Taking My Talents to South Beach (and Back)

Evidence on Local Externalities from a Superstar Athlete*

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Abstract

We study the local economic spillovers generated by LeBron James' presence on a team in the National Basketball Association. Mr. James, the first overall pick of the 2003 NBA draft, spent the first seven seasons of his career at the Cleveland Cavaliers, and then moved to the Miami Heat in 2010, only to return to Cleveland in 2014. Long considered one of the NBA's superstars, he has received the league's MVP award four times, won three NBA championships, and been a part of two victorious US teams at the Olympics. We trace the impact a star of Mr. James' caliber can have on economic activity by analyzing the impact his departures and arrivals had on business activity close to the Cleveland Cavaliers and Miami Heat stadiums. We find that Mr. James has a statistically and economically significant positive effect on both the number of restaurants and other eating and drinking establishments near the stadium where he is based, and on aggregate employment at those establishments. Specifically, his presence increases the number of such establishments within one mile of the stadium by about 13%, and employment by about 23.5%. These effects are very local, in that they decay rapidly as one moves farther from the stadium.

JEL: J2, J44, J61, R1, R5, Z2

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I Spillovers from Superstar Athletes

In 2010, Cleveland Cavaliers basketball player LeBron James, the first pick in the 2003 National Basketball Association (NBA) draft, famously announced that after seven seasons in Cleveland he was "going to take [his] talents to South Beach and join the Miami Heat" (ESPN, 2010). Four years later he returned to Cleveland, in his native Ohio. In this paper, we exploit this natural experiment to study the local economic spillovers generated by the presence of a superstar on an NBA team. Mr. James certainly enjoys that status: he has received the league's MVP award four times, won three NBA championships, and been a part of two victorious US teams at the Olympics. How large these spillovers are, if they exist at all, is a question that brings together two significant lines of research: evaluations of the economic impact of sports events and facilities on the one hand, and the literature on superstars and the differences they can make on the other.

Evaluations of the economic impact of sports venues are of particular importance to local governments. They often subsidize stadium construction to entice professional sports teams to choose their cities as their home base, citing benefits to the local economy to justify the use of public money for these purposes. This has long been a puzzling line of argument to economists. As Coates and Humphreys (2008) explain, the quasi-consensus among economists at the time was that professional sports franchises and facilities do little to nothing to help local economic development, income growth, or job creation. More recent work, especially work that accounts for a steep geographical gradient in impact size, reaches somewhat more nuanced conclusions. Feng and Humphreys (forthcoming), for example, find that while two sports facilities in Columbus, Ohio have a significant and positive effect on property values that decays rapidly with distance, suggesting sizable but very local intangible benefits. And although Harger et al. (2016) find that the arrival of new sports facilities to 12 US cities in the 2000s did not trigger an increase in the number of nearby businesses openings, employment at new businesses near new facilities did exceed that at new businesses area further away from the stadium but still in the same MSA.

To the extent that they can be disentangled, sports events - as opposed to physical infrastructure - do not seem to help local economies much either. Billings and Holladay (2010) find that the Olympics have no long-term impact on host cities' real output per capita or trade openness. Rose and Spiegel (2011) add that it is the signal produced by bidding for the Olympics, not hosting as such, that bolsters trade. Looking at the 2000 Sydney Olympics specifically, Giesecke and Madden (2011) find no positive impact on tourism and a negative impact on Australian household consumption levels. In addition, Maennig and Richter (2012) find that hosting the Olympics does not lead to higher exports. Baade, Baumann, and Matheson (2008a) find that athletic "mega-events," including World Cup and major-league championship games, do not increase taxable sales in host regions. The same authors (2008b, 2011) find that college football games have no significant impact on host cities' employment or personal income. Similarly, Coates and Depken (2009, 2011) find that the impact of such games on local tax revenue is not clear. Finally Davis and End (2010) find that the winning percentage of a local NFL team, not its presence as such, has a positive and significant impact on real per capita personal income.

Papers that conclude that certain sports events do help the local economy have often narrowed down the variables of interest or focused on the very short term. As Baade and Matheson (2016) put it for the Olympics: "the overwhelming conclusion is that in most cases the Olympics are a money-losing proposition for host cities; they result in positive net benefits only under very specific and unusual circumstances." Feddersen and Maennig (2013) find that the 1996 Olympic Games in Atlanta increased local employment, but only in certain industries, and only for the duration of the games. Baade, Baumann, and Matheson (2010) find that while the 2002 Salt Lake City Winter Games hurt aggregate sales, they helped hospitality industry sales. Jasmand and Maennig (2008) conclude that even though the 1972 Munich Olympic Summer Games had no effect on local employment, they did coincide with higher long-term income growth. The 1996 Games appear to have increased local employment, but not wages (Hotchkiss et al. (2003)). Porter and Fletcher (2008) find that the 1996 Games and 2002 Games did not influence local taxable sales, hotel occupancy, or airport usage, but did increase hotel prices.

Are superstars different? Since the publication of Rosen (1981)'s canonical model suggests that superstars can generate disproportionate returns, there have been numerous studies analyzing the impact superstars have on various performance indicators (e.g. attendance of sports games and the performance of a firm). In the sports context that is of interest here, Jane (2014) shows that NBA superstars help increase attendance at both home and away games. The superstar effect is also apparent in the MLB (Ormiston (2014) and Lewis and Yoon (2016)), golf (Gooding and Stephenson (2016)), the MLS (Jewell (2017)), and the Bundesliga (Brandes et al. (2008) and Feddersen and Rott (2011)). In this paper we study whether this effect extends to economic outcomes.

We trace the impact a star of Mr. James' caliber can have on economic activity by analyzing the impact his departures and arrivals had on business activity close to the Cleveland Cavaliers and Miami Heat stadiums. We find that Mr. James has a statistically and economically significant positive effect on both the number of restaurants and other eating and drinking establishments near the stadium where he is based, and on aggregate employment at those establishments. Specifically, his presence increases the number of such establishments within one mile of the stadium by about 13%, and employment by about 23.5%. These effects are very local, in that they decay rapidly as one moves farther from the stadium. We detail the empirical analysis in the next section.

II LeBron in Cleveland and Miami

The empirical approach we follow to identify the impact LeBron James' presence has on local economic activity, specifically in the eating and drinking industry, is similar to that used in Shoag and Veuger (2017). We draw concentric circles around sports facilities to compare changes in economic activity in the inner circle to changes in economic activity in outer-more rings around them. To measure establishment and employment counts within a certain radius of the Quicken Loans Arena in Cleveland and the American Airlines Arena in Miami, we use geocoded information from the Esri Business Analyst Dataset made available by Harvard's Center for Geographic Analysis. The precise geographic information available in this annual data set allows us to calculate the number of stores and employment counts in the eating and drinking industry, and in the restaurant subindustry more specifically, at a specified mile radius. We focus on this particular industry and subindustry as they stand to gain most from increased attendance and fan enthusiasm, and include all establishments in those industries that are within 10 miles of either stadium in our analysis.

A preliminary look at the data gives us Figures 1a and 1b, which show how the number of restaurants within one mile of Mr. James' home stadiums in Cleveland and Miami changed over the past ten years. The figures strongly suggest that Mr. James positively affected the number of restaurants near his home stadium. As discussed, he joined the Cleveland Cavaliers in 2006, left for the Miami Heat in 2010, and returned to Cleveland in 2014. Figure 1a and 1b show a downward trend in the number of restaurants in Cleveland between 2010 and 2014 that coincides with an upward trend in Miami. After Mr. James returned to the Cavaliers, the number of restaurants near the Quicken Loans Arena in Cleveland spiked, while the number of restaurants within a mile of the American Airlines Arena started to slide. Figure 2 shows some suggestive evidence on the mechanism underlying these patterns: there is a positive correlation between the number of regular-season wins won by the Cavaliers and the Heat and the number of restaurants located within one mile of the corresponding stadium.[1]

Turning to a more formal analysis, Table 1 presents the results of regressions that test whether Mr. James' presence has a positive effect on the number of restaurants, and on the number of eating and drinking establishments overall, near basketball stadiums in Cleveland and Miami. We use a difference-in-difference approach. Specifically, we run regressions with the following specification:

[1] Data on regular-season wins come from Land of Basketball, `http://www.landofbasketball.com/`.

$$ln(Establishment_{it}^{h}) = \alpha + \beta(LeBron)_{it} + \delta_i + \gamma_t + \varepsilon_{it} \quad (1)$$

where $Establishment_{it}^{h}$ is the number of establishments of type h in city i in year t within the indicated distance away from the stadium in each city. We look at two types of establishments, restaurants (columns 1, 3, and 5) and eating & drinking establishments (columns 2, 4, and 6). $LeBron_{it}$ is a dummy variable that equals 1 when LeBron James plays on city i's team during year t and 0 otherwise. δ_i represents city fixed effects and γ_t represents year fixed effects.

Table 1 shows that Mr. James' impact is strongest in the area immediately surrounding the stadiums, as expected. Specifically, his presence increased the number of restaurants within 1 mile of a stadium by about 12.8% and the number of eating and drinking establishments by about 13.7%. Between 1 and 7 miles, those increases are smaller - 8.7% and 10.7% - and when we go beyond 7 miles, the superstar effect is no longer statistically distinct from nil.[2] This confirms our suspicion: that superstars can make a difference that has a noticeable economic impact, and that the impact is very local.

Table 2 shows the results from regressions similar to Table 1, but where the dependent variable is now employment instead of the number of establishments. Within 1 mile, Mr. James' presence raises the number of workers employed by eating and drinking establishments by 23.5%, but the effect disappears once again beyond the 7 mile radius.

Having established the size and significance of LeBron's effect on local economic activity, let us look at one of obvious dimension of potential heterogeneity. Table 3 presents results of regressions that examine one city at a time and helps us understand the variation in numbers of restaurants located in areas that are nearby (defined as within one mile) and to those that are far away. Specifically, we run regressions with the

[2] We choose these distances because it ensures that the area of the outer ring and that of the middle ring are similar.

following specification:

$$ln(Restaurants_t) = \alpha + \beta(LeBron)_t + \phi(Near)_t + \rho(LeBron * Near)_t + \varepsilon_t \quad (2)$$

where $Restaurants_t$ is the number of restaurants in year t within one mile from the stadium in each city or outside of that radius. $LeBron_t$ is a dummy variable that equals 1 when LeBron James is on the city's team during year t and 0 otherwise. $Near_t$ is a dummy variable that equals 1 when the observation refers to the number of restaurants within 1 mile of a stadium and 0 otherwise. $LeBron * Near_t$ is the interaction variable between $LeBron$ and $Near$. We present two sets of results. Column 1 uses data from Cleveland, while column 2 focuses on Miami.

The results show that Mr. James' superstar effect is positive and significant on the number of restaurants near the stadium in Cleveland, but not in Miami. Two potential explanations come to mind. Perhaps Mr. James is particularly beloved in his native Ohio. Or maybe "superstar amenities" are substitutes, not complements, and Miami has plenty of them even without Mr. James, generating fiercer competition and an attenuated impact of any specific superstar.

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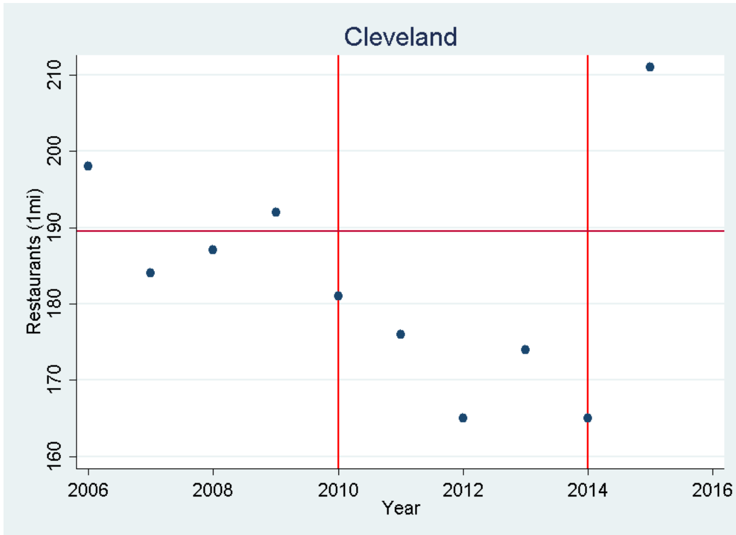

Figure 1a. City Timeline: Cleveland

Note: The figure shows the number of restaurants within 1 mile of the Quicken Loans Arena in Cleveland for each year between 2006 and 2016. LeBron James left Cleveland Cavaliers in 2010 and rejoined in 2014. The horizontal line represents the average number of restaurants within 1 mile of the stadium before 2010.

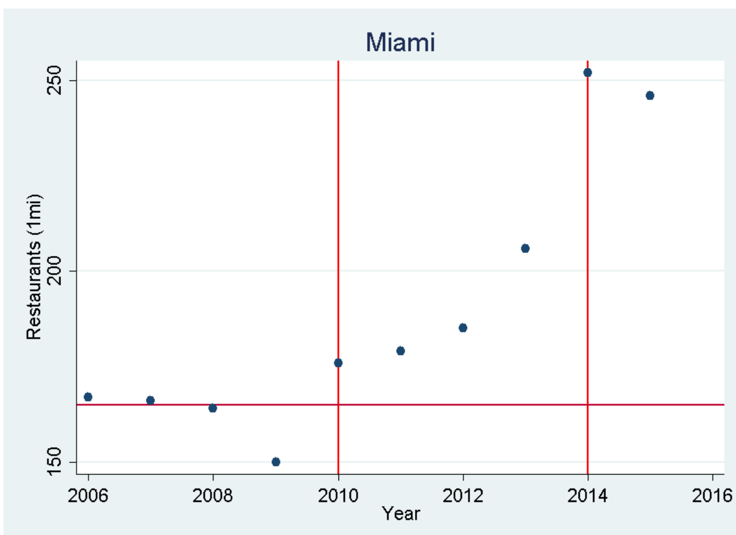

Figure 1b. City Timeline: Miami

Note: The figure shows the number of restaurants within 1 mile of the American Airlines Arena in Miami for each year between 2006 and 2016. LeBron James joined Miami Heats in 2010 and left in 2014. The horizontal line represents the average number of restaurants within 1 mile of the stadium before 2010.

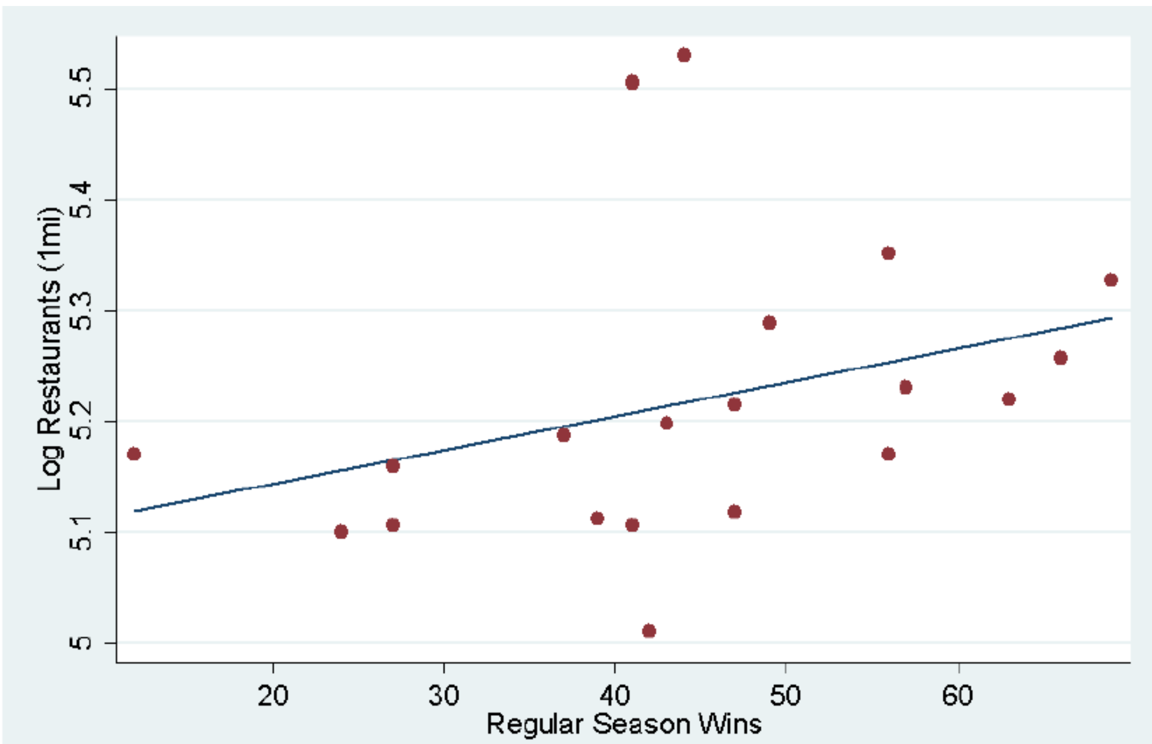

Figure 2. Number of Victories to Number of Restaurants

Note: The best-fit line shows the positive correlation between the number of victories a team won in a certain season to the log-value of the number of restaurants within 1 mile of the stadiums. Only data from Cleveland Cavaliers and Miami Heat are included.

Table 1. The LeBron James Effect on Number of Establishments

	1 Mile		Between 1 and 7 Miles		More than 7 Miles	
	(1)	(2)	(3)	(4)	(5)	(6)
	Restaurants	Eating and Drinking Establishments	Restaurants	Eating and Drinking Establishments	Restaurants	Eating and Drinking Establishments
LeBron	0.1277**	0.1370*	0.0871*	0.1073*	0.0547	0.0726
	(0.0523)	(0.0729)	(0.0399)	(0.0515)	(0.0363)	(0.0442)
City Fixed Effects	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
R^2	0.648	0.551	0.967	0.915	0.953	0.905
Observations	20	20	20	20	20	20

Note: **T**his table reports estimates of regressions of the following form:

$$ln(Establishment_{it}^{h}) = \alpha + \beta(LeBron)_{it} + \delta_i + \gamma_t + \varepsilon_{it}$$

where $Establishment_{it}^{h}$ is the number of establishments of category h in city i in year t within the indicated distance from the relevant stadium. There are two categories of establishments: restaurants, and eating and drinking establishments. $LeBron_{it}$ is a dummy variable that equals 1 when LeBron James plays in city i's team during year t and 0 otherwise. δ_i represents city fixed effects and γ_t represents year fixed effects. Robust standard errors in parentheses.

$* \; p<0.1$, $** \; p<0.05$, $*** \; p<0.01$

Table 2. The LeBron James Effect on Number of Employees

	1 Mile (1)	Between 1 and 7 Miles (2)	More than 7 Miles (3)
LeBron	0.235** (0.086)	0.230 (0.159)	0.067 (0.184)
City Fixed Effects	X	X	X
Year Fixed Effects	X	X	X
R^2	0.949	0.884	0.495
Observations	20	20	20

Note: **T**his table reports estimates of regressions of the following form:

$$ln(Employees^{h}_{it}) = \alpha + \beta(LeBron)_{it} + \delta_i + \gamma_t + \varepsilon_{it}$$

where $Employees_{it}$ is the number of employees working at an eating and drinking establishment in city i in year t within the indicated distance away from the stadium in each city. $LeBron_{it}$ is a dummy variable that equals 1 when LeBron James plays in city i's team during year t and 0 otherwise. δ_i represents city fixed effects and γ_t represents year fixed effects. Robust standard errors in parentheses.

$*$ p<0.1, $**$ p<0.05, $***$ p<0.01

Table 3. The LeBron James Effect by City

	Restaurants	
	Cleveland	**Miami**
	(1)	(2)
LeBron	-0.003	0.152
	(0.040)	(0.126)
Near	-2.153***	-2.584***
	(0.041)	(0.107)
LeBron*Near	0.137**	-0.031
	(0.056)	(0.179)
Constant	7.282***	7.763***
	(0.029)	(0.076)
R^2	0.998	0.985
Observations	20	20

Note: This table reports estimates of regressions of the following form:

$$ln(Restaurants_t) = \alpha + \beta(LeBron)_t + \phi(Near)_t + \rho(LeBron * Near)_t + \varepsilon_t$$

where $Restaurants_t$ is the number of restaurants in year t within or outside a one mile radius from the stadium. $LeBron_t$ is a dummy variable that equals 1 when LeBron James plays on the city's team during year t and 0 otherwise. $Near_t$ is a dummy variable that equals 1 when the observation refers to the number of restaurants within 1 mile of a stadium and 0 otherwise. $LeBron * Near_t$ is an interaction variable between $LeBron$ and $Near$. Results in **column 1** come from a regression in which only observations from Cleveland are included; results in **column 2** apply to Miami. Robust standard errors in parentheses.

$* \; p<0.1$, $** \; p<0.05$, $*** \; p<0.01$