub, M., & Swindell, D. (2009). Of Devils and Details: Bargaining for Successful Public/Private Partnerships Between Cities and Sports Teams. *Public Administration Quarterly*, 33(1), 118-148. https://www.jstor.org/stable/41219973.

Siegfried, J., & Zimbalist, A. (2002). A note on the local economic impact of sports expenditures. *Journal of Sports Economics*, 3(4), 361–366. https://doi.org/10.1177/152700202237501.

Sportrac. Joel Embiid. https://www.spotrac.com/nba/philadelphia-76ers/joel-embiid-15355/cash-earnings/.

Statista. Gate Receipts of the Philadelphia 76ers. https://www.statista.com/statistics/383028/gate-receipts-of-the-philadelphia-76ers-national-basketball-association/.

Stitzel, B., & Rogers, C. L. (2019). NBA sweet spots: distance-based impacts on establishment-level sales. Growth and Change, 50(2), 335–351. https://doi.org/10.1111/grow.12262.

Thompson, A. (2023). Here's How Much It Costs to Attend an NBA Game In 2023. Bookies.com. https://bookies.com/nba/picks/here-s-how-much-it-costs-to-attend-an-nba-game-in-2023.

United States Census Bureau. American Community Survey (ACS). https://www.census.gov/programs-surveys/acs.

Vitez, M. (2011, October 12). Economic fallout in Philly from NBA lockout. *The Philadelphia Inquirer.* https://www.inquirer.com/philly/sports/sixers/20111012_Economic_fallout_in_Philly_from_NBA_lockout.html.

Whaples, R. (2006). Do Economists Agree on Anything? Yes! *The Economists' Voice*, 3(9). https://doi.org/10.2202/1553-3832.1156.

76Devco. (2023, June 15). New analysis Projects 76 Place will generate more than $450 million in new net tax benefits to state taxpayers. https://76place.com/new-analysis-projects-76-place-will-generate-more-than-450m-in-new-net-benefits-to-state-taxpayers/.

76Devco. (2023). FAQ. https://docs.google.com/spreadsheets/d/19j8VGrc6faFTfIWjIvhisnEsHBa0WNzZtqLOgCp14Yo/edit#gid=1815679198.