

STADIUM ECONOMIC IMPACT REPORT: PITTSBURGH PIRATES

I^{FO} Independent Fiscal Office | July 2024



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INTRODUCTION

This report responds to a request made in November 2022 by Pennsylvania State Representatives Timothy Bonner (Mercer and Butler Counties) and Jim Gregory (Blair and Huntingdon Counties). The representatives requested that the Independent Fiscal Office (IFO) examine the economic impact from Major League Baseball (MLB) operations at PNC Park in Pittsburgh and Citizens Bank Park in Philadelphia. The Commonwealth provided partial funding to construct both stadiums. The request specified that the studies should include the direct and indirect economic impacts, downstream effects on local businesses and, if available, the impact that attendance fluctuations have on economic activity within the Commonwealth. The original request letter and the IFO's response can be found in the Appendix to this report. The teams had the opportunity to submit a response letter, which can also be found in the Appendix.

This report examines the economic footprint of the Pittsburgh Pirates and PNC Park. The franchise has been known as the Pirates since 1891, and was originally established as the Alleghenys in 1882. The franchise has won five World Series Championships, nine National League titles, nine division titles and three wild card berths. Previously, the team played games in Exposition Parks 1 & 2 (1882–1883), Recreation Park (1884–1890), Exposition Park 3 (1891–1909), Forbes Field (1909–1970) and Three Rivers Stadium (1970–2000). In 2001, PNC Park, located on the North Shore in downtown Pittsburgh, opened to the public. The stadium cost \$273.5 million to construct, and \$75 million (27%) was funded by the Commonwealth through a Redevelopment Assistance Capital Program (RACP) grant.¹

The scope of this report is limited to the following topics:

- The general relationship between team spending, wins, fan attendance and the economic footprint
- The economic footprint of the Pittsburgh Pirates' Major League Baseball operations
- State tax revenues generated from those operations

The analysis is a contribution or footprint study that quantifies the economic activity related to the Pirates' MLB operations using data from the 2022 and 2023 seasons. An economic footprint study is the broadest type of economic study, and includes all economic activity connected to a particular industry or firm. Final estimates will reflect three types of economic impacts: direct (spending by the team and fans), indirect (firms in the supply chain) and induced (spending of income by those employed by directly-affected firms).² Although the study considers operations in a specific geographic region, it does not attempt to quantify the impact on local government revenues. It also does not attempt to measure various positive externalities or spillovers attributable to the presence of a major league team, such as civic pride and localized neighborhood development effects (e.g., more walkable space, improved pedestrian safety). Additional detail regarding the economic modeling used for this report can be found in the Appendix. The IFO would like to thank the Pittsburgh Pirates and Visit Pittsburgh for their assistance in the production of this report. Data from those organizations and other sources are cited in the footnotes and endnotes.

PAYROLL, PERFORMANCE AND ATTENDANCE

Per the official request that motivates this report, the analysis considers the potential relationship between team payroll, win percentage, fan attendance and the team’s economic footprint. For this purpose, the report uses the 2012 to 2023 seasons.³ This time frame ensures sufficient data points to reflect the competitiveness cycles that often occur in Major League Baseball. Professional sports teams may achieve peak performance for a span of several years due to factors such as team cohesion and synergy, timing of draft choices, salary management, free agent signings and favorable scheduling. Many of these factors could overlap and reinforce others during a particular season or over several seasons.

The table below displays nominal or current and real team payroll (2023 dollars), number of wins and win percentage, and two summary statistics. Note that there are significant impacts in 2020 and 2021 due to the Covid pandemic (red shade). Rows shaded in gold represent seasons in which the team qualified for the postseason.

PITTSBURGH PIRATES SUMMARY METRICS						
	Payroll		Wins		Payroll Per Win	Avg. Game Attendance
	Current	Real	Number	Percent		
2012	\$61	\$78	79	49%	\$0.99	25.8
2013	\$71	\$90	94	58%	\$0.96	27.9
2014	\$77	\$96	88	54%	\$1.09	30.2
2015	\$99	\$124	98	60%	\$1.26	30.8
2016	\$100	\$123	78	48%	\$1.58	27.8
2017	\$101	\$123	75	46%	\$1.64	23.7
2018	\$91	\$110	82	51%	\$1.34	18.1
2019	\$72	\$85	69	43%	\$1.24	18.4
2020	\$25	\$30	19	32%	\$1.56	--
2021	\$54	\$61	61	38%	\$1.00	10.6
2022	\$56	\$59	62	38%	\$0.95	15.5
2023	\$76	\$76	76	47%	\$1.00	20.1

Notes: Real payroll in 2023 dollars indexed to Philadelphia CPI-U. Average game attendance in thousands. Payroll in millions of dollars. The 2020 season had reduced games and payroll due to pandemic restrictions; 2020 and 2021 seasons had attendance restrictions. Payroll per win uses real payroll data.

Source: Attendance from BaseballReference.com. Payroll from Spotrac.com. Calculations by the IFO.

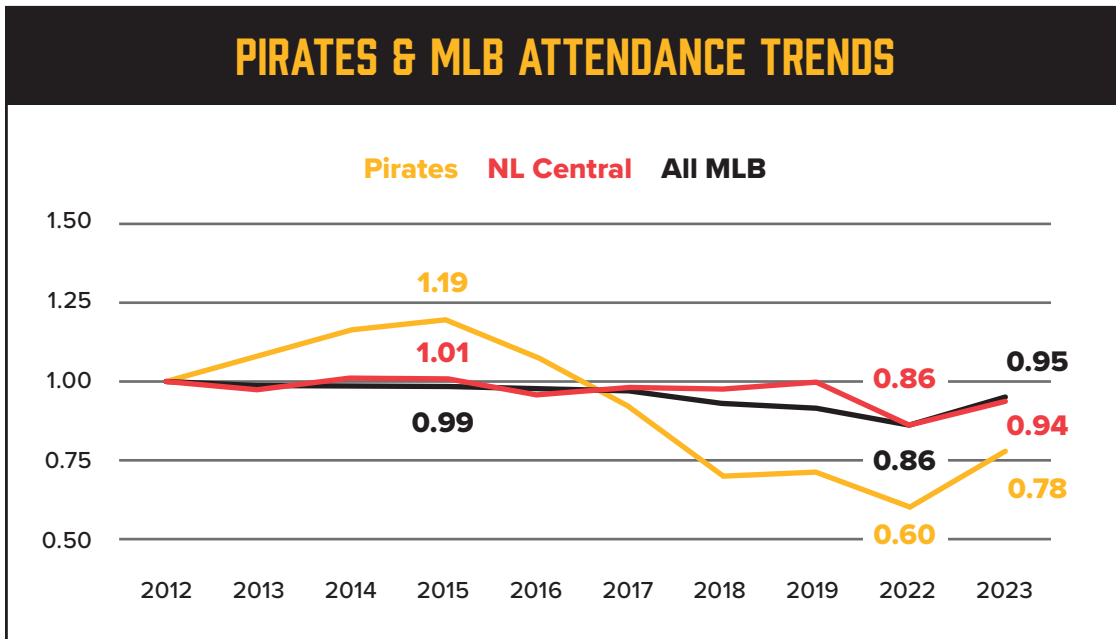
This report does not utilize statistical methods to analyze relationships between the metrics in the table due to the limited number of annual data points, circumstances beyond the team's control (i.e., scheduling and player health) and the inherent difficulty in controlling for the myriad factors that could drive the number of wins in a particular season. The data in the table are best used to examine broad, long-term trends over the prior decade. The data suggest that fan attendance is positively related to team success (i.e., win percentage), usually with a lag effect as a winning team builds excitement and drives attendance the next season. There is also a general positive relation between payroll and wins, but with diminishing returns. Using real payroll (in 2023 dollars), general data trends include:

- For the 2013 and 2014 seasons, average real payroll was \$93 million, with an average win percentage of 56% and average game attendance of 29,000.
- For 2015, real payroll peaked (\$124 million), as did win percentage (60%) and average attendance (30,800).
- For 2016 to 2018, average real payroll fell to \$119 million, win percentage declined to 48% and average attendance to 23,200.
- Excluding the Covid-impacted seasons of 2020 and 2021, real payroll, win percentage and average attendance reached their nadir in the 2022 season.
- All three metrics recovered in the 2023 season, as the \$17 million increase in real payroll was associated with a 9 percentage point increase in win percentage and a 1,700 per game increase in average attendance compared to the most recent pre-Covid season (2019).

The final columns display two summary statistics: (1) real payroll cost per win and (2) average game attendance. The data suggest higher real payroll generally correlates to more wins, but the marginal value of each incremental million in real payroll appears to diminish as the team compiles more wins. However, this general relationship does not always hold. For example, in 2023, real payroll was lower than 2019, but the team had 7 more wins and average game attendance increased by 10%. This may suggest that attendance is also influenced by fan perception of the team's competitiveness, potential for post-season play, and whether fans view the team as under- or over-performing.⁴

It should be noted that these general observations do not take into account (and the IFO did not examine) two relevant factors: (1) player injuries (injured players continue to receive guaranteed salaries), and (2) the development schedule of players, as players starting their MLB careers typically have lower salaries prior to arbitration and free agency opportunities due to the MLB's collective bargaining agreement with the players' union. These factors impact team performance and payroll as injuries occur and players' contracts are renewed, extended or expire. For example, attendance for the 2018 season declined notably (-24%), despite the fact that the team won 7 more games than the prior season. During the offseason, long-time Pirate Andrew McCutchen was traded, which may have impacted fan attitudes and expectations for the upcoming season. McCutchen's return in 2023, combined with All-Star Bryan Reynolds (who was acquired in the 2018 trade) may have contributed to the increase in attendance for a 76-win season, which exceeded average attendance for Pittsburgh's last winning season (2018).

PIRATES & MLB ATTENDANCE TRENDS



To examine broader attendance trends (regular season only), the adjacent figure tracks Pirates' paid attendance from 2012 to 2023, compared to MLB (black line) and total attendance for the other four teams in the National League (NL) Central Division (red line).⁵ The figure indexes the change in paid attendance against a 2012 base year (index factor of 1.00). Relative to the base year:

- Pirates' attendance peaked in 2015 (19% growth) with 98 wins. By comparison, MLB and NL Central attendance trends were relatively flat.
- Overall, MLB attendance has contracted since 2012. The 2022 season was the lowest attendance year for MLB and the other NL Central teams as attendance declined by 14% compared to the 2012 base year. The Pirates' above-average contraction (-40%) was likely attributable to the low win percentage over multiple years (2019 to 2022).
- For 2023, the Pirates increased their attendance index by 0.18 to 0.78, or 22% below their 2012 level as the team won 76 games (most since 2018) and drew 20,100 in attendance per game (most since 2017). This gain exceeded positive trends for the MLB (+0.09 index factor) and the NL Central (+0.08 index factor).

Attendance levels have a direct impact on the size of the team's economic footprint, and the data reveal a positive relation between win percentage and attendance. The section that follows estimates the 2023 economic footprint and how it could fluctuate with attendance.



2023 ECONOMIC FOOTPRINT

To quantify the economic footprint and the corresponding state taxes generated by the Pirates' MLB operations, the IFO requested data from the team and stakeholders to estimate spending related to Pirates' games at PNC Park. The analysis separates final spending into two major categories: (1) Team Operations and (2) Fan Spending. This section describes and estimates the types of spending included in those categories and then assesses how team operations and fan spending reverberated through the local and state economies to generate the overall economic footprint for the Pirates' 2023 season.

Team Operations

At the request of the IFO, the Pirates provided data for staff payroll and operations expenditures for the 2022 season. The IFO adjusted those data to the 2023 season based on relevant inflation factors provided by the team.⁶ Team operations expenditures only include in-state activity and do not include international operations or the spring training site in Bradenton, Florida.

The Pirates employ nearly 1,000 full- and part-time staff in the Commonwealth. Full-time employees include coaches, trainers, front office and other administrative staff. Part-time staff include seasonal workers. Other team operations expenditures include contractors procured for security, maintenance and other day-to-day operations, marketing and advertising, supplies, utilities and travel costs. Team operations expenditures also include capital expenditures made for permanent improvements to the facility.

Miscellaneous notes for team operations spending are as follows:

- The analysis assumes that 15% of the \$76 million (\$11.4 million) in 2023 team player payroll remains and is spent in state, while the residual is saved or flows to players who reside out-of-state most of the year. For state personal income tax (PIT) purposes, 52% of total player payroll is taxed, which represents games played in the Commonwealth. The Pirates played 84 games in-state in 2023 (81 in Pittsburgh and three in Philadelphia).
- The analysis includes projected state PIT collected on visiting player payroll based on the number of games played in Pittsburgh. This amount is included in the team's economic footprint (PIT impact only).
- Because some coaches and certain staff reside out-of-state, the analysis applies a 10% cutback to total non-player staff salaries.

Fan Spending

Baseball fans make various purchases inside and outside the stadium for tickets, food, parking, hotels, apparel and other entertainment. To construct visitor spending profiles, the IFO used data supplied by the Pirates and Visit Pittsburgh, the city's official tourism office.^{7, 8} Visit Pittsburgh provided detail on average spending for day trips and overnight trips and spending by type of purchase (e.g., hotel, restaurant) for all sports fans who visit Allegheny County. Visit Pittsburgh and the Pirates also provided point-of-origin data for attendees who purchase tickets. Those data allowed the analysis to quantify the number and share of visitors from out-of-state and those from in-state, both inside and outside the Pittsburgh metro region.

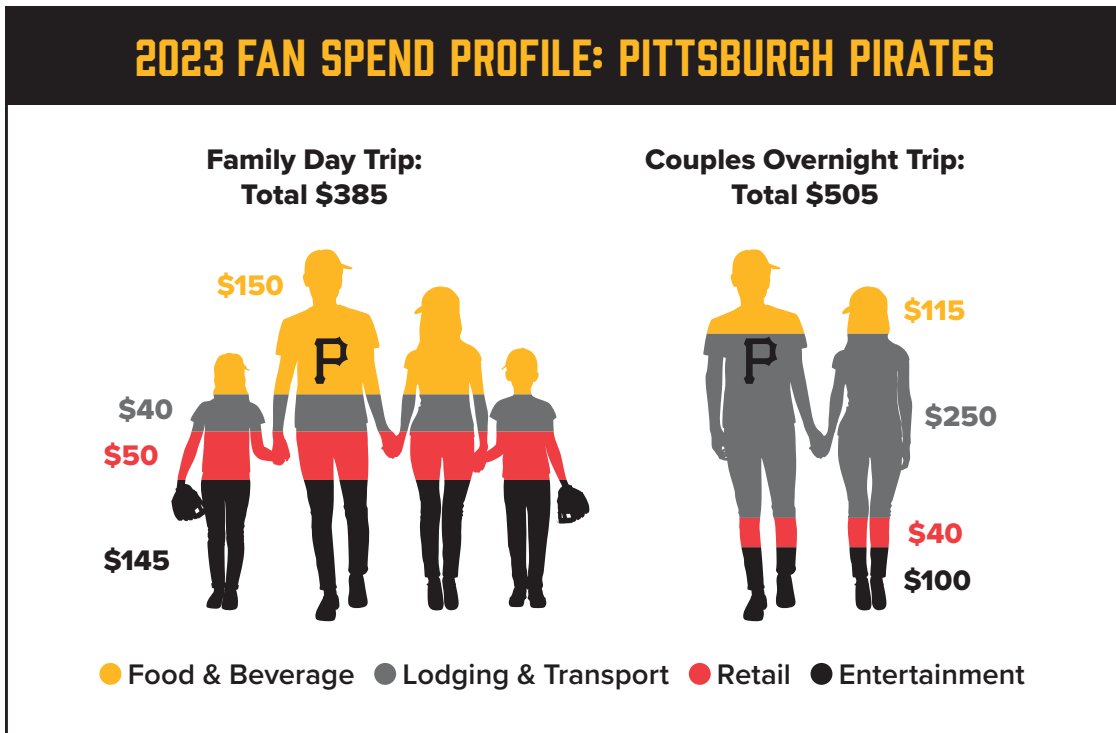
The point-of-origin data are a key factor used to estimate total visitor expenditures. For the 2022 season, the data show the following point-of-origin shares for fans who attended a Pirates home game:

- 44% Local (City of Pittsburgh and Allegheny County)
- 26% Non-Allegheny, In-State Visitors
- 30% Out-of-State Visitors (most from Ohio, New York and West Virginia)

The data show that over half of fans at games were not from the Pittsburgh metro region, and nearly one-third resided outside the Commonwealth. Based on data from Visit Pittsburgh that include average nights stayed by non-local visitors, the IFO estimates that the average overnight visitor from outside Allegheny County who attends a Pirates game stays approximately two nights per trip. This average includes fans whose main reason for travel is a Pirates game, and casual fans who attend games because they happen to be visiting the region (e.g., family or college visit, conferences).

The team contracts with vendors for the sale of food, beverages and merchandise inside the stadium. The analysis assumes that most of this spending is retained by vendors (60%) and the residual (40%) flows to the team.⁹ The analysis deducts the team share from gross fan spending to avoid double counting (i.e., spent once by fans, then again by the team). Based on data for in- and out-of-stadium spending, the average fan spent approximately \$96 (day trip) and \$253 (overnight stay) per trip.¹⁰ These data imply that for a typical family of four on a day trip, average total spending was approximately \$385, while a typical couple that stays overnight spent \$505. (See figure.)

2023 FAN SPEND PROFILE: PITTSBURGH PIRATES



Source: Visit Pittsburgh with adjustments by the IFO.

Per the request that motivates this report, the analysis examines the gross or overall economic contribution of the Pirates' MLB operations to the local and state economies. Given that objective, it does not attempt to quantify any reduction due to spending that is shifted from purchases of other goods and services, or the impact attributable to "casual" fans. Economic impact studies (as opposed to contribution or footprint studies) will typically assume that a share of local spending was shifted from other goods and services and estimate the economic impact net of those amounts. Some studies might also reduce spending for those who happen to be in the city and attend games due to circumstances (e.g., attending a conference), but would not have attended otherwise. To remove those impacts, an analysis might only include spending pulled into the state due to out-of-state visitors. For the Pirates, the data show that those visitors comprised 30% of total attendance, and they generally spend more at each game, not only on lodging, but also food and merchandise.

Economic Footprint Estimate

Based on the data and assumptions noted above, team operations and fan spending were modeled and input separately into the IMPLAN input-output model to derive the economic contribution or footprint for the Pirates 2023 season. (See Appendix for further technical detail.) The results were as follows:

- **Net Direct Spending** is \$254 million. This includes (1) net fan spending inside and outside the stadium (reduced for the portion of spending at vendors that flows to the team or league) and (2) team operations spending. As noted, most player payroll (85%) is excluded, and a 10% cutback is applied to staff payroll for managers and other staff who likely do not reside in the state full-time.

- **Total Spending** is \$546 million. This figure includes net direct spending, plus the indirect and induced effects that result from the direct spending. Indirect effects are in-state firms that are in the supply chain for goods and services purchased by fans or the team. Induced effects represent the impact as employees spend their earnings. The IMPLAN model reduces both effects for leakage due to spending that flows out of the state economy, is remitted as taxes or is saved.¹¹ The spending multiplier of 2.15 implies that a \$1 change in demand due to net fan or (certain) team spending produces a final \$2.15 spending impact once indirect and induced effects are included.
- **Labor Income** is \$219 million and includes all wages and salaries, self-employment income, health and pension benefits and payroll taxes. (To remove health and pension benefits and employer-paid payroll taxes, the figure could be reduced by 14%.) Similar to spending, this figure includes compensation for staff directly employed by the Pirates, and employees supported by the indirect and induced impacts.
- The number of **Full-Time Equivalent (FTE) Jobs** supported is 2,950. Most jobs supported were in the food service (560 jobs) and accommodations/hospitality (370 jobs) industries. Other industries with significant impacts include commercial sports events (i.e., operations staff) and construction.
- Total **State Taxes** are \$22 million. The largest impact is for sales and use tax (\$10 million), which includes all food and beverage spending at in- or out-of-stadium locations, and all lodging. Personal income tax generates \$9 million as roughly one-half (52%) of player salaries are subject to tax, in addition to an estimated \$1.7 million in tax from visiting teams. The figure does not include local Allegheny County taxes such as sales (1%) or hotel tax (7%). Other taxes include gasoline, tobacco, liquor and corporate net income.

2023 PIRATES ECONOMIC FOOTPRINT			
Net Direct Spending¹	\$254	State Taxes Generated	\$22
Total Spending²	\$546	Personal Income	\$9
Spending Multiplier	2.15	Sales & Use	\$10
		Other Taxes	\$4
Labor Income	\$219		
FTE Jobs Supported	2,950		

Note: Dollars in millions.

1 Net Direct Spending includes (1) team operations and (2) fan spending. Team operations include MLB and staff payroll, operations, capital projects and other spending previously described in the report. Fan spending is for both inside and outside the stadium.

2 This figure double counts sales as they move through the supply chain (i.e., business-to-business transactions). If the double counting is removed, the amount is referred to as value added (or gross state product) and is \$307 million.

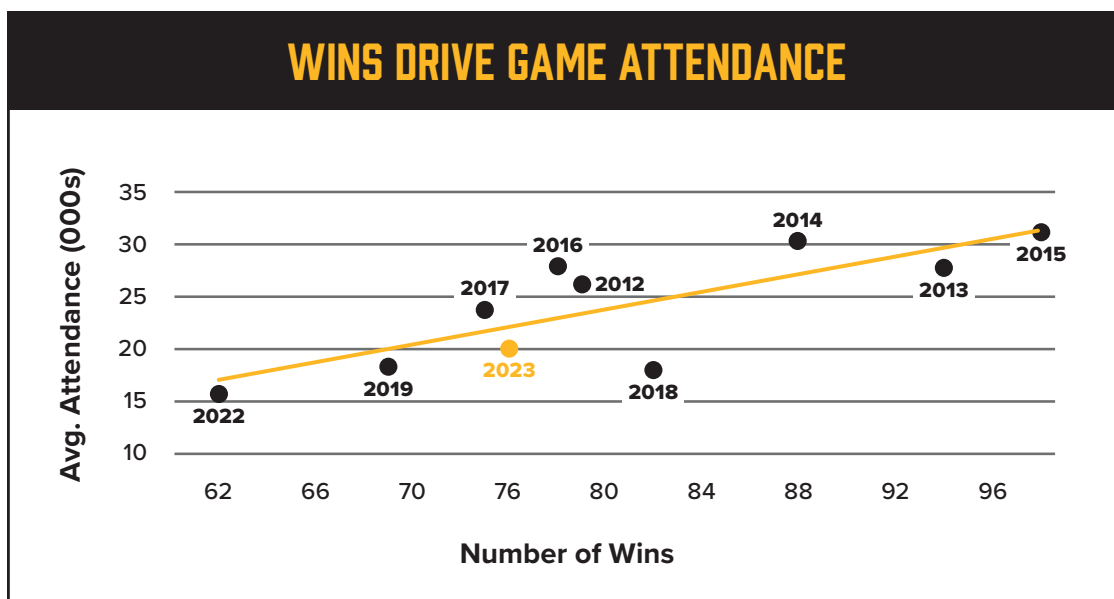


GAME ATTENDANCE AND THE ECONOMIC FOOTPRINT

In response to the legislative request that motivates this report, the IFO noted that the report would “attempt to analyze the relationship between historical game attendance and the economic impacts.” To fulfill that obligation, this sub-section performs a simulation to estimate how higher game attendance could impact certain parameters to expand the economic footprint. The simulation is for illustrative purposes only and focuses on the potential spending impact due to higher fan attendance.

The figure plots the Pirates’ wins and fan attendance (as measured by tickets purchased) for the 2012 to 2023 seasons. The 2020 and 2021 seasons are excluded due to the impact from the Covid pandemic. The trendline shows a positive relationship between the number of wins (horizontal axis) and average game attendance for the season (vertical axis). For 2022, total wins (62) and average game attendance (15,500) reached their lowest points of the prior decade. The Pirates’ 2023 season recorded significant gains in wins (76) and average fan attendance (20,100). For the simulation, the analysis assumes that the team makes further progress and the simulated season

is similar to 2012 in terms of total wins and average game attendance.¹² The simulation is illustrative only and is not a projection of near-term outcomes for a particular year if the team achieves a certain number of wins. In 2012, the Pirates won 79 games and attracted 25,800 fans per game. The 2012 data point is a natural choice for the simulation because (1) it is close to the trendline that illustrates the historical relation between wins and fan attendance and (2) it was not preceded by a playoff year. The 2016 season was also considered, but the Pirates had just completed three consecutive seasons with a playoff appearance and attendance remained elevated as a residual effect. Using the 2012 wins and attendance assumptions increases total wins by 3 and average paid attendance by 28% (+5,700 per game) from the 2023 season. Although attendance increases materially with only 3 more wins, this data point might also be viewed as a potential long-term or steady-state outcome that could be achieved if a predictable and consistent fan base develops.



Source: BaseballReference.com.

The following assumptions were also made for the purpose of the simulation:

- The share of paid attendance that attends games (turnstile attendance) increases by 2 percentage points.
- Across all types of purchases, average fan spending increases by 5% to reflect higher fan engagement and price increases that may result from higher demand (e.g., accommodations). The team might also develop a more consistent fanbase (as opposed to casual fans) who attend games as a destination event and are therefore likely to spend more once they arrive at the destination. The 5% average increase is an illustrative assumption. If fan spending grew by 10%, then the impact estimate for this sub-section would double.
- The mix of fans does not change. The same shares reside locally and non-locally, both within state and out-of-state.¹³

Based on these assumptions, gross fan spending would increase by \$76 million. That amount includes all monies that would flow to the team for ticket sales and the team’s share of in-stadium vendor sales. It represents the maximum possible increase in new direct spending that could impact the state and local economies if (1) the team spent all new revenues received and (2) spent all of those revenues in state, and not on player payroll, which would most likely flow out-of-state or be saved. Because it is not clear how the team would spend additional revenues, the analysis did not attempt to estimate the overall economic impact (i.e., the multiplier impact) from the higher spending or the state tax revenues it might generate. If the same spending patterns and assumptions held from the prior subsection, then a spending multiplier of roughly 2.0 would apply to the increase in direct spending.

The table shows that \$45 million of the higher gross fan spending occurs outside the stadium (largely on food and lodging) and \$31 million occurs inside the stadium from ticket sales and food/beverage/merchandise vendors (includes team share). Therefore, most of the incremental benefit from the higher fan attendance does not flow to the team, but rather to local businesses or vendors doing business in the stadium. As noted, this assumes that the incremental fan spending profile is the same as fans who attend games in the 2023 footprint.

PIRATES HIGHER ATTENDANCE SIMULATION	
Increase in Fan Spending¹	\$76
Outside the Stadium	\$45
Inside the Stadium	\$31

Note: Dollars in millions.

1 Spending inside the stadium includes ticket purchases, concessions and merchandise. Outside the stadium spending includes food & beverage, lodging, retail, transportation and other entertainment. Figures are not adjusted for vendor share agreements.

NON-MLB IMPACTS AND EVENTS

In addition to MLB games, PNC Park hosts other events and the Pirates engage in various non-MLB activities. These events and activities were not included in the economic footprint analysis and would expand the economic impact related to the park or team.

Concerts at PNC Park

In 2023, PNC Park hosted four concerts that each sold between 25,000 and 41,000 tickets while the Pirates played away games. Visit Pittsburgh estimates that 30% of attendees traveled from out of state.

- August 5, 2023: Pink (est. 41,000 attendance)
- August 18, 2023: Guns ‘N Roses (est. 25,000 attendance)
- August 30 and August 31, 2023: Morgan Wallen (combined est. 80,000 attendance)

The park will host two concerts in 2024 on July 27 (Def Leppard and Journey) and September 1 (Green Day).



Minor League Baseball

The Pirates also have a minor league team that resides in the Commonwealth. The Curve, the Pirates' Class AA affiliate, is located in Altoona, Pennsylvania (Blair County). In 2023, the team drew 308,000 fans (4,600 per game), 22,000 more than the 2022 season. The team supports a roster of 28 active players (as well as any players from the major league roster on rehabilitation assignments), a coaching staff, full front office, business staff and support staff for game day operations. The economic impact from this affiliate was not included in the analysis.

Externalities and Spillovers

Research generally finds positive externalities or spillover effects for cities that host professional sports teams. These impacts are tangible, but very difficult to quantify, and most studies do not attempt to do so. Some examples of positive spillover effects include:

- Civic pride, especially when a team appears in the post-season
- Raised profile of local higher education institutions, healthcare facilities and businesses
- Local infrastructure upgrades, such as riverfronts and walking paths
- Enhanced investment near the stadium and higher real estate values
- Increased attractiveness of metro area to young professionals

The Pirates are one of three professional sports teams located in the City of Pittsburgh, as the Penguins (National Hockey League) and Steelers (National Football League) also have stadiums or arenas located near PNC Park. The University of Pittsburgh, which competes in the Division I Football Bowl Subdivision (highest division), also plays home football games at Acrisure Stadium (home of the Steelers). The clustered location of these stadiums provides local businesses such as restaurants, bars and hotels with a relatively consistent customer base throughout the year. For the latest completed seasons, the teams attracted over 3.3 million fans to the metro region based on paid attendance figures (Pirates: 1.63 million; Steelers: 667,000; Penguins: 734,000; University of Pittsburgh football: 289,000).

ENDNOTES

- 1 See Pittsburgh Sports and Exposition Authority, [PNC Park](#) and Pennsylvania Office of the Budget, [Redevelopment Assistance Capital Program](#).
- 2 Alternative approaches could take into consideration (1) whether the team would have remained in Pittsburgh without state funding, (2) the amount of net new spending due to the presence of the team (i.e., how much is substitution spending by fans located in a geographic area that would be spent regardless), and (3) alternative uses of the state funds used for park construction.
- 3 To generate a sufficient historical time series, the analysis went back one decade from the 2023 season. If that year was a non-playoff year and the number of total wins was within +/-10 wins of 81 wins (a .500 season), then the year was used. If those two criteria did not hold, then the analysis moved back a year until they did. This convention controls for an outlier base or start year (good or bad).
- 4 Major League Baseball also introduced new rules for the 2023 season that were intended to increase the pace of play and offensive output. These changes may have contributed to increased ticket demand for all teams.
- 5 Major League Baseball is split between two leagues (National and American), each with three geographically based divisions (East, Central and West). These divisions focus on regional rivalries, but also (generally) similar metropolitan markets to enhance fan engagement and competitiveness. The Pirates reside in the National League Central Division which includes St. Louis (Cardinals), Milwaukee (Brewers), Cincinnati (Reds) and Chicago (Cubs).
- 6 Details on team operations spending are proprietary, and the amounts and types of spending are not itemized in this report.
- 7 To reflect the difference between purchased tickets (paid attendance) and turnstile attendance (actual attendance), the IFO applied a cutback to the number of tickets purchased to compute total fan spending both inside and outside of the stadium. Paid attendance data are from BaseballReference.com.
- 8 Visit Pittsburgh supplied data for 2019 and the IFO adjusted for inflation to reflect the 2023 season. The IFO also adjusted average spending on lodging to account for higher accommodation service rates near PNC Park.
- 9 This split is an assumption made by the analysis and is not based on data provided by the team.
- 10 Data are for regular season games only. Postseason/playoff games have higher rates of spending, turnstile attendance and overnight stays.

- 11 It is noted that this figure double counts sales as they move through the supply chain (i.e., business-to-business transactions). If the double counting is removed, the amount is referred to as value added (or gross state product) and is \$307 million.
- 12 The simulation results are not a projection for this or next season and it does not represent a “performance goal.” Rather, it simply quantifies the relative increase in the economic footprint if fan attendance increases by a certain percentage, in this case 28%, which mimics the win total and average attendance for the 2012 season. A 79-win total also approximates an average year in which the team achieves a win percentage that is close to 0.500.
- 13 The mix of local versus non-local fans can have a material effect on the economic impact. Fans from outside the region typically spend more on average, and the spending mix is different (e.g., lodging costs).

APPENDIX

Methodology

The economic contribution or footprint analysis uses a standard “total spend” approach based on the direct spending (including capital spending) made by fans and the Pirates organization related to MLB games played at PNC Park. Because it focuses on spending, the analysis does not (1) track the amount or origin of total revenues received by the team or (2) include any profits retained by owners. Once the amount and type of direct spending have been determined, the IMPLAN input-output economic model uses published data from the U.S. Bureau of Economic Analysis to determine industry supply chain relationships, and economic multipliers to derive the final or ultimate economic impact on output or spending, income and employment.

The analysis uses what is known as the multi-regional input-output (MRIO) approach where the direct spending occurs in Allegheny County, but the economic impacts that flow to the rest of the state are also tracked and included. IMPLAN defines the MRIO approach as follows: “Multi-Regional Input-Output Analysis (MRIO) analyses utilize inter-regional commodity trade and commuting flows to quantify the demand changes across Regions stemming from a change in production and/or income in another Region. It measures the economic interdependence of Regions.” The results shown in this report are the sum of the two defined regions: Allegheny County and Rest-of-the-State.

To model the impact of the spending, the analysis uses the Industry Impact Analysis method within the IMPLAN model. This method is similar to a “bill of goods” approach used by some footprint and impact studies that have access to specific input purchase patterns of the final spend industry that is impacted (for this analysis, spectator sports). The input purchase data that are unique to the team allows the analysis to achieve a higher level of accuracy. For team expenditures and fan spending inside PNC Park, data were provided by the Pirates organization. Visit Pittsburgh provided average spending data for fans attending a sporting event in Pittsburgh with certain technical adjustments made by the IFO. For in-state spending by visiting teams on meals, lodging and travel, the analysis includes travel expenditures reported by the Pirates and assumes that serves as an approximation of those amounts.

All economic impact computations shown in this report used the IMPLAN input-output model. The exception is state taxes generated. Those computations were made by the IFO based on IMPLAN output data (e.g., sales tax), payroll data supplied by the team (personal income tax) and other publicly-available data (opposing team salaries subject to Pennsylvania personal income tax).

About the IFO

The Independent Fiscal Office (IFO), created by [Act 120 of 2010](#), is a non-partisan legislative service agency for the Pennsylvania General Assembly separate from both the executive and legislative branches. The office provides revenue projections along with objective analysis of fiscal, economic and budgetary issues to assist Commonwealth residents and the General Assembly in their evaluation of policy decisions. The IFO may also undertake special studies at the request of members of the General Assembly.

Additional reports and releases are available on the office website.

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The IFO would like to thank the Pittsburgh Pirates and Visit Pittsburgh for their assistance in providing data for this report.

Report design was provided by [The Pavone Group](#).

Confidentiality & Copyright Information

Certain data used in this report are confidential and proprietary. Therefore, the IFO is unable to disclose further data detail and assumptions used in the analysis.

Use of photos contained in this report is restricted due to copyright agreements.

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November 3, 2022

Independent Fiscal Office

Attn: Matthew Knittel, Director

2nd Floor Rachel Carson State Office Building

400 Market Street

Harrisburg, PA 17105

Dear Dr. Matthew Knittel,

Between 2002 and 2006, the Commonwealth contributed \$320 Million in capital funding for the construction of new facilities for four sports teams in Philadelphia and Pittsburgh. The money was financed by general obligation debt of the Commonwealth and was authorized under Chapter 5 of the Capital Facilities Debt Enabling Act (Act 1 of 1999).

At the time, existing facilities used by the Pittsburgh Steelers, Pittsburgh Pirates, Philadelphia Eagles, and Philadelphia Phillies were reaching the end of their useful life. This created a concern about the possible economic impact the departure of a team could have on the Commonwealth's economy.

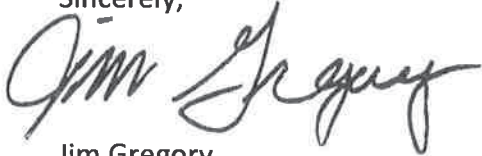
Anyone who has attended events at the stadiums knows intuitively the economic impact extends well beyond the field of play. In addition to the construction jobs that were created when facilities like PNC Park and Citizens Bank Park were built, these facilities support stadium personnel, concert and show support crews, hospitality employees, maintenance staff, and direct suppliers of the teams and facilities. The downstream economic impacts can be just as important, as the crowds attracted to events support local businesses.

As these facilities enter their second decade of use, we believe there is value in conducting a study on the economic impact of PNC Park and Citizens Bank Park. To that end, we are requesting an analysis on the direct and indirect economic impacts of these facilities, including the jobs, investment and spending that result from these two facilities being located in the Commonwealth. We would like the analysis to include the downstream economic impact on

the local businesses that serve the event attendees that patronize the nearby restaurants, hotels and other businesses in the hospitality industry. If there is any available data, we would like to know the relationship the fluctuations in attendance at professional sporting events has on the economic impact.

I appreciate your consideration of this request, and I am available to discuss any further details or aspects of this request that may be needed.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Gregory". The signature is fluid and cursive, with the first name "Jim" being more prominent and the last name "Gregory" following in a similar style.

Jim Gregory
State Representative
80th Legislative District

CC: Allegheny County Controller, VisitPittsburgh, Philadelphia Authority for Industrial Development, Sports & Exhibition Authority of Pittsburgh & Allegheny County



INDEPENDENT FISCAL OFFICE

December 9, 2022

The Honorable James Gregory
Pennsylvania House of Representatives
P.O. House Box 202080
Harrisburg, PA 17120

The Honorable Timothy Bonner
Pennsylvania House of Representatives
P.O. House Box 202017
Harrisburg, PA 17120

Dear Representatives Gregory and Bonner:

Thank you for your letter from November 3, 2022, that requests the Independent Fiscal Office (IFO) to conduct a study on the economic impact from PNC Park and Citizens Bank Park that would include the jobs, investment and spending that result from those two facilities being located in the Commonwealth. At this juncture, we believe that the proposed study is feasible, and we will begin to reach out to stakeholders for relevant data. For that purpose, we plan to include a copy of the request letter from your offices to the IFO.

Per discussions with you and legislative staff, the study will be an economic impact or economic footprint study. It will attempt to quantify any economic activity related to baseball games that take place at the stadiums. The economic impact would include three types of effects:

- **Direct effects** Spending from those attending games (e.g., tickets, concessions, programs, shirts) and any secondary spending related to games, such as parking, dining at local restaurants and overnight accommodations.
- **Indirect effects** Impact on businesses in the supply chain that provide inputs to firms that sell goods and services to final consumers who attend games at the stadiums.
- **Induced effects** Impact from spending by those employed by firms or owners that directly or indirectly supply goods and services to final consumers who attend games at the stadiums. This would include income and spending by athletes.

If possible, the study will attempt to quantify total spending, employment, income and state General Fund tax revenues generated from the three types of effects. The study will also attempt to analyze the relationship between historical game attendance and economic impacts. For example, when sports teams have winning records, attendance will increase, which enhances any economic impact, and may enhance the impact in a non-linear fashion (e.g., regular and new attendees may spend more (on average) on concessions and team merchandise when teams have strong records). Finally, the study will include team payroll data to assess whether there is a general relationship between payroll and team performance.

Because the request is for an economic impact or economic footprint study, the report will not attempt to quantify spending that would have occurred without the stadiums. For example, much of the spending by state residents would have occurred regardless of the teams and stadiums, but would be spent in-state on other goods and services. Spending that would not otherwise occur would generally be attributable to non-

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residents who travel into the state or residents who would have traveled out of state to attend baseball games.

Over the next month, we will begin to reach out to government agencies, firms, owners and others to request the data necessary to perform this analysis. The level of detail included in the report will largely depend on the data received, and the timeline will depend on the timeliness of responses to these data requests. It is our intention to transmit the report to your offices in late Spring. We will plan to contact you if that timeline requires adjustment.

Per the policy of the office, we will post the report to the IFO website three days after transmittal to your offices. During that three-day interval, we are available to meet with you to discuss the results and address any questions that you may have. If you have any further questions or concerns about the proposed study, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Matthew J. Knittel". The signature is written in a cursive style with a large, stylized initial 'M'.

Matthew Knittel

Director, Independent Fiscal Office



PITTSBURGH PIRATES

PNC PARK
115 FEDERAL STREET PITTSBURGH, PA 15212
412.323.5000

On behalf of the Pittsburgh Pirates, we would like to thank the Pennsylvania Independent Fiscal Office ("IFO") for highlighting the significant economic impact that the Pirates generate for our city, county and state.

As noted in the report, attendance levels "have a direct impact on the size of the team's economic footprint." Given the number and size of baseball and non-baseball events held at PNC Park, the Pirates drive the highest annual attendance of all sports and entertainment venues in the Pittsburgh region and, therefore, have a substantial economic impact on the region.

While the report clearly demonstrates the significant economic impact of the Pirates, there is other data and information available that, if analyzed and incorporated into the report, would tell a more comprehensive and accurate story.

For example, in attempting to demonstrate a correlation between Major League payroll and winning percentage, the report limits the sample size of its analysis to Pirates payroll and winning percentage over a 10-year period, rather than incorporating data from across Major League Baseball that is publicly available. Moreover, the report acknowledges that there is a myriad of other factors that impact winning percentage, yet those factors were neither analyzed nor incorporated into the report. Focusing solely on Major League payroll is limiting because there are countless other investments that clubs make to develop a winning team.

The report also does not address the numerous other ways in which the Pirates and PNC Park positively impact our region. For example, the Pirates and Pirates Charities fund and host numerous events, programs and initiatives that benefit the local community. Further, in addition to Pirates games and concerts, PNC Park hosts countless other baseball and non-baseball events throughout the year, making it a valuable community asset.

Again, we appreciate the IFO for demonstrating the significant economic impact that the Pirates have on our region. As an organization, we look forward to driving more economic impact for the city, county and state, as well as providing many other benefits to our local community, for decades to come.