

Sport Economics

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Introduction

All papers considered in this section of the digest come from published issues of overall ten pre-selected journals. Out of these ten journals, two are exclusively dedicated to sport economics related research, i.e., the *Journal of Sports Economics* (JSE), which is the official Journal of the *North American Association of Sports Economists* (NAASE) and the *International Journal of Sport Finance* (IJSF), which is the official journal of the *European Sport Economics Association* (ESEA). Furthermore, sport economics research is regularly published in either of the three sport management journals, i.e., the *European Sport Management Quarterly* (ESMQ), the *Journal of Sport Management* (JSM), as well as the *Sport Management Review* (SMR). The following list provides a summary of overall 40 identified papers covering sport economics related research that have been published in either of these five journals before July 2021:

- JSE (Issues 1-5): 25 papers, hereof 25 covering sport economics related research,
- IJSF (Issues 1 & 2): 8 papers, hereof 8 covering sport economics related research,
- ESMQ (Issues 1 & 2): 16 papers, hereof 3 covering sport economics related research,
- JSM (Issues 1,2 & 3): 20 papers, hereof 4 covering sport economics related research,
- SMR (Issue 1): 8 papers, hereof 0 covering sport economics related research.

These 40 papers fall into seven different categories:

- *Performance analysis* (such as home advantage or reference point behaviour): 8,
- *Economic effects* (such as the effects of sport teams, facilities or events): 7,

- *Labour market issues* (such as labour market restrictions or salary determinants): 7,
- *Sports demand* (such as the determinants of stadium attendance and TV viewing): 7,
- *Sports participation* (such as the effects on health or well-being): 3,
- *Finance* (such as issues concerning UEFA's financial fair play or fan bonds): 3,
- *Miscellaneous* (such as contest design issues or theoretical modelling): 5.

New evidence on the local economic effects of sports

In this edition of the digest, I review four empirical studies exploring the *local* economic effects of professional sports.¹ While analyzing the economic effects of sports already has a long tradition in sport economics related research, *causal* evidence about the *local* economic effects of sports is not fully established yet (see, for instance, Pawlowski, Steckenleiter, Wallrafen, & Lechner (2021) for a recent exception). This is a severe limitation since a large portion of sports related public expenditures (e.g., for the construction of sport facilities) is regularly spent by *local* governments. Using fine-grained panel data and sophisticated econometric methods, the four papers reviewed in this section significantly advance our understanding on this topic by exploring the causal effects of professional sport teams, facilities and events on *local business activities* and *employment figures* (Paper 1), *city-specific air travels* (Paper 2), as well as *local hotel performance* (Papers 3 and 4).

The first paper was written by Nola Agha and Daniel Rascher and published in the third issue of the *Journal of Sports Economics*. It is focused on the effects of stadiums and teams on local business activities and employment figures. More precisely, the authors test the popular claim, that the entry of new teams and the building of new stadiums may lead to economic (re-)development in the area. The data used come from the Census Bureau and measures annual establishment and employment changes between 2004 and 2012 at the level of Metropolitan Statistical Areas (MSA) and Micropolitan Statistical Areas (MiSA) in the U.S. These data were amended by several market-specific characteristics as well as information about all team entries, exits and

¹ Note, that three further papers, i.e. Chakravarti & Boronczyk (2021) as well as Ge & Humphreys (2021a; 2021b), which belong to the identified seven papers exploring the economic effects of sports are reviewed by Lisa Kihl in her section on *Sport Ethics and Integrity*.

new stadiums during the observation period. Following a difference-in-difference set-up and employing different panel data estimations for several hundreds of model specifications, the authors test whether and to what extent the overall 65 (67) team entries (exits) and 68 new stadiums had any effects on net changes in establishments and employment in the corresponding MSAs and MiSAs. Overall, they do not find empirical evidence, that new stadiums or team entries indeed stimulate local economic development. Rather, teams seem to have a higher probability to move into more prosperous and relatively fast-growing markets.

Although the authors acknowledge the relevance of using even more fine-grained local data for testing more granular effects in the future, the paper offers an important contribution to the existing literature for several reasons. *First*, while a large body of literature has already explored whether teams do generate any economic impact, only very few studies have previously explored the potential impact on economic (re)development in the local market. *Second*, the few existing studies exploring this issue have looked at business survivals and business creation *separately*. As such, by looking at net change in firms and employment figures this is the first study to explore the potential effects on business survivals and business creation *simultaneously*. *Third*, the US wide approach allows departing from a single city case study perspective and arriving at more generalizable results about the (supposed) impacts of teams and stadiums. *Finally*, in contrast to the vast majority of studies on professional team sports in the U.S., this study does not only look at Major Leagues in baseball (Major League Baseball, MLB), basketball (National Basketball Association, NBA, and Women National Basketball Association, WNBA), football (National Football League, NFL), hockey (National Hockey League, NHL), and soccer (Major League Soccer, MLS), but also at the corresponding Minor Leagues. This seems to be particularly relevant since Minor League teams often share the same markets as Major League teams and venues built in small cities were found to have a similar per capita cost (see Agha & Coates, 2015).

The second paper was written by Bruno Caprettini and published in the first issue of the *Journal of Sports Economics*. This paper explores the effects of UEFA Champions League (UCL) group stage games between 1998/99 and 2010/11 on air arrivals. As such, Caprettini compares the routes across cities with teams playing in the *same* group with those routes across cities with teams playing in *different* groups and exploits the

fact that teams are randomly drawn into these groups. Since he explores the effect of being in the same group *on top* of the effect from just generally taking part in the UCL, his underlying assumption is, that media exposure and as such the general visibility of a city hosting an UCL group stage game is comparably greater in the cities where the opposing team resides. As could be expected, results suggest an increase of air arrivals from cities where the opposing teams reside in the month of the game. This effect measures about 7% extra arrivals and is likely to be attributed to fans following their teams in the away matches, as argued by the author. Remarkably, however, he also finds about 5-8% extra arrivals for the three months following the group stage. This finding is suggestive of a visibility effect driven by media exposure shortly before, during and after the game. As such, his findings suggest that teams participating in the UCL might increase the visibility of their hometowns.

Even though the air arrival measure is only an approximation of the real air arrivals of interest and measured only on a monthly basis, the analysis significantly contributes to the literature on the effects of sports on tourism. On the one hand, it is one of very few studies carefully exploring the long(er)-term (legacy) effects of sport events on tourism. On the other hand, the empirical study follows a comprehensive and well-developed empirical approach and relies on a credible identification strategy in order to arrive at causal evidence.

The remaining two papers extend the literature exploring the effects of sport events on local hotel performance by using daily information about hotels from STR, a company providing data for global hospitality sectors. One paper was written by Timothy D. DeSchraver, Timothy Webb, Scott Tainsky, and Adrian Simion, and published in the third issue of the *Journal of Sport Management*. By exploiting panel data between 2003 and 2017, the paper analyzes the effects of overall 1,249 Saturday collegiate football games played by 14 different teams from the Southeastern Conference (SEC) on local hotel performance.

The dependent variable combines daily data on occupancy rates with average daily rates and measures weekend revenue per available room for hotels that are located within 25 miles of each stadium. Different fixed effects regressions reveal that various team and game characteristics significantly influence local hotel performance. For

instance, home team characteristics indicate that consumers are influenced by anticipated team quality and past performance. As such, revenues raise by around 8% if the home team was national champion in the previous season. Likewise, revenues increase by about 5.8% if the home team was amongst the teams listed in the Associate Press top 25 preseason poll. The relevance of team quality is confirmed by several variables measuring opponent team quality and popularity. As such, revenues increase by about 11.5% if the opponent team was amongst the teams listed in the Associate Press top 25 preseason poll. Likewise, in-conference match-ups and rivalry games raise revenues by about 18.5% and 8.5% respectively. Finally, upper-class hotels seem to be particularly popular during these football weekends since they capture a comparably larger premium than economy and middle-class hotels.

The other paper was written by Lauren R. Heller and E. Frank Stephenson and published in the second issue of the *Journal of Sports Economics*. In this paper, the authors explore the effects of hosting a Super Bowl on local hotel performance by exploiting panel data covering four Super Bowls played in Glendale (2015), Santa Clara (2016), Houston (2017), and Minneapolis (2018). In contrast to DeSchriver et al., the authors keep the available daily measures and explore the effects of hosting a Super Bowl on *average daily room rates*, *room rentals* and *hotel room revenues* of hotels located within 30 miles of each stadium by running various fixed effects regressions separately for each city. Overall, they find that *room rates* and *hotel room revenues* sharply increase when hosting a Super Bowl. For instance, they estimate a marginal increase in average daily *room rate* for Super Bowl Sundays between \$183 (Houston) and \$261 (Minneapolis). Such increases can also be observed for the days before the event took place. Likewise, for the game night and the preceding nights of the Super Bowl they estimate an increase in aggregate *hotel room revenue* by up to \$15 million for the night of the Super Bowl (Houston).

Interestingly, the results for the Super Bowl weekend in Santa Clara are in general considerably smaller. Moreover, the authors find even negative effects on *room rentals* as well as an overall net loss in aggregate *hotel room revenues* for the days preceding this Super Bowl weekend. The authors explain their findings with the location of the stadium relative to downtown San Francisco which is equipped with considerably more luxury hotels compared to Santa Clara. Since Super Bowl tickets are quite expensive, the

authors expect that attendees of the game rather prefer such upper-class hotels. This hypothesis is in line with the findings by DeSchrive et al. and supported by some auxiliary regressions using a 30-50 miles ring instead of a 30 miles radius, thus including the hotels in downtown San Francisco instead of Santa Clara. Finally, the authors observe a so called 'hangover'-effect since most of the effects for the days following a Super Bowl are negative.

Overall, the hotel performance data used from STR is both a major strength as well as a major weakness of these papers. On the one hand, the STR data offer a great level of granularity by covering *daily* information on *local* hotel performances *across* markets. On the other hand, however, the STR data suffer from a serious sample selection problem since (according to DeSchrive et al.) only 75% of all hotels – and mainly larger chains – have subscribed to STR. As such, lodging in independently operating hotels is underrepresented in the data while lodging arranged through online platforms like AirBnB is not at all considered.

Despite these issues, however, both papers still significantly contribute to the scarce literature trying to disentangle the *local* economic effects of sports on certain industries. Most notably, they complement the few existing studies that already used daily hotel performance metrics (Chikish, et al., 2019; Depken & Stephenson, 2018) by exploring for the first time hotel performance across *multiple and smaller* markets instead of a *single large city* market (the DeSchrive et al.-paper) or by comprehensively analyzing *effect heterogeneity* with regard to radius size (the Heller & Stephenson-paper). In fact, Heller and Stephenson reveal a practically highly relevant controversy since local governments regularly incur the costs of sport events while neighboring municipalities might (eventually) benefit from increased business activities following these events.

Summing up, all four papers reviewed in this section provide interesting new insights about the (non)existence of local economic effects of sports. The results by Agha and Rascher question the popular claim that the entry of new teams and the building of new stadiums may lead to economic (re-)development in the area. Their findings rather suggest, that a positive correlation (if any) between new stadiums and local business activities and employment figures could be explained by self-selection, i.e., teams seem to have a higher probability to move into more prosperous and relatively fast-growing

markets. In contrast to this, Caprettini reveals a long(er)-term (legacy) effect of playing in the UCL since teams participating in the UCL might increase the visibility of their hometowns and as such increase the number of visitors at least for several months after the games took place. Finally, DeSchrive et al. as well as Heller and Stephenson reveal considerable effect heterogeneity with regard to sport event related local hotel performance since the effects, they found depend on team characteristics (such as team quality), game characteristics (such as rivalry games) and hotel characteristics (such as the quality and location).

Annotated bibliography

Agha, N. & Rascher, D. (2021). Economic development effects of Major and Minor League teams and stadiums. Journal of Sports Economics, 22(3), 274–294.

The authors, researchers at the University of San Francisco (CA, USA), use regional data from the Census Bureau on net establishment and employment changes between 2004 and 2012 to test whether new stadiums lead to economic development. By using a difference-in-difference design and employing different panel data estimation techniques they do not find any empirical support for the popular claim, that new stadiums lead to economic development, neither at Major nor at Minor League levels. Rather they observe a selection effect, i.e., teams have a higher probability to move into more prosperous and relatively fast-growing markets in the year prior to the entry.

Caprettini, B. (2021). Team visibility and city travel: Evidence from the UEFA Champions' League random draw. Journal of Sports Economics, 22(1), 85–114.

The author, researcher at the University Zurich, explores whether UEFA Champions League (UCL) group stage games between 1998/99 and 2010/11 might boost the visibility of a city among tourists using monthly figures of air arrivals from Eurostat. In order to identify the effect of interest, the author compares the routes across cities with teams playing in the same group with those routes across cities with teams playing in different groups and exploits the fact that teams are randomly drawn into these groups. Overall, he observes a positive and significant mean effect of about 7% more arrivals for the month of the match and about 5-8% more arrivals for the three months following the group stage.

DeSchrive, T. D., Webb, T., Tainsky, S., & Simion, A. (2021). Sporting events and the derived demand for hotels: Evidence from Southeastern conference football games. Journal of Sport Management, 35(1), 228–236.

The authors, researchers at the University of Delaware and Wayne State University, combine data from various sources in order to explore the effects of 1,249 Saturday collegiate football games played by 14 teams from the Southeastern Conference (SEC) on local hotel performance between 2003 and 2017. In this regard, hotel performance is measured as weekend revenue per available room for hotels that are located within 25 miles of each stadium. Different fixed effects regressions reveal that various team and game characteristics (such as team quality, in-conference match-ups, or rivalry games) significantly influence local hotel performance. Moreover, upper-class hotels seem to be particularly well suited for capturing a comparably large premium during football weekends.

Heller, L. R. & Stephenson, E. F. (2021). How does the Super Bowl affect host city tourism? Journal of Sports Economics, 22(2), 183–201.

The authors, researchers at the Berry College (Mount Berry, GA, USA), use daily performance data of hotels located within 30 miles of the stadiums in Glendale, Santa Clara, Houston, and Minneapolis between 2010 and 2018 in order to test the effects of hosting a Super Bowl. By employing different regression models, the authors control for various confounding factors in order to identify the effect of interest. Overall, they find that both room rates as well as hotel room revenues sharply increase when hosting a Super Bowl. At the same time, however, they detect considerable effect heterogeneity ranging from net losses in room rentals (in Santa Clara) to a net gain in room rentals of about 63,000 (in Minneapolis).

Further references

- Agha, N. & Coates, D. (2015). A compensating differential approach to valuing the social benefits of Minor League Baseball. *Contemporary Economic Policy*, 33(2), 285–299.
- Chakravarti, P. & Boronczyk, F. (2021). Corruption and sponsor value: an event study analysis. *International Journal of Sport Finance*, 16(1), doi 10.32731/IJSF/161.022021.04
- Chikish, Y., Humphreys, B.R., Liu, C., & Nowak, A. (2019). Sports-led tourism, spatial displacement, and hotel demand. *Economic Inquiry*, 57(4), 1859–1878.
- Depken, C.A., & Stephenson, E.F. (2018). Hotel demand before, during, and after sports events: Evidence from Charlotte, North Carolina. *Economic Inquiry*, 56(3), 1764–1776.
- Ge, Q., & Humphreys, B. (2021a). Athlete misconduct and team sponsor stock prices: The role of incident type and media coverage. *Journal of Sport Management*, 35(3), 216–227.
- Ge, Q., & Humphreys, B. (2021b). Athlete off-field misconduct, sponsor reputation risk, and stock returns. *European Sport Management Quarterly*, 21(2), 153–172.
- Pawlowski, T., Steckenleiter, C., Wallrafen, T., & Lechner, M. (2021). Individual labor market effects of local public expenditures on sports. *Labour Economics*, 70(101996), doi 10.1016/j.labeco.2021.101996