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Understanding the Economic and Governance Dimensions of Sports

ICSS-CID Research Report

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Introduction

From stadiums to ski resorts, policymakers often praise the economic benefits that sports-related activities allegedly bring to their surrounding economies. Despite such rhetoric, discussion of any economic benefits emanating from the sports economy is premature without a better understanding of the industry itself. Policymakers and analysts frequently interpret the sports economy differently, rendering comparisons across time and place difficult. This sort of disagreement is often the result of poor data collection and standardization. If policymakers had access to better data on the industry, they could better understand the relationship between sports and the broader economy. Better data allows observers to more accurately assess how the presence or absence of sports-related activities could shape their economy. More accurate assessments could, in turn, craft better policymaking with respect to the sports sector.

Sports policy decisions deserve such attention for at least two reasons. First, they are significant in size, often involving large amounts of public money. Public policies with respect to sports are generally associated with large, expensive infrastructure projects, many of which are related to high-profile mega-events like the Olympics or the FIFA World Cup. The 2012 Summer Olympics in London, for example, cost the municipal and national governments about 15.07 billion dollars (ODA report). These investments, however, aren't limited to mega-events. National, regional and municipal governments across the United States and Europe regularly provide taxpayer money to support specific professional sports teams or athletic complexes. For instance, Scott Walker, the governor of Wisconsin, approved legislation in August 2015 that would provide 250 million dollars of public money to aid in the construction of a new stadium for the Milwaukee Bucks basketball team (Johnson 2015). Long contends that these sorts of public subsidies are systematically underreported in the United States. She writes that subsidies for stadiums in the four biggest sports leagues in the United States are underestimated by an average of USD 50 million per facility (Long 2005).

Second, sports policy decisions are significant because they are regularly made in the face of substantial tradeoffs. When public money is used to finance a new stadium, it is directed away from education, health care, or other government priorities. There is a high opportunity cost to public funds, especially when governments have finite budget constraints. When the city of London invested millions of public funds in the 2012 Summer Olympics, it prioritized the event over other projects. Likewise, several weeks before Governor Walker approved the 250 million dollars public investment in the Milwaukee stadium, he proposed a cut to the state university system of the exact same amount (Gabriel 2015). These tradeoffs are even more significant when developing or emerging markets attempt to enter the sports economy.

The significant sums that South Africa and Brazil spent to host the 2010 and 2014 World Cups could have been devoted to other struggling policy areas such as health, education, or infrastructure.

Despite the importance of sports policy decisions, there is much that we still don't understand about the industry. Of these gaps in our knowledge, perhaps the most fundamental relates to the focus on inadequate estimates on the size of the sports economy itself. Ideally, one would hope that sports policy decisions are justified through analyses of comprehensive data. Unfortunately, most governments are "blind" when making these decisions because data on the sports economy is inadequate. Highly aggregated statistics are regularly used in the public debate, but these statistics often have little substantive backing. Andreff writes that "most of the economic data related to sports which are circulated by mass media are simply rough estimates" (Andreff 2008, 14). Without a rigorous accounting of the sports economy, policymakers are susceptible to sensationalized and exaggerated figures. These figures are often included in media reports for their ability to attract attention instead of their accuracy. Policymakers can't make informed decisions about the sector when confronted with data that are either unreliable or nonexistent.

The example of one high-level statistic on illegal sports gambling in the United States is an illustrative example. While arguing in a *New York Times* op-ed for the legalization of sports betting, National Basketball Association (NBA) Commissioner Adam Silver cited one estimate that placed the size of illegal sports gambling at 400 billion dollars a year. Journalist Jordan Weissmann, reporting for the online magazine *Slate.com*, pieced together the origins of Silver's 400 billion dollar figure (Weissmann 2014). Weissmann writes that the number came from a 1999 report from the National Gambling Impact Study Commission that estimated the size of illegal gambling in the United States to be between 80 billion and 380 billion dollars. That report in turn cites a vague estimate from a 1999 Associated Press article in the *Las Vegas Review-Journal* that covered one of the commission's hearings in Las Vegas. The estimate was specifically framed by commission member John Wilhelm as a "guesstimate." The 380 billion dollar figure, since inflated to 400 billion dollars by Silver, therefore was published in the *New York Times.* It entered the public discourse with almost no substantive backing.

Disagreements with respect to the scope of the sports economy ultimately create further disagreement with respect to how one should analyze the sector and its subsequent economic impact. No sports policy decision illustrates this discord better than the decision to host a mega-event like the FIFA World Cup or the Summer Olympics. Consider the story of Boston's bid for the 2024 Summer Olympics. Following the encouragement of Boston 2024, a group of local civic and business leaders, the United States Olympic Committee chose Boston as the United States' bid for the event in January 2015. Boston 2024 promised that the investments and tourists the event attracts would bring economic benefits to the city. However, in July 2015, Boston mayor Marty Walsh announced that his municipal government was withdrawing its support for the city's bid to host the 2024 Summer Olympics. Citing concerns over the

cost of the bid, Walsh refused to guarantee the International Olympic Committee (IOC) that the city would cover any cost overruns. He argued that "no benefit is so great that it is worth handing over the financial future of our city" (Seelye 2015). Walsh's announcement ended the bid and was the culmination of a turbulent spring for Boston 2024. With less than half of Boston residents approving of the bid, the group was overwhelmed by management and public relations problems.

The cases of the exaggerated illegal gambling sector and the failed Boston Olympic bid illustrate that we need far more clarity in the way that we approach the sports economy. Our understanding of the sports economy is often more fueled by passion than fact. Hoping to gain international prominence through the attention of the sporting world, policymakers make decisions that aren't based on the most sound data or economic analysis. Alternatively, fearing the ousting of a popular sports club, they may choose a policy even when the economic costs and benefits aren't entirely clear. The following report seeks to build an approach to the sports economy that is driven more by evidence and facts rather than solely by passion for competition. It is divided into two parts. Consisting of the Chapter 1. , Chapter 2. , andChapter 3. , the first part strives to understand the economic dimensions of the sports economy. The second part, consisting of Chapter 4. and Chapter 5. , aims to translate these economic dimensions into policy implications for national, regional, and local governments.

Part 1. Understanding the Economic Dimensions of Sports

Chapter 1. presents an overview of previous approaches to understanding the sports economy and proposes an alternative perspective than the one that currently dominates. Previous accounts of the sports economy can be classified as either market research accounts by consulting agencies, academic accounts written by sports economy scholars, or statistical accounts originating from national statistical agencies. While these accounts vary widely in terms of their scope and their ultimate estimates, they are primarily concerned with the overall magnitude of the sector. However, these accounts are structurally limited by two challenges. First, measurement challenges bias these accounts because they favor revenue data over value added data. Second, definitional challenges bias the accounts because they utilize very different definitions of the sector, many of which aren't directly relevant for the sports economy.

The 2012 report by the European Union Working Group on Sports and Economics is the best attempt thus far to account for the sports economy, but even it has limitations. The EU Working Group's report is helpful because it establishes a thorough methodology known as the "Vilnius Definition of Sport" to act as a guide for all European countries as they assess their sports economy. Such an approach would make future accounts in these countries more comparable. However, even this methodology can be biased because it vastly overestimates the size of the sports economy by including a significant amount of unrelated economic activity.

Improving upon the status quo is difficult, but we believe that one way to do so is to change the perspective through which we view the sports economy. Instead of asking "How big?" we believe future assessments should ask "How different?" In other words, we believe that future accounts should try to understand diversity within the sector rather than just its overall magnitude. In practice, recognizing diversity in the sector can be done at two levels. First, future accounts should attempt to disentangle activities that are directly relevant for the production of sports (known as *core sports*) from activities that are more peripheral to sports (known as the *sports periphery*). Second, future accounts should acknowledge that, even within core sports activities, there is a range of different kinds of economic activity.

These two levels are substantiated by industry space analyses and sector specific data. Industry space analysis demonstrates that core sports and sports periphery activities require different knowledge because these types of activities aren't well-connected in the industry space network. We therefore suggest that many previous accounts, such as the market research and consulting reports we describe, group an incredibly diverse array of sports-related economic activities together. For example, sporting goods manufacturing requires very different knowledge than professional sports. We suggest that it should be considered part of the sports periphery while professional sports should be considered part of the core sports sector.

Moreover, we argue that understanding the diversity within core sports themselves is also essential. For instance, initial analyses of sector-specific data demonstrate that professional sports and fitness facilities, two core sports activities that cluster together in the industry space, can vary widely in size and ubiquity. Recognizing the distinction between core sports and the sports periphery —as well as the sheer diversity within core sports itself— is important because the distinction has implications for how to analyze the sports economy. With the highly disaggregated data present in Mexico, we are able explore some implications in Chapter 2. .

Chapter 2. builds upon the reasoning of the previous chapter to more closely explore the sports economy of one specific location: Mexico. We choose to explore economic dimensions of sports in Mexico rather than in European countries like the United Kingdom, Spain, or Germany because of the quality of data we found in the country. The objective of the chapter is to conduct a series of analyses that can serve as an evidence-based framework through which policymakers can approach the sector in the future. While these analyses are hopefully useful for sports policymakers in Mexico, we hope that they are also informative for a broader community hoping to approach the sports economy in a more structured way.

We initially offer a description of the Mexican data we use with the intention of explaining why these data are better suited for analyses than some of the data described in Chapter 1. . Three characteristics make these data more suited for analysis. First, there is significant sectorial disaggregation. Disaggregation between sectors allows us to more specifically identify different economic activities within the sports sector and the broader

economy. Besides enabling us to separate core sports activities from the sports periphery, disaggregation also allows us to distinguish between core sports activities themselves. Second, there is significant spatial disaggregation in the Mexican data. Spatial disaggregation refers to the geographic level at which we have data. Many of the Mexican datasets are available at the municipal level, meaning trends across space can be more easily identified. Third, there is complementarity across the relevant databases. Complementarity means the relevant databases have corresponding sector and geography identifiers so they can be combined to build a more complete perspective on the sports economy.

With these data, we start by characterizing the skills and knowledge that the Mexican sports sector employs. We conduct industry space analyses similar to those performed in the previous chapter for the Dutch economy. Our industry space networks in Mexico confirm many of the findings suggested by the Dutch spaces. More specifically, the Mexican analyses show that core sports activities, like professional sports or fitness and recreational sports, are located in one of four sector clusters. Sports periphery activities, however, are scattered across the network. However, at the same time, there are some differences within core sports activities themselves. Professional sports, for instance, are relatively isolated in the network, but fitness and recreation activities are far more embedded in clusters related to professional services. These Mexican industry spaces further emphasize one of the primary messages from the previous chapter: the importance of both separating core sports from the sports periphery and recognizing the diversity within core sports itself.

After validating these distinctions in the Mexican context, we offer a range of descriptives of the Mexican core sports activities related to value added and employment data. We observe important differences within the core sports sector. For instance, Mexican fitness and recreational sports have far larger overall value added and employment levels than professional sports. However, the observation is reversed if one looks at these variables on a per establishment basis. Since there are far more fitness and recreational sports establishments in the country, each professional sports establishment contributes far greater value added and employment. These depictions of the differences even amongst core sports activities continues to emphasize the importance asking the "How different?" question first mentioned in Chapter 1.
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Next, we turn our focus to the type of employment that the sports sector provides. We consider a range of employment-related variables such as informality levels, relative wages, occupational composition, and labor flows. One of the most interesting insights is that average wages in both core sports and the sports periphery are higher than the Mexican economy. Another insight relates to the movement of employees to and from sports-related activities. We observe that many core sports activities, particularly fitness and recreational activities, share labor flows with either sectors related to nature and the environment or sectors related to input products. Related nature or

environment sectors for tourist marinas include landscaping services, while related input sectors for private recreational services includes photography and videotaping. Regardless of the specific variable considered, these analyses continue to validate the "How different?" perspective.

Finally, we explore the geographic distribution and intensity of the Mexican sports economy. We borrow the revealed comparative advantage indicator from the international economic literature to construct measures of the intensity of sports-related activities at the level of metropolitan areas. This is a methodology that will be further explored in Chapter 3. with European data. Our indicators illustrate that few metropolitan areas have a high intensity in professional sports, but many more are intensive in fitness and recreational sports. Moreover, the same areas appear to be intensive in both. We then conduct a series of econometric analyses at the municipal level to disentangle what variables are associated with metropolitan areas that have more intensive sports sectors. Our models indicate municipalities with intensive sports sectors are more likely to have high inequality and more workers. These municipalities also have workers that are more likely to be educated but also learn lower average wages. Overall, these analyses in Mexico add further weight both to the "How different?" perspective and to the importance of collecting more disaggregated and comparable data on the sports economy.

While Chapter 1. discusses the absence of quality data on the sports economy and Chapter 2. demonstrates the analyses one can do when detailed data are available, Chapter 3. illustrates one approach to understanding the sports economy based on currently available (if imperfect) data. In Chapter 3. , we use a large array of employment data on sports-related economic activities across Europe to calculate indicators of the intensity of employment in sports. We use employment data because of its quality and because previous work has characterized the sports economy as a labor-intensive industry. These indicators build upon previous analyses conducted at the national level by the EU Working Group on Sports and Economics and Eurostat (SportsEconAustria et al. 2012). However, while these previous studies focused only at the national level, we also calculate these indicators at both the national and subnational levels. We conduct this exercise to demonstrate what is possible when data is sufficiently comparable and consistent.

The employment data we use comes from three types of sources: business registries or surveys, labor force surveys, and censuses. Each of these datasets has their own strengths and weaknesses that are dependent on their scope and the method of data collection. However, what is most important is that each of these datasets is structured under the NACE classification and includes a similar code for "sporting activities". We use these data to create one of two kinds of measures, both of which we adopt from the literature on international economics. At the national level, we construct the revealed comparative advantage of a given country's employment in sporting activities. As mentioned above, this indicator enables one to compare the intensity of European employment with respect to sports. At the subnational level, we construct a similar measure, known as the population-adjusted revealed

comparative advantage. This measure allows one to compare the relative intensity of sports within one country. Both indicators provide a measure of whether or not a given geographic area has more than its "fair share" of sports employment by comparing employment in that area to sports employment in either the country or Europe as a whole.

While these measures confirm some prior assumptions about the national or subnational intensity of sports, they also uncover many interesting results. For instance, one relatively unexpected insight is that at the subnational level, we observe that many of the areas with the largest indicators are towns or cities that are relatively small in population. They are regions with popular beaches or well-known mountains that attract large numbers of fitness-related activities. Tarentaise and Maurienne, two French ski areas, are examples. This is surprising since one would assume that more populous, larger cities would be more likely to have professional sports teams. At the national level, we observe that there are a number of countries where our measures indicate sports employment to be particularly intense. With the exception of Great Britain and Spain, which have the most prominent football leagues in Europe, the other sport's intense countries aren't particularly well known for their sporting endeavors.

The measures that we construct have important implications for sports policymakers. For one, they consider subnational sports employment, thereby allowing one to uncover the distribution of sports across regions within one country. Moreover, the measures are illustrative of the perspective asking "How different?" that is discussed in Chapter 1. . With these measures, investors and other external observers can quickly understand which regions already possess the labor force or associated facilities to their sports-related initiative. Above all, however, we construct these measures as one example of the type of comparison and consolidation that can be done with the right data. We hope it serve as a motivation for policymakers to improve their data collection and standardization efforts.

Part 2. Understanding the Policy Implications of the Sports Economy

In Chapter 4. , we begin to translate the economic dimensions of the sports economy into framework for policymakers in national, regional, and local governments. The chapter is written for policymakers trying to use sports and sports-related activities to advance social objectives and economic development. Building upon Houlihan and White (2002), we are careful to distinguish between *development through sport* (where the emphasis is using sport to achieve economic and social objectives) and *development of sport* (where sport is valued for its own sake). Here, we don't focus on governance arrangements that impact the development of sport, but we instead choose to focus on arrangements affecting development through sport.

To start, we define "governance" as government bodies using authority derived from or allocated by citizens to produce, facilitate, and influence

outcomes of interest for those citizens. In most instances, these are outcomes that require collective engagement. We are then careful to distinguish governance ends from governance means. Governance means are the mechanisms through which governments use their delegate authority. Governments, for instance, can allocate resources, regulate behavior, or coordinate private agents through the laws and other rules it passes. Governance ends are the objectives that citizens authorize their governments to pursue. We separate these two terms because different governments can use different means to achieve the same ends. Therefore, when analyzing governance, the ability to effectively achieve ends must lead one to think about the forms or means governments should take. In other words, we believe it is important to consider what governments *should do* before we think about what governments *should look like*. The ends-means approach to governance leads us to ask three questions related to the governance of *development through sport*.

The first question we ask is "What are the ends that motivate governments when pursuing development through sport?" Based on our detailed examination of sports policies at the national and subnational level, we observe that government consistently perceive sports as a domain through which they can achieve a range of ends or policy objectives. These ends are rarely static as they frequently evolve over time and vary between jurisdictions, but what is clear is that governments rarely engage in the policy area simply for sport's sake. Instead, we conclude that governments consistently engage in sports to achieve at least one of three ends: social inclusion, economic growth, and health. Inclusion objectives relate to the belief that sports can foster citizen participation and engagement amongst minority groups, disaffected youths, and other communities. Growth objectives reflect the focus amongst governments on using sports to stimulate economic activity through attracting professional sports clubs or hosting mega-events like the Olympics or the World Cup. Health objectives center on leveraging sport to promote healthy societies and decrease the incidence of preventable disease like obesity.

The second question we ask is "What are the means that governments use when pursuing these ends?" Our case studies identified nine common means that national and subnational governments use to attain the above ends. These means are the provision of the following: sporting facilities; transportation infrastructure; financial incentives and subsidies; organized sports opportunities; targeted group support (programs for schools, elderly communities, or other groups); special events (both repeat and one-off events); support to related industries (like hospitality or tourism); support for sports training; and volunteerism. Every governments might not employ all of these means all of the time, but together they form a toolbox through which national and subnational governments shape sports policy. Of that toolbox, the primary governance "mean" is the provision of sporting facilities, while the second most common was the targeting of specific groups. We also observed that different means were generally associated with different ends. National governments, for instance, primarily use targeted group support, training

support, organized sports, and the provision of facilities to achieve health or inclusion ends. However, we are careful to caution observers against assuming that these means are particularly effective at achieving the desired ends given the dearth of supporting evidence.

Combining the previous two questions, the third and final question we consider is "Can we develop an evidence-based view of a development through sport policy regime in order to assess its governance quality?" We use data from *Sport England* on local jurisdictions in England to construct governance "dashboards" as a framework for reflecting on the ends and means of a development through sports agenda. The dashboard approach can display a range of variables that measure either the ends and/or means in questions. For instance, a dashboard focusing on health ends would consider data on adult obesity, youth obesity, active individuals, inactive individuals, and the health costs of inactivity. Similarly, a dashboard focusing on means would display data on the nine different policy tools available for the government in question. Data on the provision of sporting facilities, for example, could include the population to facilities ratio, the privately owned facilities, or the percent of community owned facilities. Both raw and relative data can be displayed for the jurisdictions in questions. Ultimately, these dashboards provide sports policymakers with a framework for constructing a development through sports policy agenda.

In Chapter 5. , we explore the effectiveness and economic consequences of one of the most prominent "means" of sports governance: special events. More specifically, we focus on the one-off mega-events like the FIFA World Cup and the Summer Olympics. Since bidding or hosting of these events is one of the most popular sports policy tools, there already exists a rich academic literature on their economic consequences. Ex-ante assessments conducted by bidding organizations and the consulting groups they hire often paint favorable pictures of the economic consequences of mega-events, but much of the academic literature contains a different narrative. We review that narrative as succinctly as possible with the objective of consolidating findings and clearly explaining them for sports policymakers and other stakeholders. We primarily focus on two mechanisms through which mega-events could potentially impact the sports economy: increased economic activity and increased tourist arrivals.

The first mechanism, increased economic activity, is grounded in the premise that hosting an event like the FIFA World Cup or the Summer Olympics will attract new investment and spending. Hosting the games, the thinking goes, will unlock previously inaccessible funding from supranational organizations, private stakeholders, and/or public entities that will new investments. Moreover, bidding cities or countries also argue that these new investments and expenditures will ripple throughout the economy through a multiplicative effect. Finally, ex-ante analyses generally assume that the event will increase the flow of revenues to host governments. Increased tax collection could come from either event-specific revenue related to ticketing, merchandising, and

broadcasting or from event-related expenditures made by tourists on accommodations, food, and transport.

According to the academic literature, most of these claims about increased economic activity are suspect. To start, any new funding from supranational or private organizations is routinely dwarfed by complementary public investments financed through additional debt commitments. The result is often that hosting governments are left with large debt levels that imply future tax hikes or budget cuts. Additionally, the multiplicative effects are routinely exaggerated since they are based on assumptions about inter-industry relationships that don't hold during mega-events. Likewise, history has shown that hosts aren't able to collect a significant portion of related revenues even though they are most burdened with required investments. Even if hosts could collect all revenues, it is unclear if these could cover all of the expenses that are required. In practice, most of the ex-ante projects regarding increased economic activity are exaggerated.

The second mechanism, increased tourist arrivals, assumes that tourists who otherwise wouldn't have visited the region decide to do so in order to attend the event. The reasoning is that these foreign tourists then spend a significant amount of money on accommodations, food, merchandise, and memorabilia. Furthermore, ex-ante analyses expect that foreign tourists return to their home countries and recommend the host area to others, thus increasing the reputation of the host as a tourist destination. With an improved international reputation, the host area would hope to see a permanent increase in tourism. Finally, many ex-ante evaluations assume that the mega-event will lead to increases in tourism capacity such as improvements to airports, transportation systems, and accommodations.

As is true with the first mechanism, many of the claims surrounding increased tourist arrivals don't appear in reality. There is some evidence for statistically significant increases in tourist arrivals to certain mega-events, but these arrivals are generally far fewer than what is predicted. These increases are also dependent on specific conditions associated to the event such as the type, timing, and participants of the event. It seems that the overestimations result from ex-ante studies underestimating or ignoring how the mega-event will displace tourists. For instance, some tourists who were planning on traveling to the host area may decide to avoid it during the event because they fear the crowds it will attract. The literature also emphasizes that any statistically significant is short-lived as it is primarily concentrated in the four years before or after the event. No tourism effect seems to remain in the long run.

References

Gabriel, Trip. 2015. "Scott Walker Approves Public Funding of Basketball Arena." *New York Times*, August 12. Accessed March 24, 2016. http://www.nytimes.com/2015/08/13/us/politics/scott-walker-approves-public-funding-of-basketball-arena.html?_r=1.

Houlihan, B. and White, A., 2002. *The politics of sports development: development of sport or development through sport?*. Psychology Press.

Johnson, Jenna. 2015. "Scott Walker approves spending $250 million on Milwaukee Bucks arena." *Washington Post*, August 12. Accessed March 24, 2016. https://www.washingtonpost.com/politics/scott-walker-approves-spending-250-million-on-milwaukee-bucks-arena/2015/08/12/5cd72d54-4055-11e5-9561-4b3dc93e3b9a_story.html

London Olympic Delivery Authority. 2013. *A summer to remember. Olympic Delivery Authority Annal Report and Accounts 2012-13.* (London: The Stationary Office, July 16), accessed March 29, 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/223522/ODA_Annual_Report___Accounts_2012-2013.pdf.

Long, Judith G. 2005. "Full Count: The Real Cost of Public Funding for Major League Sports Facilities." *Journal of Sports Economics*, 6(2): 119-143.

Seelye, Katherine Q. 2015. "Boston's Bid for Summer Olympics Is Terminated." *New York Times*, July 27. Accessed March 29, 2016. http://www.nytimes.com/2015/07/28/sports/olympics/boston-2024-summer-olympics-bid-terminated.html?_r=1.

SportsEconAustria et al. 2012. "Study on the Contribution of Sport to Economic Growth and Employment in the EU." Accessed March 28, 2016. http://ec.europa.eu/sport/library/studies/study-contribution-spors-economic-growth-final-rpt.pdf

Weissmann, Jordan. 2014. "Big Bucks or Bogus Betting Baloney?" *Slate*, November 21. Accessed March 24, 2016. http://www.slate.com/articles/business/moneybox/2014/11/adam_silver_says_there_s_400_billion_per_year_of_illegal_sports_betting.html

Part I. Understanding the Economic Dimension of Sports

The objective of Part 1 is to improve our understanding of the economic dimensions of sports by diagnosing the state of data on the sector and then outlining a range of relevant analyses that one can conduct with that data. Chapter 1 describes limitations in the way that many observers of the sports economy currently account for the sector and calls for a new perspective for approaching sports-related economic activity until data quality improves. Chapter 2 utilizes data on the Mexican sports economy to show that new perspective and demonstrate some of the analyses that we can perform when the data are of sufficient quality. Chapter 3 shifts the focus to the European continent to illustrate one of the analyses that observers of the sports economy can perform based on the current state of data in the sector.

Together, we hope these three chapters help change the narrative surrounding the sports economy. Currently, we believe that too many sports policy decisions do not consider the full breadth of available data or fail to consider a more appropriate way to collect data. The first three chapters of this report hope to change that narrative by suggesting that we can improve our understanding of the sports economy by first improving data quality and then more fully utilizing that data.

CHAPTER 1. UNDERSTANDING THE SPORTS ECONOMY

Introduction

Data on the sports economy is often difficult to interpret, far from transparent, or simply unavailable. Data fraught with weaknesses causes observers of the sports economy to account for the sector differently, rendering their analyses difficult to compare or causing them to simply disagree. Such disagreement means that claims regarding the economic spillovers of the industry can be easily manipulated or exaggerated. Thoroughly accounting for the industry is therefore an important initial step in assessing the economic importance of sports-related activities. For instance, what do policymakers mean when they discuss sports-related economic activities? What activities are considered part of the "sports economy?" What are the difficulties associated with accounting for these activities? Answering these basic questions allows governments to improve their policies.

The chapter below assesses existing attempts to understand the sports economy and proposes a more nuanced way to consider the industry. Section 1 provides a brief overview of existing accounts of the sports economy. We first differentiate between three types of assessments: market research accounts conducted by consulting groups, academic accounts written by scholars, and structural accounts initiated primarily by national statistical agencies. We then discuss the European Union's (EU) recent work to better account for and understand the sports economy. Section 2 describes the challenges constraining existing accounts of the sports economy. We describe two major constraints - measurement challenges and definition challenges - and highlight how the EU's work has attempted to address them. We conclude that, although the Vilnius Definition improves upon previous accounts, it still features areas for improvement.

Section 3 therefore proposes a paradigm shift with respect to how we understand the sports economy. Instead of primarily inquiring about the size of the sports economy, the approach recognizes the diversity of sports-related economic activities and of relevant dimensions of analysis. It therefore warns against attempts at aggregation before there are better data and more widely agreed upon definitions of the sports economy. It asks the following questions: How different are sports-related sectors? Are fitness facilities, for instance, comparable to professional sports clubs in terms of their production scheme and type of employment? Should they be understood together or treated separately? We briefly explore difference in sports-related industry classifications using data from the Netherlands, Mexico, and the United States. Finally, in a short conclusion, we discuss how these differences could be more fully explored in the future, especially if improvements are made with respect to data disaggregation and standardization.

Section 1. Market Research, Academic, and Structural Accounts of the Sports Economy

There have been numerous previous attempts to account for the sports economy, most of which belong to one of three broad categories. First, market research accounts generally take the form of market research or consulting reports on the sports economy. Often published irregularly, these one-time reports rely on estimations or projections based on aggregated firm-level data. Second, academic accounts are also irregularly published descriptions of the sector with many similar characteristics to market research assessments. The main difference is that sports economists write these accounts rather than consulting groups. Third, structural accounts of the sector are accounts embedded within national statistical systems. Statistical agencies in most countries collect this sort of information on an annual basis. They categorize every business in their economy under a series of industry codes, identifying some as directly sports-related.

The market research, academic, and structural assessments we consider below aren't meant to be an exhaustive catalog of every account of the sports economy. Instead, the accounts are simply meant to illustrate the kinds of approaches that have been taken to understand sports-related economic activities.

1.1. Existing market research accounts

Market research accounts of the sports sector provide an irregular depiction of sports-related economic activities. These accounts are the result of a specific methodology following their author's own logic rather than more standardized rules. They represent a range of approaches to the sector and vary widely in terms of scope. Some market research accounts focus only on a particular country, while others attempt to cover the entire globe. Some market research accounts limit themselves to a particular aspect of the sports economy, but others purport to be more comprehensive.

The rationale for these accounts also varies. The reports are usually produced because information isn't publicly available at a scale suitable for policymaking. Data might not be granular enough for governments to use, so some reports offer depictions of the economic activity related to a specific geographic area or a specific athletic discipline. Other observers of the sports economy more interested in broader trends sometimes present cross-country aggregations. In this way, market research accounts can offer a global characterization of the sports economy that isn't captured by the national statistical systems of individual countries. In the discussion that follows, we'll consider market research accounts prepared by consulting firms like AT Kearney, PricewaterhouseCoopers, and Deloitte.

The *Winning in the Business of Sports* report published in 2014 by the consulting firm AT Kearney is one of the most widely cited market research accounts. The report examines the market for "sports events" around the globe. It defines the market as revenue derived from tickets, media rights, and

sponsorship deals associated with spectator sports. AT Kearney analyzes these revenues in terms of four-year cycles that each includes a Summer Olympics, the Winter Olympics, and the FIFA World Cup.

According to the report, sports market revenues grew from 58.4 billion dollars in 2009 to 76.1 billion in 2013 (Collignon and Sultan 2014). They reached their peak at 78.2 billion dollars in 2012, the year of the Summer Olympics in London. AT Kearney also provides brief estimates of the size of these other sports-related economic activities. They place the market for sporting goods and licensed products at USD 310 billion globally and the market for fitness facilities at USD 105 billion. In total, the report claims that when other sports-related activities are included, such as sporting goods, sporting equipment, and fitness spending, the total global sports economy accounts for about USD 700 billion or about 1% of global GDP (Collignon and Sultan 2014).

Like AT Kearney, the consulting firm PricewaterhouseCoopers (PwC) also recently produced a report on the sports economy. Also like AT Kearney, PwC primarily focuses on spectator sports. PwC defines the "sports market" as consisting of the following components: team, league, or event sponsorships; gate revenues for live sporting events; media rights fees paid to broadcast or distribute sports; merchandising and the sale of products licensed to sports teams or players. They report that global sports market revenues totaled 121.4 billion dollars in 2010 (PricewaterhouseCoopers 2011).

PwC's analysis divides these revenues by region. They indicate that North America has the largest sports market with 41% of total revenues, but a region composed of Europe, the Middle East, and Africa isn't far behind with 35% of revenues. Moreover, the report projects revenues to follow an annual growth rate of 3.7% until 2015 when it estimates that they will reach 145.3 billion dollars. PwC's more recent report focuses on the North American sports market, placing the continent's sports economy at 60.48 billion dollars in 2014 (PricewaterhouseCoopers 2015). It predicts that market will grow to 73.52 billion by 2019.

In addition to broad market research accounts of the sports economy, some consulting firms also produce accounts that are more specific to one component of the sports economy. Deloitte, for instance, produces annual reports on European football. Released in 2015, their report titled *Commercial Breaks: Football Money League* compares the top twenty wealthiest football clubs in Europe according to their revenues. Drawing upon audited financial statements obtained directly from each club, the report documents the dramatic increase of revenues amongst Europe's top clubs. Real Madrid, the richest club in the report, brought in 550 million pounds (854.26 million dollars) in 2013/2014 (Bosshardt et al. 2015).

Deloitte also produces the *Annual Review of Football Finance*, an even more detailed report describing a wider range of clubs. The review has a particular focus on the English Premier League, likely due to both popularity of the league and data availability. It reports that, in the 2013/2014 season, Premier League revenues increased 29% to 3.9 billion euros or 4.74 billion dollars

(Jones, Rawnsley, and Switzer 2015). These revenues dwarfed those of the next largest leagues in Germany (2.3 billion euros or 2.80 billion dollars) and Spain (1.9 billion euros or 2.3 billion dollars).

From the brief review above, it is easy to see the inconsistencies between different market research accounts. PwC's estimate of the global sports market in 2010 is almost 160% of AT Kearney's estimate in 2013. In fact, PwC's 2014 estimate of just the North American sports market, 60.48 million dollars, is more comparable to AT Kearney's 2013 estimate of the global market.

The discrepancies are even more apparent if one compares Deloitte's figures on football revenues to the AT Kearney and PwC numbers. Deloitte's report suggests that the revenues of the top twenty European football clubs total more than 9.5 billion dollars. These revenues, which are derived from just a handful of clubs in one sport, account for approximately 12.5% of AT Kearney's 2013 entire estimate for spectator sports.

It is important to note, of course, that these consulting groups employed different methodologies and definitions of the sports economy. While each of the accounts likely used proprietary firm-level revenue data, part of the difficulty with assessing the industry is that these methods aren't transparent or easily accessible. Since firm-level data isn't available for every sports club or business, each of the accounts relies on significant projections and estimations, the methodology of which isn't always clear.

1.2. Existing academic accounts

In addition to accounts published by consulting groups, sports economists have also constructed their own accounts. These academic accounts are far more open about their methodology and assumptions. For instance, many of these academic accounts adopt an expenditure-based approach due to the limitations of sports-related data in national accounts.

In their estimation of the United States' sports economy, Milano and Chelladurai (2011) use an expenditure-based approach that seeks to account for all of the purchases by final users of sports-related goods and services. Following a methodology typically used to construct national gross domestic product, they divide their estimate into sports consumption, sports investments, sports-related government expenditures, and sports net exports. Each component is estimated using a variety of different sources, ranging from the Bureau of Labor Statistics' Consumer Expenditure Survey for sports consumption to trade data from the U.S. International Trade Commission for sports net exports. Milano and Chelladurai provide three estimates of the size of the United States sports economy: a conservative estimate of USD 168.469 billion, a moderate one of USD 189.338 billion, and a liberal one of USD 207.503 billion. These estimates are roughly equivalent to 1.29%, 1.44%, and 1.58% of United States GDP in 2005.

Humphreys and Ruseki (2008) follow a similar expenditure-based approach in their estimations of the United States sports economy in 2005. Like Milano and Chelladurai, they avoid national accounts data and instead use

information from a variety of sources. Their definition of the sports economy has three components: "activities involving participation in sport, activities involving attendance at spectator sporting events; activities involving following spectator sporting events through some media" (Humphreys and Ruseki 2008, 5). Like Milano and Chelladurai, they leverage several different data sources, eventually constructing a supply side and a demand side estimate of the industry in the United States in 2005. Their supply side estimate is USD 73 billion or .55% of GDP in 2005. Depending on the assumptions used, their demand side estimate is between USD 44 billion and USD 60 billion (.33% and .46% of GDP).

According to Humphreys and Ruseki, the difference between the supply and demand side estimates is primarily a result of "the USD 21 billion difference between revenues earned by footwear manufacturers and consumer spending on athletic footwear" (Humphreys and Ruseki 2008, 33). They contend that that this difference most likely reflects exports of athletic footwear.

Even though they are supposedly estimating the United States sports economy in the same year, Humphreys and Ruseki's estimates are far smaller than those of Milano and Chelladurai because the scope of their analysis is more limited. Depending on which of the two definitions and methodologies are used, the difference is between 124.47 billion dollars and 134.53 billion dollars. The disparity, which is between 65% and 73% of the estimates made by Milano and Chelladurai, occurs primarily because Humphreys and Ruseki limited their expenditure-based approach to sports-related expenditures made by households. Milano and Chelladurai took a wider approach and included data for sports-related consumption and investment by firms and the government. Including these additional sources greatly increased their overall account.

Unlike market research accounts, there are only a handful of academic accounts of the sports economy, most of which are limited to the United States. They are more transparent about the data they employ and the methodologies they use, but the two academic accounts described here aren't dramatically different from the market research accounts discussed above. Both market research and academic accounts stitch together a variety of sources with the objective of painting a broad picture of the sports economy. Like market research accounts, the resulting assessments can vary significantly in magnitude depending on the precise methodology and the definitions used.

1.3. Existing structural accounts

In the United States and Europe, national statistical agencies compile structural accounts of the sports economy through one of two classifications. The North American Industry Classification System (NAICS) is used in the United States, while the Statistical Classification of Economic Activities in the European Community (NACE) is used in Europe. We focus on these two regions of the world —and their corresponding classification systems— because they have by far the largest sports economies. Perhaps even more importantly, these regions have more developed systems and procedures for

gathering data on the structure of their economies and making it publicly available.

These systems define and measure the sports economy differently, but both systems are designed as hierarchical frameworks that group establishments into industries for accounting based on the similarities of their production processes. Establishments are assigned a five-digit code in Europe or a six-digit code in the United States. Industries are nested within progressively broader industry definitions, each of which bears a shorter and hence less specific industry code. For instance, in the United States, the two-digit code "11" corresponds to "agriculture, forestry, fishing, and hunting." Within that code, the six-digit code "111110" groups establishments related to "soybean farming".

Countries build industrial classifications in this manner to inform a range of crucially important statistical datasets and publications such as economic censuses, labor surveys, and social security data. These classifications systems are one of the primary mechanisms that policymakers use to understand changes in their economies.

The principal sports sectors in the NAICS and NACE systems can be seen in Figure 1.1 and Figure 1.2. Sports under the 2012 NAICS classification system first appear under the three digit code "711" which corresponds to establishments related to performing arts, spectator sports, and related industries. Within this high-level classification, there are several more detailed codes that are clearly sports-related. At the six-digit level, there are three exclusively sports-related codes: sports teams and clubs (711211), race tracks (711212), and other spectator sports (711219).

The 2008 NACE classification system (known as NACE revision 2) used in the EU collects data in a similar fashion. Under the NACE structural account, sports are broadly defined under the three-digit code "931" corresponding to sports activities. Under this classification, there are four exclusively sports-related activities: the operation of sports facilities (9311), the activities of sports clubs (9312), fitness facilities (9313), and other sports activities (9319).

Figure 1.1. Principal sports sectors in the NAICS classification system (2012)

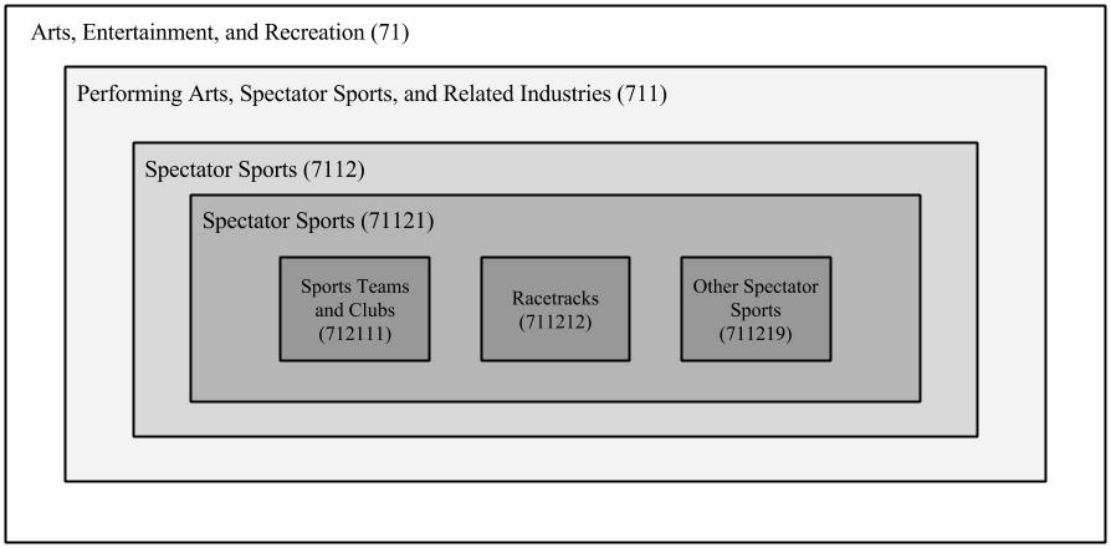
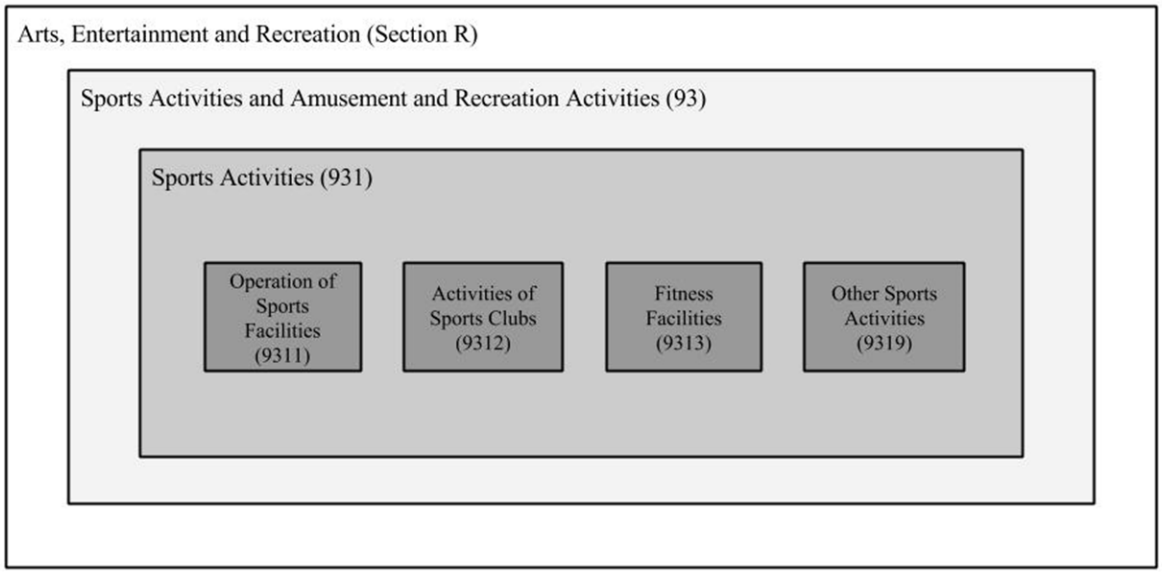


Figure 1.2. Principal sports sectors in the NACE rev 2 classification system (2008)



Aggregating data on these NACE codes across the twenty-seven European has an added layer of complexity than performing a similar task for data in the United States. Within the boundaries of the NACE codes, European countries collecting data have some flexibility to tailor the classification to their own economies. The Netherlands is an excellent example of country-specific adjustments. At the five-digit level of its 2008 Standaard Bedriffsindeling classification, there are codes ranging from swimming pools (93111) and playing fields (93113) to motor sports (93127) and sports supporters clubs (93194). Other EU countries don't have such detailed industry codes with respect to sports. That means that correspondence can only occur at a higher aggregation, meaning that much of the information in the data with respect to

specific activities is lost. Structuring country-specific classifications so they could more easily correspond would make European analyses more informative. However, few countries have such granular classifications and those that do organize them differently.

1.4. Lessons learned from the market research, academic, and structural accounts

Reviewing the market research, academic, and structural accounts above highlights their diversity. Accounts vary widely both in terms of their scope and ambition. Market research accounts like those by AT Kearney and PwC are global in scale, but primarily focus only on sports events and competitions. Academic accounts may be less ambitious in terms of geography, but they attempt to encompass a far broader range of sports-related economic activities. Structural accounts are a final extreme, providing highly disaggregated data both in terms of geography and economic activity. Data in these structural accounts, however, is often difficult to compare across space and time.

The result is a range of estimates of the sports economy, The AT Kearney and PwC reports, both of which cover only sports market revenues, provide estimates that differ by 43.2 billion dollars. Likewise, the two academic accounts above provide estimates that vary by an amount that's somewhere between 124 billion dollars and 134 billion dollars. Structural accounts based on data aggregated from individual countries would be much smaller than these figures given that they include only data within specific industry classifications. For instance, according to 2012 data, the value added for the three exclusively sports-related industry codes in the United totals more than 33.5 billion dollars.

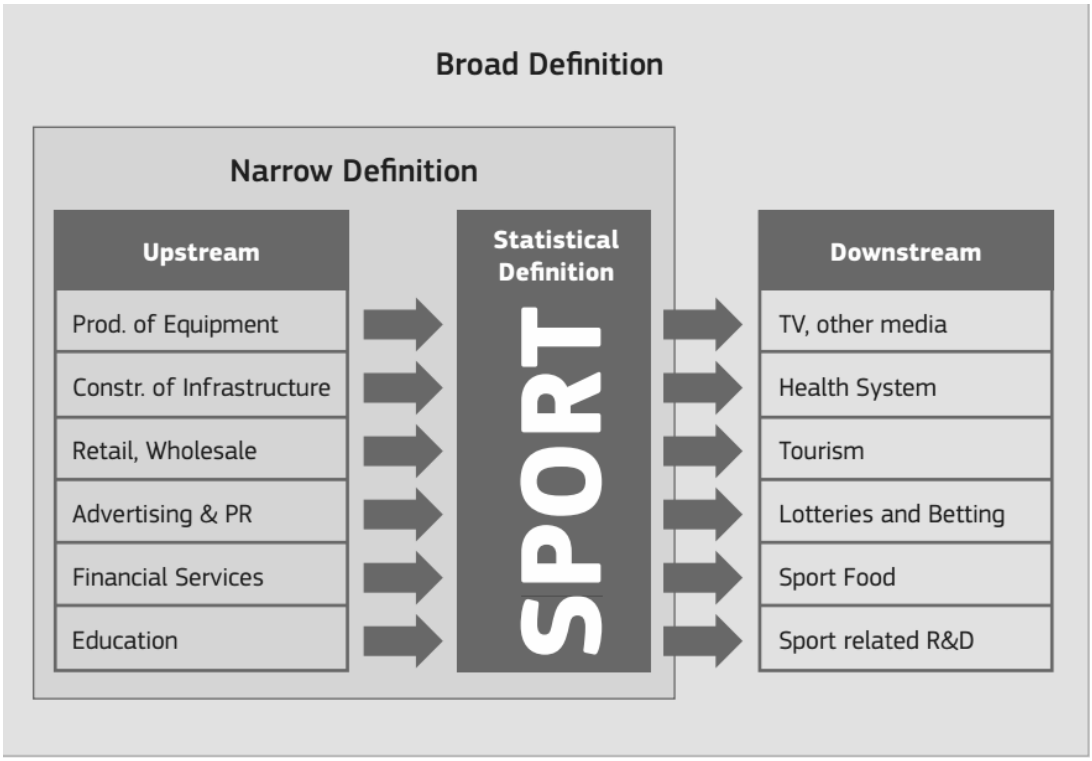
It is essential to note that all of these accounts consider different measures. Some focus on revenues, others on expenditures, and others still on value added. Moreover, each account uses a different definition of the sports economy that considers different activities to be sports-related. Some accounts may have overlapping or similar definitions, but few are very close. These considerations mean that comparison between accounts is difficult, if not impossible. The general lesson learned from these accounts is that observers of the sports economy have reached little consensus with respect to the best way to analyze and understand the sector. Analysts and practitioners alike often make grandiose statements about the size of the sports sector, but these statements are backed up by few rigorous assessments. Moreover, those accounts that do exist attempt to justify the sports economy's importance through an estimate of its size, but these accounts use widely different data and methodologies. The ultimate result is a muddled depiction of the sports economy.

1.5. The Vilnius Definition of Sport

Recent work within the EU has sought to clarify this muddled depiction. The EU's work is based on the realization, first articulated in the 2007 EU White

Paper on Sport, that "the quality and comparability of data need to be improved to allow for better strategic planning and policy-making" (European Commission 2007, 11). Following that call to action, the EU Working Group on Sports and Economics was formed. The challenge before the group of economists, statisticians, and sports economy experts was a daunting one: agree upon a common way of measuring and defining the sports economy in Europe, thereby increasing comparability and the utility of data on sports-related economic activities. While the NAICS and NACE classification systems are useful for understanding a large component of the sports economy, the working group wanted to understand the sports-related economic activity that exists outside of these classifications. Such activity is often mixed with activity that has little or nothing to do with sports.

Figure 1.3. Economic definitions of sports according to the Vilnius Definition



Source: European Commission 2013.

Consider the sector 5510 in in the NACE revision 2 classification. Officially labeled as "hotels and similar accommodations," the sector encompasses a range of hospitality activities for travelers. Only part of these activities - hotel rooms purchased by sports teams or sports tourists - is relevant for the sports economy, but it is impossible under either the current NACE codes to separate it from the rest. In an attempt to solve that problem the EU group developed the Vilnius Definition of Sport. The approach outlines three definitions of sport: "a statistical definition" comprised only of the NACE revision 1 or revision 2 sectors that are explicitly labeled as sports (as described above); "a narrow definition" consisting of all products and services which are necessary as inputs for producing sport as an output; and "a broad definition" consisting

of the previous two plus all products and services which have a direct or indirect relation to any sport activity (European Commission 2013). Figure 1.3 above captures the relationship between these three definitions.

The narrow and broad definitions are expansive; encompassing a range of industries that one wouldn't immediately consider directly relevant to sports. The retail sale of pharmaceutical goods, for instance, is in the narrow definition since athletes often use such medicine during training or competitions. Likewise, many types of hotel accommodations or restaurants are included in the broad definition based on the argument that sports teams and sports tourists purchase their goods and services. Parts of these and other industries were allocated to the narrow and broad definitions and considered parts of the sports economy.

Based on the Vilnius Definition, the EU working group published the "Study on the Contribution of Sport to Economic Growth and Employment in the EU" in 2012. The report focuses on the broad definition, reporting that the sports economy represents 173.86 billion euros in 2005 or 1.76% of total value added in the EU under that definition (SportsEconAustria et al. 2012). Likewise, the study found that the broad definition of sports accounts for 4.46 million European employees, representing 2.12% of total EU employment.

Perhaps most importantly, the EU working group's study outlined a methodology through which European countries could create standardized sports satellite accounts (SSAs). Extensions of the annual national economic accounts of a given country, SSAs are specifically aimed at depicting the size of the sports economy in a given country according to the same Vilnius definition framework standardized by the working group. While they aren't mandatory for EU countries to create, many countries publish them every year or every couple years. The United Kingdom, for instance, reported the value of its sports economy as 38.8 billion pounds (62.6 billion dollars) in 2012 according to the broad Vilnius Definition (Kokolakakis 2015). That accounts for 2.6% of British gross value added. Other accounts have so far been created by Austria, Cyprus, Germany, Netherlands, Poland, and Switzerland.

The Vilnius Definition represents a significant improvement from previous accounts of the sports economy. It is a rigorous effort to standardize and harmonize the way that policymakers, academics, and analysts interpret sports-related economic activity. If the Vilnius Definition is widely used in future accounts, policymakers will develop a better understanding of the sports economy in their jurisdiction. Better informed sports policy would likely result. The development of SSAs should therefore continue. Other areas of the world should also follow the EU's lead and craft a similar type of standardized understanding of the sports economy. However, while the Vilnius Definition is an important improvement, it is far from a panacea. Efforts to assess the sports economy are still ridden by a range of difficulties.

Section 2. Difficulties in Assessing the Sports Economy

Existing accounts of the sports economy, such as those described above, have some positive characteristics. In particular, the EU working group's Vilnius Definition and the resulting SSAs represent significant steps forward in attempting to describe a complex industry. However, significant room for improvement remains. We describe two main limitations that hinder attempts to understand the size of the sports economy: challenges with measurement and challenges with defining sports as an economic activity. Transparently acknowledging these issues is an essential step in improving our understanding of the sports economy. We then discuss the EU working group's efforts to address these challenges through the Vilnius Definition. The Vilnius Definition successfully addressed some of these issues, but other challenges remain.

2.1. Challenges with measurement

Measurement challenges occur when sub-optimal statistics are used to depict the size of the sports economy. Ideally, accounts of the sector would be based on the total value added or GDP generated by every type of sports-related activities. Unfortunately, not all countries track these data. Even when these data are collected, the values collected are highly aggregated and usually limited to either the narrowest definition of the industry or just part of it (like professional sports). Moreover, even when countries collect value added information at a rather disaggregated level, there are often differences in the industry classification used. These industry differences significantly limit consolidation and comparability.

In light of these limitations with respect to value added data, many accounts have relied on revenues as an alternative measure of sports-related activity. The practice is particularly prevalent amongst market research accounts, although some academic accounts do it as well. For one, revenues are useful because they are measured similarly across the globe, making them more comparable. Moreover, because they are usually available at a firm level, they are a flexible measure that easily allows for aggregation under different definitions of sports.

Revenues, however, have their own problems. First, revenues aren't value added and, as a result, they may overemphasize the production of a sector through double counting. Using revenue as a measure is problematic because it encompasses the entire value chain, making the sector seem bigger than it is. For example, revenues of firms in the manufacturing, wholesale, and retail sectors might be including much of the same information. The tendency to double count through revenues is exacerbated even further when considering sports revenues because many different portions of the sports economy share elements of the value chain.

Second, revenues aren't profits. Many accounts - and the media reports that highlight them - focus on revenues to reflect how professional sports are booming. Equating revenues with profits hides the high costs that many

professional teams face. Other than a handful of exceptional performers in the top sports leagues, the reality is that many professional clubs struggle to make ends meet. Buraimo, Simmons, and Szymanski (2006) note that, between 1999 and 2004, 22 of the 72 clubs in the English Football League (i.e. excluding the Football Association Premier League) were forced to restructure their finances in order to avoid bankruptcy. These financial difficulties aren't always limited to the smallest clubs. Lago, Simmons, and Szymanski (2006) describe how, in the Italian Serie A, even large teams such as AC Milan and Juventus have operating losses that occur year after year. More broadly, analyses by Andrews and Harrington suggest that clubs in 35 of Europe's 52 leagues face high or medium risk with respect to their financial sustainability (Andrews and Harrington 2016).

Finally, and perhaps most importantly, it isn't always mandatory for revenues to be made publicly available. Rules and regulations regarding the transparency of a given firm's financial reports differ across countries. In countries with limited publicly available data, many accounts of the size of the sports economy must make significant projections to cover the resulting gaps. These projections are based on the potentially flimsy assumption that the "veiled" parts of the sector behave in the same way as the "unveiled" parts. The assumption is particularly tenuous given that these "veiled" components of the sector may choose to keep their revenue data private exactly because they behave different than other firms. Firms have an incentive to do so if their financial reports would disclose uncomfortable statistics or inconvenient business relationships.

Furthermore, differences in revenue transparency across countries are also problematic because it limits comparability. The composition and relative size of the sports economy may significantly vary across countries for cultural, geographic, or economic reasons. These disparities aren't captured if some countries don't have publicly available revenue data. For example, revenue data for major sports-related firms in developed countries is generally publicly available, but similar data in developing countries is difficult to uncover. That is problematic because, if we are attempting to understand the size, composition and impact of sports for the purposes of economic development, the insights we gain from significantly developed economies might not be applicable worldwide. Overall, many of the limitations mentioned above indicate that using revenue as a proxy for the size of the sports sector likely results in an overestimation of the economic importance of the sector.

While they have their flaws, it is still important to recognize that both value added and revenue measures can provide insightful information. For sports industry accounts using revenue measures, it is important to be explicit as possible in delineating what figures are real and what are projections. Likewise, accounts leveraging revenues should improve their transparency with respect to the sources they use and the caveats that accompany them. Additionally, it would be useful to increase the transparency of financial reporting for firms in the industry. These efforts would help observers of the sports economy better understand the size of their ignorance. After all, it is

impossible to draw conclusions regarding the economic impact of sports if analysts can't agree on the appropriate way to measure its size.

2.2. Challenges concerning economic definitions of sports

At the moment, structural, academic, and market research accounts employ different and often problematic definitions of which activities should be considered part of the sports economy. To start, market research and academic accounts of the sports economy use "top-down definitions" decided upon by the consulting firm or research group performing the analysis. Sometimes top-down definitions follow the contours of NAICS or NACE classifications, but often they expand far beyond them. These definitions represent largely arbitrary choices as to whether or not a given economic activity should be classified in the sports economy. Some of these selections, like professional sports teams, make sense, but others, such as sporting goods manufacturers, are more obscure. Top-down definitions are therefore very subjective categorizations and can vary widely between accounts.

In addition, top-down definitions are more prone to double accounting, especially when compared to industry classifications like NAICS or NACE. Industry classifications benefit from the fact that every activity only fits into one code, but that isn't necessarily true for top-down definitions. If sporting goods manufacturing are included in an account of the sports industry, should they then also be included in an account of the manufacturing industry? If so, the same activity could fall under multiple different codes and the sum of such sectorial accounts would far exceed true economic activity in a given jurisdiction. The same critique can be made of top-down definitions that include industries such as hotels, restaurants, or financial services in the sports economy.

Finally, market research or academic accounts with top-down definitions tend to favor some aspects of the sports economy more than others. In particular, these definitions are detailed with respect to certain professional sports teams and leagues since these organizations have the most publicly available firm-level data. Beyond these organizations, they are vague and based on projections. For example, the consulting firm AT Kearney provides detailed information on the "sports events market," which they define as roughly consisting of professional sports teams and leagues. The sports events market, they claim, totaled USD 80 billion globally in 2014, but they place the total "sports market" between USD 600 to USD 700 million (Collignon and Sultan 2014). Because of data limitations, such a figure is a rather weakly substantiated estimation.

Structural accounts are generally based around industry classifications. Definitions built around industry classifications are an improvement to the more arbitrary top-down approach, but they have their own problems too. First, economic activities in these systems are strictly defined, meaning that considering only sectors explicitly coded as sports may exclude much of the sports-related activity in the broader economy. There is economic activity that could be included in other sectors, but following the industrial classification

systems prevents one from identifying these firms. Consider, for instance, sports-related broadcasters like ESPN. These firms are significant players in the sports economy. Professional sports wouldn't have as wide an audience without these firms. Moreover, the broadcasting arrangements that ESPN makes with many professional leagues are a significant component of their revenues. ESPN, however, would be categorized as a media company according to the NAICS or NACE systems. It therefore would be bundled with businesses like NBC, Universal or News Corporation, companies that are far more engaged with the production and transmission of general interest news and entertainment rather than just sports-specific stories.

Second, comparability of classifications is often difficult across time and across geography. Comparability is difficult across time because classifications like NAICS or NACE are revised every couple years to reflect changes in the economy. These revisions are important, but without detailed correspondence tables, they can render time-series analysis impossible. Comparability across geography is difficult because different countries group economic activities with different classifications. As Figure 1.1 and Figure 1.2 demonstrate, NAICS and NACE have broad sections covering sports, but they differ in how they're divided. In NAICS, the spectator sports classification appears at the five-digit level of the hierarchy and can be divided further into three different six-digit classifications: sports teams and clubs, race tracks, and other spectator sports. In NACE revision two, sports activities appear at the three-digit level and are divided into four categories: operation of sports facilities, activities of sport clubs, fitness facilities, and other sports activities.

Comparing different countries' classifications or different versions of the same countries' classification is complicated. For example, comparing spectator sports data at the NAICS five-digit level with sports activities data at the NACE three-digit level would be misleading since the NACE category includes fitness facilities but the NAICS grouping doesn't. These comparisons are also difficult at a more granular level. For example, NACE classifies the operation of sports facilities under sports activities, but NAICS places the management of such facilities under a group labeled as promoters of performing arts, sports, and similar events with facilities, which is placed outside of the sports activities category. Correspondences exist that help assuage these challenges, but they often aggregate the classifications, sometimes to the point where there is only one identifiable sports industry.

2.3. Attempts to address these challenges through the Vilnius Definition

The Vilnius Definition of Sport described above represents the most comprehensive attempt to understand and account for the sports economy thus far. Many relevant stakeholders, such as national statistical agencies and research universities, were included in its formation and have agreed upon the methodology it uses. Perhaps most importantly, it has motivated several EU countries to begin producing their own SSAs, each of which is constructed under the same framework. Important improvements would be made if these

efforts continue and data were collected for a significant period using such a definition. These attributes are laudable and deserve to be recognized.

The Vilnius Definition, however, isn't without its own challenges. First, the methodology through which the EU working group included or excluded sectors in the narrow and broad definitions is not clear. The statistical definition, the smallest categorization, is derived simply from industry classifications, but the two other categories involved considerable subjectivity. The approach describes the narrow definition as consisting of the statistical definition of sport plus those products and services required to "do" sport but it is unclear how these activities are determined. Likewise, the Vilnius Definition describes the broad definition as consisting of the narrow definition plus those products and services having a direct or indirect relation to sport.

These definitions are the compilation of a wide range of industries chosen through an arbitrary process. Industries in the narrow and broad definitions were selected through discussions between the sports economy experts and analysts that gathered for the EU working group. Each expert argued for those industries he or she thought was important for the sports economy in their country. One country, for instance, wanted hotels and accommodations to be considered due to the importance of skiing and tourism in its economy. Sporting goods manufacturing, on the other hand, was more important for other countries. Other than the statistical definition at the core of these categories, industries were added as the result of debate, discussion, and negotiation rather than an explicit objective framework.

The result is that the economic importance of sports is likely overestimated. While it doesn't fully consider the production of each sector, the definition labels over 130 NACE classifications at the four-digit level as sports-related. The group reports that 1.76% and 1.13% of EU total gross value added falls under the broad and narrow definitions of sport. In contrast, only 0.28% of total EU value added is included in the statistical definition (SportsEconAustria et al. 2012). It compares the share of sport in European value added to that of the sum of value added in agriculture, forestry, and fishing activities. These comparisons culminate in the primary policy implication of the report: the observation that sports are a significant industry in the European economy that is worthy of focused policies and attention. However, if one were to create a satellite account of the agriculture, forestry, and fishing sectors according to a similar "broad definition," it would surely dwarf the broad definition of sports. Comparing the narrow or broad definition of sports to other size of other industries according to only their industry classification is unfair. It is a comparison based on double counting and ultimately exaggerates the size of sports.

The second problem with the Vilnius Definition is the method through which production in the sports-related industries of the narrow and broad definitions is allocated to the sports economy. As mentioned above, the Vilnius Definition considers only a portion of production in those industries as sports-related. More precisely, the definition calculates a given sector's "sports-

related production" as the total production value of that sector, as obtained through national statistical systems, multiplied by the sports-related share of the sector. Members of the working group determined the "sports-related share" on an industry-by-industry and country-by-country basis. In almost every sector outside the statistical definition, however, the proper "sports-related share" is difficult, if not impossible, to determine.

For most commodity industries, the Classification of Products by Activity (CPA) system was used to derive an approximation of the sports-related share. Since it is a very granular classification, the CPA system allowed the EU group to determine what proportion of products a given industry creates is directly sports-related. For non-commodity industries, the EU group was forced to rely on industry surveys, individual interviews, and company accounts to make an approximation of the sports-related share. Such research is legitimate, but it means that the narrow and broad definitions should be reframed and discussed as the result of a series of largely arbitrary decisions. In other words, they actually suffer from many of the same challenges relating to top-down definitions frequently found in market research accounts.

While the Vilnius Definition represents a step forward in the construction of data on the sports economy, there are still many problems with the approach. First, the process through which industries were included and excluded from the narrow and broad definitions is troublesome. It likely resulted in double counting and an exaggeration of the economic importance of sports. Second, the sports-related share of production in those industries that are included in the narrow and broad definition is unknown. It can only be estimated through a series of ad hoc procedures that vary by industry and country. In light of these difficulties, future work should therefore consider new ways of thinking about and approaching the sports economy.

Section 3. How Can We Move Forward?

Some of the challenges described above can be solved relatively quickly. For instance, some accounts exclude important aspects of the sports economy or include aspects that aren't sufficiently related to sports. Simply restructuring data that is already collected could greatly improve these accounts. Other challenges described above are more difficult to address. These challenges result from data collection structures embedded within national statistical systems. Further disaggregating data within countries or increasing data comparability across countries would improve the capability of sports economy observers to provide insights tailored to a specific geographic area or industry. Removing these challenges would take time since it requires the restructuring of industry classifications and the collection of data over several years.

Addressing these challenges is important and necessary, but we believe that accounts of the sports economy would also benefit from a more fundamental paradigm shift. Most assessments of sports, whether they are market research accounts, structural accounts, or the EU working group's Vilnius Definition,

combine a diverse array of sports-related activities together. Emphasis is placed on top-line statistics that highlight the "size" of sports and the proportion of gross domestic product or gross value added that it represents in a given economy. Perhaps the most highlighted number from the EU working group's 2012 study is the figure that 1.76% of total EU gross value added comes from the Vilnius approach's broad definition of sports (SportsEconAustria et al. 2012). The fundamental question these accounts ask with respect to the sports economy is "How big?" We believe, however, that another question is more appropriate: "How different?" Shifting the paradigm in this way would allow for an assessment of the sports economy that more accurately captures the great diversity within it.

3.1. Distinguishing between core sports and the sports periphery

Asking "How different?" is important to understanding the economic role of sports because the economic activities commonly understood to be sports-related are really quite diverse. As previously mentioned, the Vilnius Definition —and many of the top-down definitions employed by market research accounts— group a wide variety of economic activity under the sports umbrella. Generally speaking, we believe that these economic activities should be divided at least into two categories: *core sports* and the *sports periphery*. Core sports activities are those that require knowledge that is highly specific to sports. Examples include activities like the operations of sports or fitness facilities found in the Vilnius approach's statistical definition. Sports periphery activities are those that only possess some sports-specific knowhow. Firms performing these activities either belong to a distinct sub-sector (such as sporting goods manufacturing) or are part of a set of businesses specializing in sports (such as sports-specific broadcasting firms ESPN and Sky Sports).

What distinguishes the sports periphery from core sports activities is the knowledge and skills that sectors in these categories require. The knowledge and skills required to participate in core sports activities is primarily about sports itself. Participating in these sectors is about playing, teaching, coaching, or managing these competitions. These activities correspond to sectors in the Vilnius approach's statistical definition: the operation of sports facilities, the activities of sports clubs, fitness facilities, and other sports activities. Industrial classification systems have different ways of naming them, but almost every system has several sectors covering these activities. As described above, four core sports sectors can be identified in the NACE revision 2 classification system: the operation of sports facilities, the activities of sports clubs, fitness facilities, and other sports activities.

Such sports-specific knowledge can be juxtaposed with the knowledge required to participate in sports periphery activities. Sports periphery activities align, for the most part, with the narrow and broad definitions of the Vilnius approach. Participating in these sectors is about manufacturing shoes, broadcasting shows, or operating hotels. These shoes, shows, and hotels might be related to sports through productive linkages or other economic

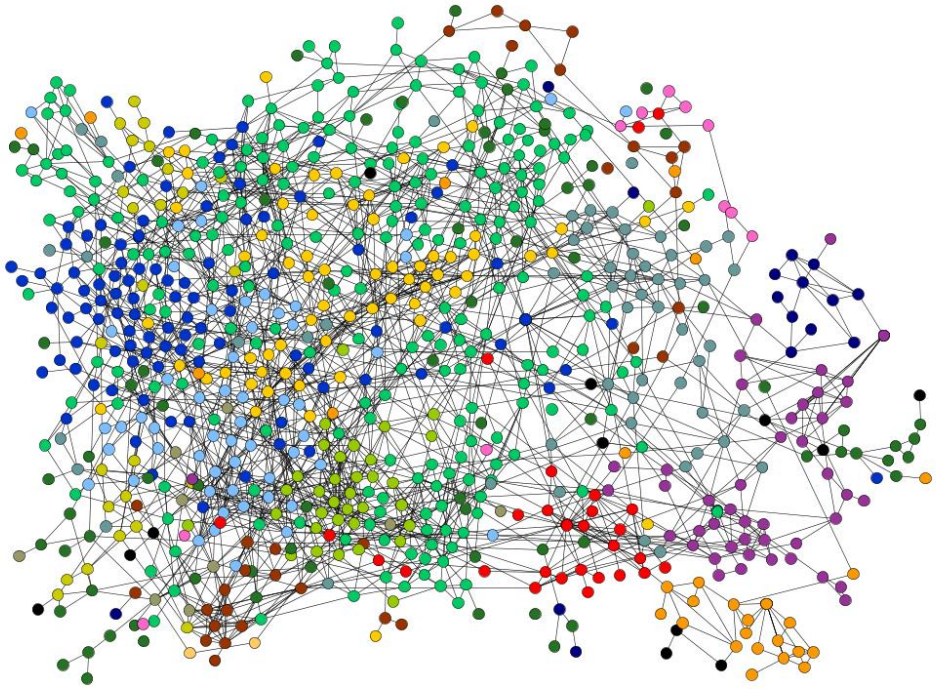
relationships, but they don't explicitly require sports-specific knowledge themselves. Sporting goods manufacturing businesses like Nike are more about textile manufacturing and retail than they are about sports. Similarly, sports broadcasting firms like ESPN are more about television, news, and mass media than they are about sports themselves. The activities captured in the sports periphery are therefore diverse and generally only related to each other by the fact that they share some sort of economic linkage with core sports activities. Unlike with core sports, the basic knowledge required for the activity is about a sector other than sports.

The industry space is a useful methodology for understanding the distinction between core sports and the sports periphery. It is a network that illustrates the industrial structure of a given geographic area by emphasizing the knowledge linkages between economic activities. Nodes in the network represent economic sectors and linkages in the network connect sectors requiring similar knowledge or skills. To create these linkages, we assume that labor flows observed in the data contain implicit information about the similarity or relatedness of the knowledge required by industries. We then calculate the skill-relatedness between any two sectors by assessing the labor flows between economic activities. Skill-relatedness is a measure of the degree to which labor flows between any two industries exceeds the labor flows that we would expect between any two industries chosen at random.

Industries requiring similar skills, such as automobile manufacturing and heavy machinery manufacturing, will have a high skill-relatedness since many workers will move between them. Conversely, industries that require very different skills, such as automobile manufacturing and hospitals, will have a low skill-relatedness because very few workers will switch between them. If core sports activities have a high skill-relatedness with sports periphery activities (and are thus highly connected to them in the industry space), then we could say that they share much of the same knowledge. Alternatively, if core sports activities have a high skill-relatedness with other core sports activities (and are thus mainly clustered together in the industry space), then we can say that these sectors require sports-specific knowledge that can't be found in sports periphery activities.

To illustrate the approach, we use labor flow data from the Netherlands. The Dutch data covers the period between 2001 and 2008, capturing more than 1.4 million labor flows. Data from the Netherlands are used because, as mentioned above, the country has highly detailed classifications with respect to sports-related activities that are not available elsewhere. Of the 826 activities discernible in the Netherlands data at the five-digit level, there are twenty-nine activities that can be considered as core sports activities. Appendix 1.A contains the core sports activities in the Netherlands.

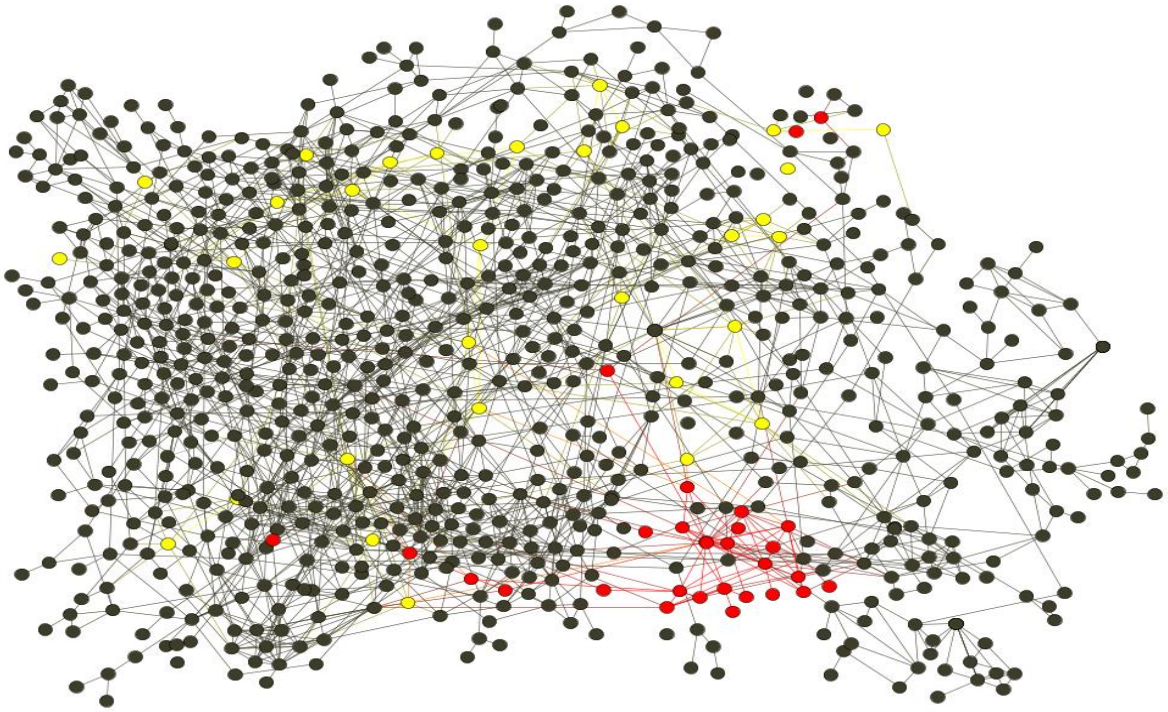
Figure 1.4. Netherlands industry space colored at the NACE rev. 1 two-digit level



Note: Core sports activities are colored red. See 0 for the labels of other clusters. Source: Own calculations using data from Statistics Netherlands.

Analyzing the Netherlands industry space produces two initial insights. First, in the industry space depicted in Figure 1.4, we observe that similar economic activities cluster together. For instance, the group of dark blue nodes in the left-hand part of the network represents metal and machinery manufacturing activities. Likewise, the purple nodes in the bottom right-hand corner of the network represent a health and social work cluster. Core sports nodes; colored red, have their own cluster in the bottom right portion of the network. The fact that these activities group together suggests that they require similar kinds of knowledge for their production processes. Such knowledge is sports-specific and can be juxtaposed with the knowledge that other sectors require. For instance, the red core sports activities have little, if any, linkages with the dark blue metal and machinery manufacturing nodes.

Figure 1.5.Netherlands industry space colored according to core sports and the sports periphery



Note: Core sports activities are colored red and sports periphery activities are colored yellow. See 0 for the activities included in these classifications.
Source: Own calculations using data from Statistics Netherlands.

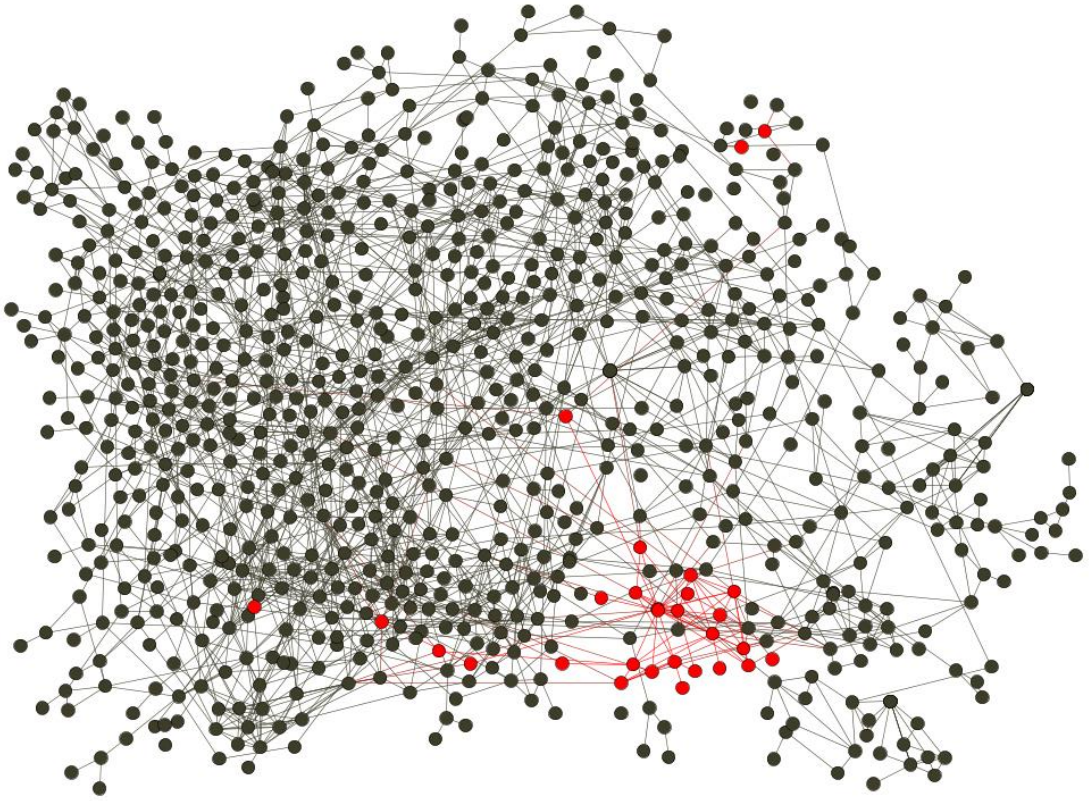
Figure 1.5 depicts the same Netherlands industry space as shown in Figure 1.4 with the only difference being the colors of nodes. Nodes in Figure 1.5 are colored red if they belong to the core sports cluster and yellow if they are classified as sports periphery activities. The sports periphery activities we consider here, which are listed in Appendix 1.A, aren't an exhaustive list of sectors that could be considered part of the sports periphery. They represent only a selection of activities included in the narrow and broad categories of the Vilnius Definition. Nonetheless, differentiating between these different types of activities reveals a second important insight: core sports activities aren't closely connected to other more peripheral activities often associated with the sports economy. Since sports periphery activities are located in clusters other than the core sports cluster, they require knowledge and skills different than those required by core sports. For example, sporting goods manufacturing is skill-related to and therefore grouped with other manufacturing industries such as the manufacture of household electrical appliances. Similarly, radio and TV production are more closely connected to news agencies or the performing arts than they are to sports. We can conclude that sports periphery industries require skills and knowledge that are more about manufacturing, broadcasting, hospitality, or another activity than they are about sports. Acknowledging and understanding these differences is an important step in

shifting from a paradigm that asks "How big?" to one that asks "How different?"

3.2. Distinguishing between activities within core sports

The industry spaces above illustrate that the activities many previous accounts consider to be "sports-related" require skills and knowledge unrelated to sports. In addition to the difference between core sports and sports periphery activities, there are important differences between core sports activities themselves. With activities ranging from spectator sports activities to fitness and recreation sports activities, core sports activities can vary widely in terms of their size and relationship to other parts of the economy. Just as it is important to disentangle core sports activities from the sports peripheries, it is therefore also essential to distinguish between different core sports activities themselves.

Figure 1.6. Netherlands industry space with the core sports colored



Note: Core sports activities are colored red. See Appendix 1.A for the activities considered to be core sports.
Source: Own calculations using data from Statistics Netherlands.

Figure 1.6, a final version of the Netherlands industry space with only the nodes highlighted in red, demonstrates the point. While most core sports

activities are clustered in the bottom right-hand corner of the network, there is still significant diversity within the core sports category itself. Winter sports, for instance, are in the center of the network and linked to non-sports activities such as general machinery and public passenger transport. Similarly, the equestrian node is linked to only two other nodes, one of which is the wholesale of cattle, an activity with no sports-specific knowledge. Contrast these nodes with the team indoor sports or soccer nodes, both of which are at the heart of the core sports group. These activities are linked to many other nodes, almost all of which are core sports activities. Figure 1.6 therefore suggests that there is diversity not only between the core sports and the sports periphery, but also within the core sports cluster itself.

The diversity within core sports at which Figure 1.6 hints can be better seen even more clearly through data from the 2012 U.S. Economic Census. Consider two different sectors in the NAICS classification: sports teams and clubs (711211) and fitness and recreational sports centers (713940). Figure 1.6 displays several descriptive variables of the two sectors. At an initial glance, their total wages and total revenues are comparable. Sports teams, for instance, are in the 72nd percentile in terms of revenues, while fitness centers are in the 74th. Fitness centers, however, appear to be a far larger sector, at least in terms of the sheer number of establishments and employees. Fitness centers are in the 94th and 96th percentiles in terms of these two variables, but sports teams are only in the 44th and 65th.

Table 1.1. Size of industries 711211 and 713940 in the United States

Industry	**Sports teams and clubs**		**Fitness and recreational sports centers**	
NAICS code	**711211**		**713940**	
Total revenues, thousands of USD (% rank)	22,393,140	(0.72)	26,064,739	(0.74)
Total wages, thousands of USD (% rank)	14,323,508	(0.93)	7,883,461	(0.86)
Establishments (% rank)	1,005	(0.44)	29,682	(0.94)
Employees (% rank)	57,784	(0.65)	605,316	(0.96)

Source: 2012 United States Economic Census

However, in terms of the revenue per establishment and total wages per employee, sports teams far exceed fitness centers. Total wages per employee for sports teams, for instance, are in the highest percentile possible. They are the second highest in the economy, only lower than investment banking and higher than industries like portfolio management and commodity contracts. Fitness centers, in contrast, have some of the lowest total wages per employee in the economy. Sports teams therefore appear to be an industry with a few high cash flow establishments, while fitness centers are an industry with many low cash flow firms.

Table 1.2. Size per establishment and employee of industries 711211 and 713940

Industry	Sports teams and clubs		Fitness and recreational sports centers	
NAICS code	**711211**		**713940**	
Revenue per establishment, thousands of USD (% rank)	22,281.73	(0.76)	810.75	(0.12)
Total wages per employee, thousands of USD (% rank)	247.88	(1.00)	13.02	(0.01)

Source: 2012 United States Economic Census

These differences in overall sector size and size per establishment are likely indicative of further differences in terms of required inputs and subsequent production processes. Sports teams require significant physical capital inputs such as stadiums and training facilities. Likewise, they require workers who are highly trained athletes, coaches, or management executives. In contrast, fitness centers are far less capital intensive, as they require only the construction of a relatively small gym or studio. The labor that they employ is likely more similar to the education and health sectors than it is to sports clubs.

In addition to their relationship with other businesses and production, sports teams and fitness facilities also offer different services and therefore have very different relationships with consumers. Sports teams offer an entertainment experience to their consumers. Consumers can access that experience in person by attending a game, but the Internet and modern broadcasting systems mean that the game can also be seen by fans that are farther away. Both local and international spectators can participate in the experience. Fitness centers, on the other hand, offer an experience that consumers desire for a mixture of health and entertainment reasons. Some people attend gyms because they want to stay healthy, but others derive pleasure from exercising. Moreover, almost all of the consumers participating in fitness and recreational activities are local consumers.

As a result, we would expect the productive, human capital, and consumption linkages between these two sectors and other parts of the economy to be very different. Professional sports teams may have stronger productive relationships with construction firms and broadcasting businesses, while fitness facilities may have no relation to these sectors at all. Conversely, fitness facilities may have strong human capital linkages to education and health services, but professional sports teams likely wouldn't share these connections. Moreover, sports teams may have strong co-consumption linkages with restaurant, bars, and merchandise stores, but these connections wouldn't be present for fitness facilities. These relationships are difficult to identify, especially with the current state of data on the sports economy. It is clear, however, that, in addition to separating out the sports periphery, future accounts of the sports economy should avoid analyzing even core sports activities as one monolithic entity. Failing to do so would obscure these

nuances, therefore limiting the ability of policymakers to make informed decisions.

3.3. Implications for future work on the sports economy

Shifting the paradigm from one focused on the size of the sports economy to one focused on the diversity of sports-related economic activities has important implications for future work. Moving forward, analysts and academics need to carefully distinguish between those activities at the core of sports and those activities that are more peripherally related. Distinguishing between activities in this way will likely diminish the overall size of the sports economy that future accounts estimate, but it would allow for more nuanced and ultimately more impactful policies. Once the paradigm has shifted from one focused on size to one focused on diversity, there are a number of different economic profiles and relationships on which future work should focus. These include some of the following analyses:

- *Employment profiles* could describe the kinds of employees that participate in sports-related activities. What types of occupations work in these activities? Do these positions offer high salaries?
- *Geographic profiles* could describe the distribution of these sports-related activities over space. What locations have particularly high concentrations of sports-related activities? Are there certain characteristics of these locations that attract sports-related activities?
- *Input/output linkages* would depict the productive connections that a given sports-related activity has with the rest of the economy. What inputs do sports-related activities need? To what other industries do sports-related activities serve as an input?
- *Co-location linkages* would offer insights on the industries that place themselves near sports-related activities. Do certain sports-related activities cluster together? What other industries are found near sports-related ones?
- *Co-consumption linkages* would describe the other purchases that consumers make when they buy products or services from sports-related activities. Are these purchases significant in size or diversity? What industries benefits from these purchases?

Due to the diversity described above, these profiles and relationships will likely vary across core sports and sports periphery activities. Disaggregating these analyses and performing them for specific activities is the best way to analyze the differences within the sports economy.

Conclusion

Many current characterizations of the sports economy face important limitations. Whether they are market research or structural accounts, these depictions of the sports economy have a variety of challenges. Because value

added data is relatively rare, many accounts rely on firm-level revenues, much of which is based on sometimes dubious estimations. These revenue-based accounts also often disguise the costs and subsequent profitability of the firms in the sports economy. Measurement challenges are compounded by a range of issues relating to the definition of sports as an economic activity. For instance, when value added data is collected by national statistical agencies, it is often done so according to industry classifications that render it incomparable across time and geography. These industry classifications can also make it difficult to include components of the sports economy, such as sports broadcasting or sporting goods manufacturing, that straddle the boundary between sports and other economic activities. Market research accounts sometimes leverage firm-level data in an effort to escape this problem, but they in turn rely on questionable top-down definitions. These top-down definitions are often opaque and rely on significant projections about the industry's size.

Developed by the EU Working Group on Sports and Economics, the Vilnius Definition of Sport is perhaps the best attempt to accurately assess the size of the sports economy. The working group includes three definitions of sports, each of which are increasingly broad in scope. The broad definition - the approach's most inclusive grouping and the one on which the working group focused - includes portions of any industry with a direct or indirect relation to any sport activity. We believe that definition of the sports economy is too broad. The definition ultimately includes many products and services consumed by people not involved in the sports economy.

The result is a definition that captures six times the value added of the sectors that the NACE industry classification specifically labels as sports-related.

We believe that the path forward requires a two-step approach. First, efforts must be made in the long term to improve data collection within structural accounts. One area of improvement is the synchronization of industry classifications across time and across countries. Another is the disaggregation of classifications to more accurately capture the diversity and nuances of the sports economy. Second, in the short to medium term, future assessments of the sports economy should ask "How different?" rather than "How big?" In other words, accounts should attempt to disaggregate the sports economy as much as possible and focus on the economic relationships of individual sports-related activities. Potential relationships to analyze include input/output linkages, co-location linkages, and co-consumption linkages. Recognizing the diversity within the sports is perhaps the most important step to improving future accounts and ultimately enhancing sports policy.

References

Andrews, Matt and Peter Harrington. 2016. "Off Pitch: Football's financial integrity weaknesses and how to strengthen them." CID Working Paper No. 311,

2016. http://www.hks.harvard.edu/centers/cid/publications/faculty-working-papers/footballs-financial-integrity.

Bosshardt, Alex et al. 2015. "Commercial Breaks: Football Money League." *Deloitte*. Accessed March 28, 2016. https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/sports-business-group/deloitte-football-money-league-2015.PDF.

Buraimo, Babatunde, Rob Simmons, and Stefan Szymanski. 2006. "English Football." *Journal of Sports Economics* 7, 1: 29-46.

Collignon, Herve and Nicolas Sultan. 2014. "Winning in the Business of Sports." *AT Kearney*. Accessed March 24, 2016. https://www.atkearney.com/documents/10192/5258876/Winning+in+the+Business+of+Sports.pdf/ed85b644-7633-469d-8f7a-99e4a50aadc8.

European Commission. 2007. "White Paper on Sport." *Commission of the European Communities*. Accessed March 28, 2016. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52007DC0391&from=EN.

European Commission. 2013. "Definition of Sport- Version 2.0 ("Vilnius Definition 2.0") according to CAP 2008." *Commission of the European Communities.* Accessed March 28, 2016. http://ec.europa.eu/eurostat/documents/6921402/0/Vilnius+Definition+Sport+CPA2008+official+2013_09_19.pdf/30838d11-01ea-431f-8112-50786e187c1c.

European Commission. 2013. "Sport Satellite Accounts, A European Project: New Results." *Commission of the European Communities*. Accessed March 28, 2016. http://bookshop.europa.eu/en/sport-satellite-accounts-pbNC0213236/.

Humphreys, Brad R. and Jane Ruseski. 2008. "The Size and Scope of the Sports Industry in the United States." IASE/NAASE Working Paper Series No. 08-11. http://college.holycross.edu/RePEc/spe/HumphreysRuseski_SportsIndustry.pdf.

Jones, Dan, Paul Rawnsley, and Alan Switzer. 2015. "Annual Review of Football Finance - Highlights." *Sports Business Group at Deloitte*.

Kokolakakis, Themis. 2015. "UK Sport Satellite Account, 2011 and 2012: Statistical Release." United Kingdom Department of Culture, Media, and Sport. Accessed March 28, 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/450258/UK_Sport_Satellite_Account__2011_and_2012.pdf

Lago, Umberto, Rob Simmons, and Stefan Szymanski. 2006. "The Financial Crisis in European Football: An Introduction." *Journal of Sports Economics* 7, 1: 3-12.

Milano, Michael and Packianathan Chelladurai. 2011. "Gross Domestic Sport Product: The Size of the Sport Industry in the United States." *Journal of Sport Management* 25: 24-35.

PricewaterhouseCoopers. 2011. "Changing the game: Outlook for the global sports market to 2015." *PricewaterhouseCoopers*. Accessed March 28, 2016. https://www.pwc.com/gx/en/hospitality-leisure/pdf/changing-the-game-outlook-for-the-global-sports-market-to-2015.pdf.

PricewaterhouseCoopers. 2015. “At the gate and beyond: Outlook for the sports market in North America through 2016.” *PricewaterhouseCoopers.* Accessed March 28, 2016. https://www.pwc.com/us/en/industry/entertainment-media/publications/assets/pwc-sports-outlook-north-america-2015.pdf.

SportsEconAustria et al. 2012. “Study on the Contribution of Sport to Economic Growth and Employment in the EU.” Study commissioned by the European Commission, Directorate-General Education and Culture. Accessed March 28, 2016. http://ec.europa.eu/sport/library/studies/study-contribution-spors-economic-growth-final-rpt.pdf

CHAPTER 2. IN-DEPTH MULTIDIMENSIONAL EXPLORATION OF A COUNTRY'S SPORTS ECONOMY: EXAMPLE OF MEXICO

In order to appropriately understand the sports sector, its magnitude, embeddedness in the economy, and strategic value, it is necessary to develop a framework through which to study it. Having a standardized and comprehensive methodology to analyze the sports sector will allow policymakers, academics and other stakeholders to look at the sports sector at a new level of detail.

Considering the numerous data quality and aggregation challenges outlined in Chapter 1. , this chapter attempts to build on the suggested categorization of the sports industry and develop a sound strategy to analyze the sector through an empirical exercise in a specific context, in this case Mexico.

To this end, we first attempt to understand how *connected* the sports sector is to other activities in the economy and identify which sectors share similar know how with the sports sector[1]. Additionally, we attempt to determine what is the relative magnitude of the sports sector in a number of key variables such as value added and employment.

Similarly, we consider the spatial analysis of sports related economic activities. The advancement of spatial economics has allowed us to understand a new dimension of how an economic sector can develop and how characteristics inherent to a given geography can play a role in determining why some activities end up appearing and developing in the places they do.

Lastly, some descriptive and regression analyses efforts enable us to better understand and characterize the sports sector. Such exercises allow us to learn what type of workers typically comprises the sports sector, and whether such profile is different between the different categories of sports activities. Among such descriptives, we can look at education level and wages of those who work on this sector, and compare them to the rest of the economy.

This paper is structured as follows: Section 1 will make the case for how publicly available data in Mexico meets the level of detail required for this type of study. Section 2 will look at the way the sports sector is nested in the overall economy, Section 3 studies the magnitude of the sports sector through different metrics, Section 4 looks at the type of jobs that comprise the sports sector, Section 5 looks at the differences in intensity of sports activities and early work on its potential causal roots. Section 6 provides some conclusions.

[1] "Know-how", as a term, makes reference to the intangible agglomeration of knowledge around a given economic activity (Hausmann and Rodrik, 2002).

Section 1. Description of Data Required for Analysis: The Case for Mexico

As outlined in Chapter 1. , the appropriate data to study sports related economic activities requires a certain level of detail and disaggregation to perform a thorough analysis. In order to meet these standards, we turned to Mexico, which makes available a number of granular and complementary data sources that facilitate a multi-dimensional analysis. More precisely we focused on:

- Mexico's Economic Census Data: This source provides information on 800+ economic activities in Mexico. Out of these, 30+ are sports related economic activities. The information is disaggregated for the 2,438 municipalities in the country. It includes information on different metrics of production at the industry-location level. Namely, it provides the production value of each industry under the NAICS classification within each municipality in Mexico.

  This type of information could allow researchers to: (I) Gain an understanding on the relative size of the sector and its composition, (ii) Determine places with existing and potential relative comparative advantage in different sporting activities and (iii) Determine the relative complexity gain for a place in engaging in sports. We have this information for 2004, 2009 and we expect to update it with data for 2013.

- Mexico's Social Security Data: This source provides information on 800+ economic activities in Mexico. Out of these, 30+ are sports related economic activities. The information is disaggregated for the 2,438 municipalities in the country. It includes information at the worker-level for each formal establishment and firm in the country.

  This type of information could allow researchers to: (i) Gain an understanding on the relative size of the sector and its composition, (ii) Identify establishment level trends per sport related activity, (iii) Identify non-sports industries that tend to co-locate with sports activities, (iv) Determine places with existing and potential relative comparative advantage in different sporting activities and (v) Linkages between different economic activities through labor flows. We have this information on a yearly basis for the period 2004-2013, and we expect to update it with data for 2014.

- Mexico's Population Census Data: This source provides information on population engaged in one of 150+ economic activities in Mexico. Out of these, 10+ are sports related economic activities. The information is descriptive at an individual level but can be aggregated for most of the 2,438 municipalities of the country. It includes information regarding gender, years of education, years of experience, average wage, occupation, and urbanization amongst others.

This type of information could allow researchers to: (i) Gain an understanding on the underlying characteristics of the labor force associated to different sporting activities, (ii) Identify characteristics intrinsic to locations.

Those datasets, in addition to extensive spatial work compiled for Mexico from other sources, has allowed us to begin this suggested approach to the sports sector with Mexico. More so, in future these sources could be complemented with a variety of municipality level data in a wide variety of topics.

The datasets we leveraged in Mexico have three main characteristics that make them particularly suitable for the type of analyses we are focused on:

A. Sector disaggregation

Through the Mexican Social Security Data and the Economic Census Data we have access to specific five-digit level code for each economic activity performed by formal establishments in the country. This allows us to go into great depths in terms of fully and accurately understanding the different activities that encompass the sports sector in the country. This level of disaggregation allows us to study the sports sector as suggested in Chapter 1. : core sports, professional sports, fitness and recreation sports, and sports periphery. Nevertheless, given that the Mexican population Census presents its data in a four-digit level of aggregation, not every analysis performed in this chapter is done at the greatest possible level of disaggregation as to maintain consistency across databases.

B. Spatial disaggregation

Another essential component to better grasp the factors behind intensiveness of the sports sector in a given place is the level of spatial disaggregation of our data. In this sense, the fact that we have access to employment-and-production-related variables from the Mexican Social Security Administration at the municipal level allows us to study more profoundly what relationships we find in areas that are intensive on sports[2]. Similarly, other municipal-level datasets measuring several social and economic variables are also incorporated into our analysis of municipalities and the sports sector. Lastly, geographic variables also at the municipal level, such as average terrain slope, precipitation levels, as well as distances to means of transportation, are included in our study.

C. Database complementarity

We are then leveraging in this chapter the numerous variables we have available to study the sports sector. Namely, we have access to databases on value added, number of companies, and value of production, alongside databases with number of employed people and the characteristics of the

[2] This analysis is not constrained to municipalities, since a similar exercise can then be extended to larger political units, such as states and Metropolitan Statistical Areas. All these analysis and the tradeoffs involved in each are mentioned later in this chapter.

employed people. Lastly, we also have data on the characteristics of Mexican municipalities. Given that all of these different databases have a sector and a geography identifier, they can therefore be merged into a broader dataset that has complementary information facilitating a more holistic view of the sports sector.

In a sense, any place that can produce statistics with at least this level of industry and geographic granularity could easily replicate the analysis presented in this chapter and potentially expand it to focus, not only on broader characterizations of the sector but on specific sports related activities in a given geography.

Section 2. Skill-Based Clustering of the Sports Sector in Mexico.

One of the main contributions to how we think of sectors and their value to the economic ecosystem that surround them, is the notion of economic geography. Krugman (1991) highlighted the astonishing concentration rates of economic activity, these early studies then gave way to improved analyses of patterns of agglomeration and of co-location of activities within the same space as a way to understand how some economic activities connect to others to others (Audretsch and Feldman 2003). This analysis could also be seen strictly through a rural-urban lens when we try to understand through economics how people, despite vast amount of space on our world, choose to agglomerate in cities and what does this tells us of the value of connectedness (Glaeser 2009). This literature then highlights the importance of understanding how connected, central, or strategic the sports sector, and the different activities that encompass it, can be.

In order to analyze how connected a given sector is to the rest of the economy, we can rely on a variety of metrics that have been developed to determine how similar one industry is to another. Some studies in this direction have looked at the co-location patterns in the economy for a given sector (Neffke and Henning 2008), trying to find patterns of sectors that are usually present in the economy when the sector under study is also present. Namely, co-location is meant as a term for the clustering of firms that mutually benefit from being located in the proximity of each other, although they do not belong to the same industry (McCann, 2001). The aforementioned studies have then expanded their work to the analysis of the co-location of sectors.

As mentioned in Chapter 1. Section 13, another metric of how "close" two sectors can be is the *skill-relatedness* of two sectors (Neffke and Henning, 2013). This metric, as it name suggests aims at understanding how similar are the skills workers need in order to participate in each of these sectors. To come up with such an estimate, we look at the flow of workers, through time, between every combination of sectors possible. By looking at those sectors where there are higher bilateral flows than what we would otherwise expect (given sectors size with regards to the overall economy), we can then infer that those pairs of sectors must have significant *skill similarity*.

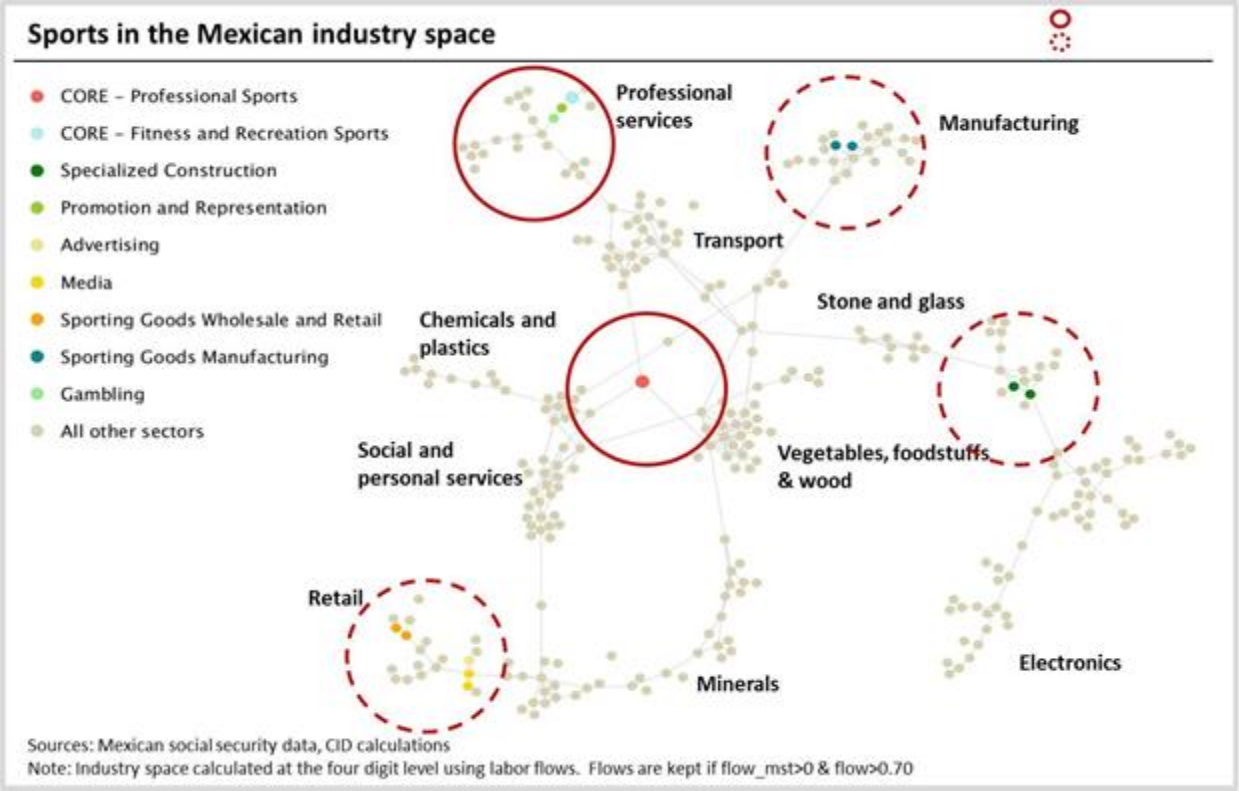
2.1. Clustering of sports related activities at a four-digit level

We applied this latter framework to the data available from the Mexican Social Security Administration. In this data we have access to detailed industry-level data of labor flows between 2009 and 2013. We used this information to develop what we call an *industry space*, which allows us to look at the different relationships between industries in the Mexican economy, based on how "similar" two sectors are. For this purpose, we looked for an appropriate threshold for which only the strongest connections are graphed between sectors. We performed this exercise through our previously explained classification of core sports and sports periphery. As mentioned in Chapter 1. 3.1. : core sports activities are those that require knowledge that is highly specific to sports, while sports periphery activities are those that only possess partial sports-specific knowhow and are primarily embedded in other types of activities. The difference between them lies in that the knowledge and skills required to participate in core sports activities is primarily about sports itself, whereas the knowledge to participate in sports periphery is more about a broader type activity that happens to overlap with sports.

In Figure 2.1 we see that this exercise suggests the existence of clear clustering patterns between some sports activities and related industries. More specifically, we can see from the graph that-in general-activities that have certain level of similarity seem to cluster together. We observe close to eight broad clusters in the industry space. Out of these, we find that sports-related activities are embedded in at least four of them. Furthermore, we see that non-core sporting activities are not clustered together, but rather are embedded in clusters of other types of activities with which they overlap. Such is the case of the retail sector and the "media" and "sporting retail" activities.

Meanwhile, the core sports sector in Mexico shows a different behavior. Part of it, professional sports, has no apparent clustering but instead seems to play a role of connector between different groups of activities. Meanwhile, fitness and recreation activities appear to be embedded within a broader professional services cluster. This might mean that, at least in the context of Mexico, the type of skills required for different activities that constitute the core sports sector, actually differ substantially. These results suggest that there is still significant diversity between the activities that comprise the core sports sector, which makes a case for the appropriate level of analysis through which to study this sector.

Figure 2.1. Sports in the Mexican industry space (four-digit level)

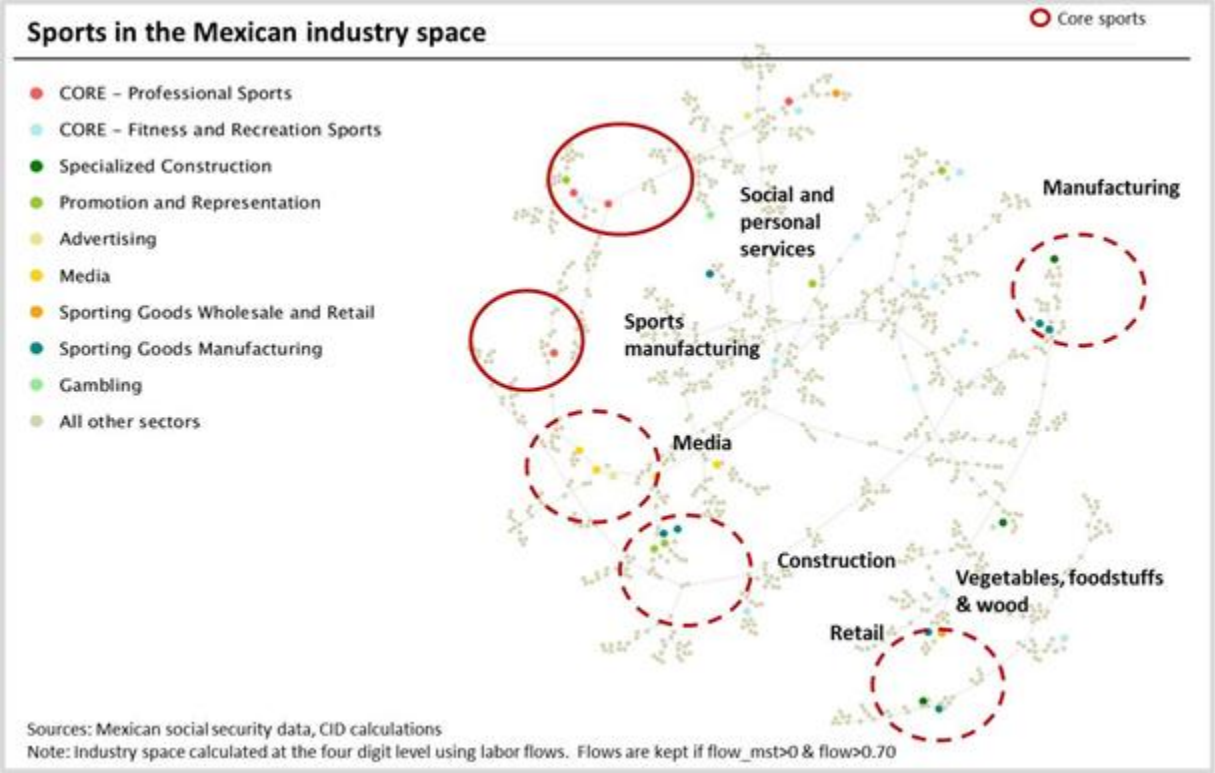


2.2. Clustering of sports related activities at a six-digit level

The previous exercise could also be performed at different levels of aggregation, depending on how detailed is the data one has access to. In the Mexican case, there is information on the economic activities performed by businesses at a six-digit level, which allows the division of economic activities into much more specific classifications. Under this classification, we can find 42 activities that are related into sports activities[3]. Even though some clustering persists at this aggregation level in areas like "media" and "manufacturing", their agglomeration is less clear under this more detailed lens.

3 As we move forward with approximations to what might be seen as sports-related activities, it is important to bear in mind the trade-offs such practice involves. While proxies allow us to study phenomena that is often times unobservable, it comes at the expense of accuracy and certainty. Namely, while approximating what categories might be deemed as "sports related" might help overcome the challenge of no standard framework to study the sports economy, it also comes with the risk of reading into these chosen proxies purely as related to the sports economy, when it could be the case that much of what we observe in variables at the sector level might have to do with other sectors that comprised our approximation.

Figure 2.2. Sports in the Mexican industry space (six-digit level)



After looking at the *connections* between sports activities and those around them, we can see that the sports sector is not isolated. It frequently evidences strong connections to more than one sector as rather than being at the *end of the branches* on an industry space.

However, it is also evident that the sports activities do not cluster with each other. This might provide further evidence that sports related activities hold stronger connections to broader industry cluster than they do with other sports-related activities (see Chapter 1. Section 3 for more details and examples).

As a result, caution must be exercised when talking about the sports sector as a whole, since such classification encompasses activities that have structural differences in the skills that are required and the requirements needed for its pursuit. Hence, further analyses should be mindful of this and focus on the particularities of each relevant sports activity. Therefore, this chapter analyzes the sector through the suggested classification of core and sports periphery. An improved version of this analysis would break it down further to specific activities, however, given that this chapter seeks to demonstrate what type of analyses could be carried out and the type of insights that could be obtained, we simplify the analyses in the afore mentioned categories.

Lastly, it is important to keep in mind differences between industry spaces from different economies. By looking at the example of an industry space presented on Chapter 1. , we see that the Dutch Industry Space experienced a strong clustering of sports activities between themselves. The differences we observe can be driven by several factors. On one hand, the classification used

by European countries differs from that used by Mexico (the North American Industry Classification System —NAICS) whose data is also presented at different levels of aggregation. But also, the nuances of the composition of an economy can be quite different from country to country, which undoubtedly raises concerns of external validity to this type of exercises. As a result, we underscore the value of this exercise as a way of having a framework with which to look at the sports sector in the economy of a given context but not of extrapolating conclusions from one context to another.

Section 3. Magnitude of the Sports Sector in Mexico in Terms of Value Added and Employment

Another relevant metric to understand the importance of sports as a productive activity is its economic magnitude. In order to explore this, we analyzed the Mexican Economic Census for 2009 (from INEGI), which collects data on production and value added for each economic activity at the establishment level. This dataset provides details the number of employees, production levels, wages, and value added for a given economic activity, for a given geographic location (national, state, municipal, or at the establishment level), or a combination of the two.

All of these variables can give us a sense of the magnitude of the sectors by telling us how relevant they are in terms of workforce absorption or by providing us an approximation of their contribution to the national economy. In the section we explore both the overall magnitude of sports in Mexico and of the economic activities that compose it, and we drill down on the core sports sector to better understand differing trends between the activities considered under this description.

3.1. Overall magnitude and activity level patterns

In terms of value added we find that core sports activities account for 0.19% of total value added, whilst sports periphery activities account for 0.96%. If we disaggregate this at an activity level, we find that out of a total of 883 activities being reported at a six-digit level of detail, we find that 11 sports-related activities are above the 50th percentile of all activities, meanwhile 24 sports related activities are below the median.

From those activities above the median, six are sports periphery activities whereas only three are core sports activities. The periphery activities are mainly from the manufacturing or media sectors, whereas the core sports activities comprise professional sports team, fitness centers, and private sports clubs. Similarly, while the median economic activity is responsible for a 0.23% share of the national production added value in the Mexican Economy, the core and periphery sports activities have a mean added value share of 0.014% and 0.05%, respectively.

In terms of employment, we find that core sports activities account for 0.59% of total employment, whilst sports periphery activities account for 1.99%.

Similarly as before, we disaggregate this on a an activity level and find that out of 33 activities, 12 sports related activities are above the median of all activities, while 21 are below. Out of those activities above the median, eight are sports periphery activities whilst four are core sports.

Another useful exercise is looking at activities similarly ranked in terms of the aforementioned metrics (say, employment) as a way of better grasping the magnitude of the sports-related activities. By doing this by the number of employees in each sector as a share of total employment in Mexico, we see that wholesale and retail of sporting goods is ranked 80 out of 179 activities in terms of the jobs it generates, surpassing equivalents such as metallic industry services, commerce of machinery and equipment, among others.

In the case of professional sports (athletes and professional sports teams), they rank 123, while sports promotion and representation (promoters of artistic, cultural, sports and similar events) rank 127. Both sectors are larger under the employment metric than mining-related services, non-residential buildings, orphanages, etc. Nevertheless, these three activities combined still do not represent 1% of Mexico's overall employment, which is very suggestive of the elevated concentration of job posts on few activities[4].

It is worthwhile mentioning that even within this high-level approximation we can begin to evidence some initial insights. One such insight is that the activities that accrue the highest share of value added are not necessarily the ones that accrue the highest share of employment. For instance, professional sports team is the 7th largest sports-related activity in terms of value added, but only the 20th in terms of employment. This speaks to some additional differences in modes of production that go beyond the previously discussed skill differences.

3.2. Structural differences within core sports activities

The differences outlined above are not insignificant and are expressed in a number of ways even within core sports activities. For instance if we look at the aggregate picture of the Mexican Economy at the four-digit level from the Economic Census and focus specifically on core sports and its broader sub-sectors —fitness and recreation sports, and professional sports— we can continue to explore these differences.
For one we find (shown in Figure 2.3 and

It is interesting to note that if we perform this analysis at an establishment level we see a different picture. Based on this calculation we see that an average professional sports establishment hires 20 times more people than an average fitness and recreation establishment, and generates 130 times more value added.

[4] For a more detailed account at the activity level of the significance of sports-related activities based on value added, employment, and wages; please refer to the appendix.

For reference sake, on a per establishment level in value added, the top activity under this metric is most like "aerospace equipment manufacturing", and "aluminum basic industry". On the other hand, the bottom three activities are most like "retail trade of fish and seafood", "telephone booth services", and "porcelain, china and pottery products manufacturing"

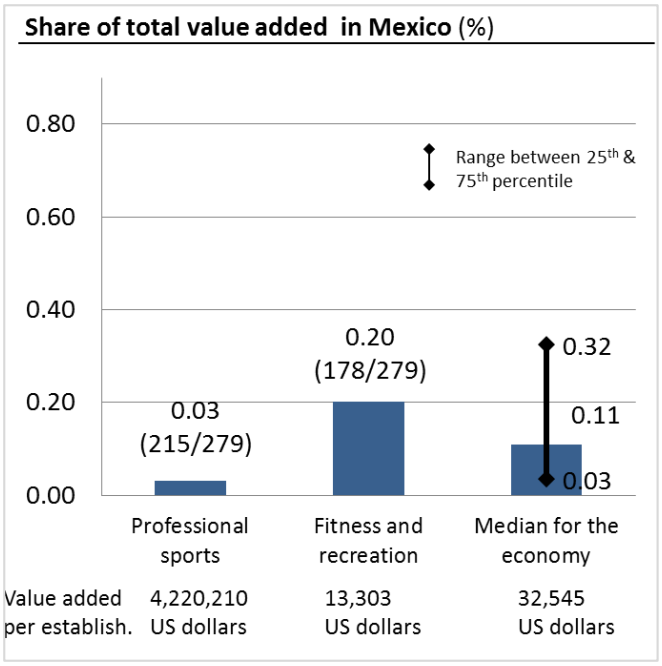
Fitness and recreation sports are as large as "retail trade of new automobiles and pickup trucks", "construction of highways, bridges and similar works". Similarly, professional sports are most similar in size to "retail trade of carpets, curtains, tapestries and similar products", and "other educational services, private sector".

In other words it seems as if, in Mexico, fitness and recreation sports is a collectively large sector in the economy, with many small establishments each with contributions, while professional sports is a relatively small sector in the economy, with very few establishments each with large individual contributions. It is worth noting that replicating this analysis at a higher level of industry granularity might provide more precise characterizations of the establishment level differences between different sports related activities, both in core sports and the sports periphery. In this same sense understanding the differences across sectors in different geographic settings and including more years of data, could also help policymakers identify relevant trends.

Figure 2.4) that fitness and recreation sports —when considered as a whole— are substantially larger than professional sports, both in terms of value added (five times larger) and employment (20 times larger). For both of these measures fitness and recreation sports is above the median for the economy (out of 279 industries) and in the case of employment it's even amongst the top 60 sources of non-public, non-agriculture employment in the economy. Meanwhile, professional sports barely reaches the 25th percentile in share of value added, and not even that for employment.

For references sake, we find that in terms of overall value added, fitness and recreation sports is as large as other sectors such as "nightclubs, bars and similar drinking places" or "fishing". Meanwhile professional sports are as large as "maritime transportation" or "electronic data processing and hosting". In terms of employment is as large as the "tobacco industry", "museums", "scientific research and development of services". It should be noted that the relative importance of these industries might vary across geographies; therefore these examples might not translate well to other contexts.

Figure 2.3. Share of total value added in Mexico (%)



Source: Inegi – Mexico Economic Census (2009), own calculations.
Note: Does not include public sector or agriculture.

It is interesting to note that if we perform this analysis at an establishment level we see a different picture. Based on this calculation we see that an average professional sports establishment hires 20 times more people than an average fitness and recreation establishment, and generates 130 times more value added.

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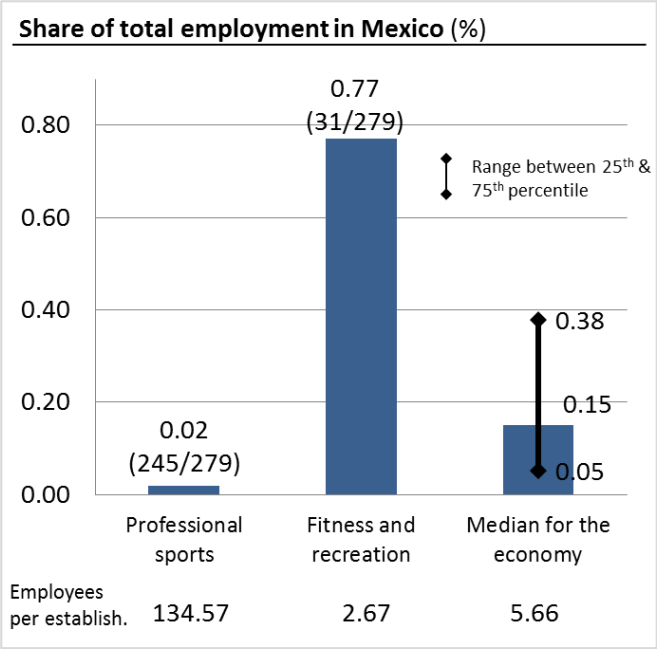
Figure 2.4. Share of total employment in Mexico (%)



Source: Inegi – Mexico Economic Census (2009), own calculations.
Note: Does not include public sector or agriculture.

Through this initial analysis, we found that in Mexico sports periphery has a total added value five times that of core sports. In the case of employment, this ratio falls somewhat to seven-to-two. Furthermore, when drilling down at an activity level and comparing with the median activity in the economy we find that nine sporting activities are above the median in terms of value added and 12 meet these criteria in terms of employment. Nonetheless, we found that sports related activities that rank amongst the highest in value added, not necessarily do so as well in terms of productions, which might signal further structural differences across sports related economic activities.

We cursory explored these differences by drilling down in the sub-sectors of core sports and found that fitness and recreation sports as a whole is substantially larger than professional sports. Also, fitness and recreation sports are above the median size of industries for the economy whereas professional sports are consistently below the median under different definitions of magnitude. Nonetheless, when considering the number of establishments we see that fitness and recreation sports are about many small establishments with a large collective contribution while Professional sports are about very few large ones with a small collective contribution.

These insights might be relevant for policymakers as they provide further evidence that the individual activities that compose the broader sports sector might be structurally different, not only in terms of the skills required, as mentioned in Chapter 1. Section 3, but also in terms of their value added contributions, employment absorption capacity and establishment level mode of production. Furthermore, if there are so many high-level fundamental differences across sports related activities, it begs the question that perhaps the places that are intensive in different sports related activities are also

fundamentally different. Lastly, policy tools to promote or pursue different sector related goals might vary significantly depending on the specific sports-related activity being considered.

Section 4. Characterization of Employment in the Mexican Sports Sector

An additional angle, through which we can hope to better understand the sports sector, is through a characterization of the type of employment associated to it. In order to pursue this we leveraged various available data sources, namely information on wage, employment levels and labor flows at the industry level from the Mexican Social Security Administration and individual level characteristics from the Population Census.

In this section we explore the level of formality associated to sports related employment in Mexico, a major consideration for Latin American economies. We also compare wages for sports related employment to those paid in other activities in the Mexican economy. We break down the occupations associated to sports related employment and identify major *sending* and *receiving* industries in terms of labor flows. Lastly, we provide some additional descriptive statistics on the individuals employed in the sector.

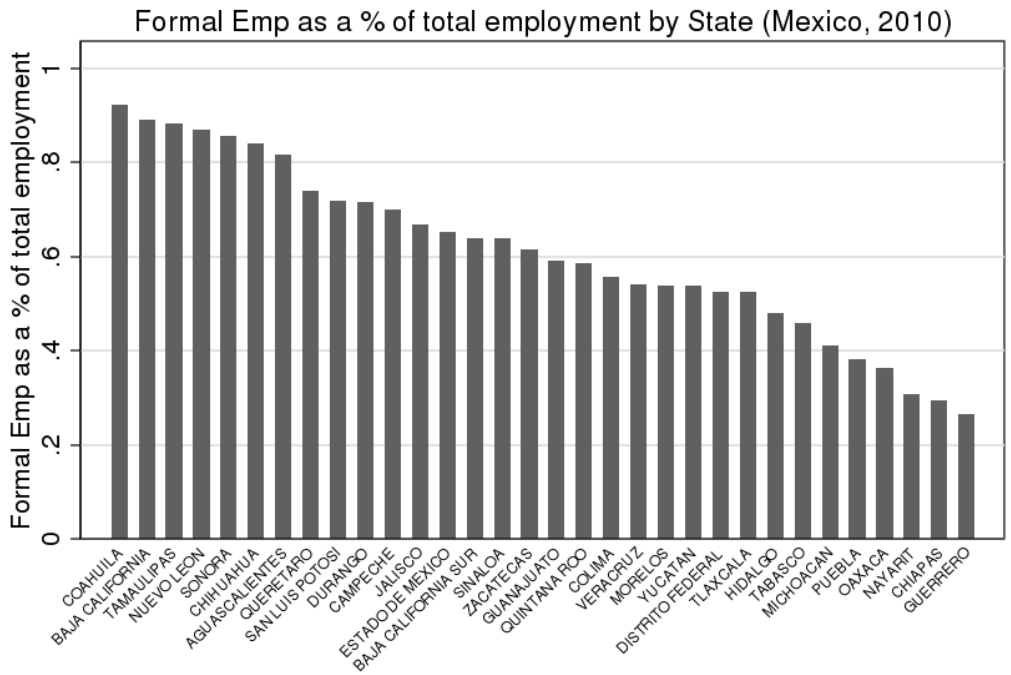
4.1. Formal employment and sports

In contexts with low governance or state capacity, the nature of the labor market changes significantly. That is why less-developed economies usually exhibit significant portions of their labor force belonging to unofficial or unregistered businesses that lie beyond the reach of the state. Namely, the World Bank defines the informal economy as *"activities and income that are partially or fully outside government regulation, taxation, and observation"*.

The coexistence of both a formal and informal sector of the workforce is particularly common in Latin America, where the presence of large corporations provide a segment of the labor force with formal employment opportunities, while other smaller employers, paid employees, and some self-employed remain in the shadows of the system either to increase their take-home earnings or reduce their costs by evading taxation and social contributions.

As a result, analyzing the sports-related jobs under this dimension becomes particularly relevant for the Mexican context and can provide insights into how this sector operates on similar contexts elsewhere. Leveraging data from the Population Census, we find that 49.76% of the sampled Mexican population is currently employed. In this group, we also find that the core sports sector has a lower proportion of formal jobs than the average of the economy, while the opposite is true for sports periphery. More precisely, 45% of employees belong to the informal sector in the overall economy, while the same is true for 54.14% of the employees in the core sports sector and for 25.51% of employees in sports periphery activities.

Figure 2.5. Formal employment in the sports sector as a % of total employment by state (Mexico, 2010)

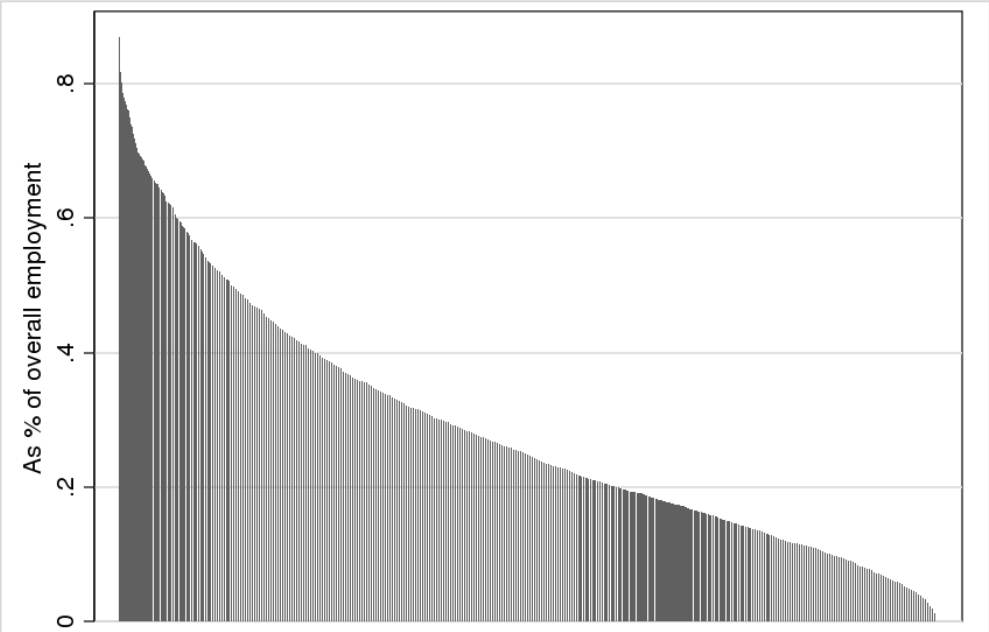


Source: Mexico Population Census 2010.

Differences of patterns of formality also emerge when considering geographic analysis. Figure 2.5 shows formal employment in the sports sector (core and periphery) as a percentage of the overall employment in each state of Mexico, with the X-axis identifying each Mexican state. Similarly, Figure 2.6 carries out the same exercise but for Mexican municipalities with the X-axis showing one bar for each municipality in the country.

At the state level, there is considerable dispersion between states with more informal jobs than others. While some states have more than 85% of their sports sector work force employed informally, the same is true for less than 35% in other states. This dispersion is even wider at the municipality level, where there is margin over an order of magnitude between municipalities.

Figure 2.6. Formal employment in the sports sector as a % of total employment by Municipality (Mexico)



Source: Mexico Population Census 2010.

Given the type of data we have available for this specific analysis, we are unable to break down formality by type of sports related activity and geographic dimension, because the results would not be representative. However, given these preliminary findings it would follow that there are bound to be substantial differences in levels of formality not only across sports-related activities and geographic areas, but that these would be even larger across combinations of these variables (i.e.: sports periphery activities in Baja California in comparison to core sports in Puebla).

4.2. Relative wages

In terms of remuneration, we see that on average the sports sector employees earn higher wages than the average those of the overall employed population. Namely, wages for employees in the core sports sector were 8,132 pesos and 6,109 pesos for those employed in the sports periphery sector (with a mean monthly salary of 6,201 for the entire sports sector). In contrast, the average wage of the overall employed population is 5,661 pesos. The core sports sector is at the 66th percentile for wages amongst economic activities, which in Mexico is similar to industries like "wholesale trade of small and major household appliances" and "wholesale trade of cigarettes, cigars and tobacco". Meanwhile, the sports periphery is at the 74th percentile, which is similar to industries like "dental offices, private sector" and "plastic bottles manufacturing".

If we break down the analysis at an activity level we would find that out of 33 activities, 11 sports related activities are above the median. Out of those, four are core sports activities and seven are sports periphery.

These differences in wages across sports-related activities can also be observed within common broad core sports categories. For instance, the mean

wage for Professional sports in Mexico is 340,599 pesos, while the mean wage for Fitness and recreation sports is 408,600 pesos.

This type of analysis is indicative of the significant differences in remuneration faced by employees in the sport sector. In future work, with a more expansive dataset, it might be worthwhile to explore differences across geographies, differences between occupations within a similar sporting activity and significant trends over time.

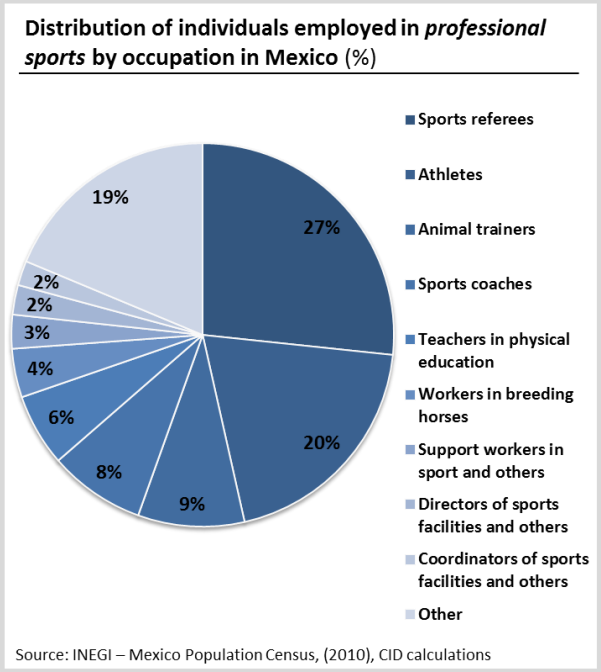
4.3. Occupational breakdown of employment

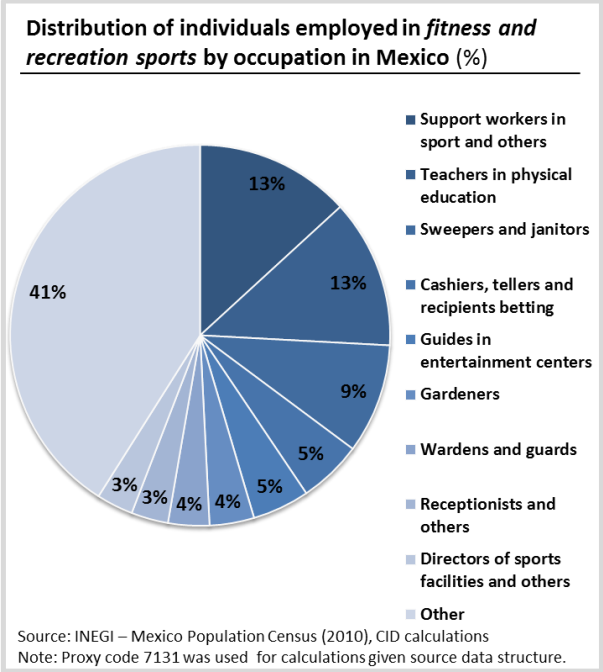
An additional dimension through which we can analyze the sports sector is by looking beyond sports-related economic activities and determining the occupations employed by these activities. Given the breadth of sports periphery activities, the vastly differing occupations associated to these activities, and the limitations of our data we chose to focus our analyses within the broader activities that encompass core sports. Specifically we leveraged the 2010 Mexico population census to identify the most common occupations in the professional and fitness and recreation sports activities.

For this purpose, we compute the share of employees that have a certain occupation in a given economic activity. By looking at the most common occupations in the professional sports activities, we find that more than half of all employment in this activity is performed by employees in very clearly sports-related occupations such as: Sports referees, athletes, etc. This is not the case for fitness and recreation sports facilities, where the majority of top occupations are not exclusively sports related, but rather seem to be more common across other types of activities (i.e.: Sweepers and janitors, cashiers, etc.)

Moreover, the overall distribution of employment in professional sports is highly concentrated in the most common occupations. Namely, more than 60% of the overall employment in professional sports is clustered in the top four occupations for the activity. Meanwhile, employment in fitness and recreation is more diversified, with just around 40% of employment concentrated in the top four occupations. In this same regard, fitness and recreation hires a much broader set of occupations (261 in total, three times more than professional sport), which —much like the top occupations— are not necessarily specific to sport and that are more common across various industries.

Figure 2.7. Distribution of individuals employed in professional sports (panel a) and fitness and recreation sports (panel b) by occupation in Mexico (%)





It is reasonable to assume that this high concentration of sports related occupations in professional sports relates back to the clustering exercise in Section 2. There we observed that professional sports activities were not necessarily embedded within broader clusters but instead stood largely on their own. Meanwhile, fitness and recreation encompasses a much broader set of sport-related activities, that go from gyms and amateur clubs to golf clubs and ski resorts and that required a broader set of occupations that are not sports specific, but rather focused on professional services. This is notable because in the Section 2 exercise this is precisely the broader cluster in which fitness and recreation sports is nested.

It is worth noting that even though we don't explore it further in this chapter, the occupational prism might add an additional level of detail to the other analyses featured. It is entirely possible that the high-level findings of diversity across geographies and sports-related activities would also hold for occupations. Therefore, future cross-section analyses that consider geography, industry, and occupation should provide a more detailed characterization of the sports related workforce. Furthermore, future analyses would also benefit from attempting to understand the relative importance of sports related occupations in non-sports related industries. Chapter 3. briefly discusses initial EU efforts in this direction.

4.4. Outflows and inflows of employment to other industries

Another key component of a thorough analysis of the sports sector is to better understand to which activities it relates the most. To perform this exercise in the context of Mexico, we rely on recorded labor flows (see Chapter 1. Section 3) between different economic activities from the Mexican Social Security Administration (IMSS). In order to then obtain those activities most closely related to the sports sector we obtain the activities with highest labor flows for each specific sports activity[5]. Similarly to the case of occupations, for the demonstrative purposes of this chapter, we limit the portrayed analysis to core sports and its respective subdivisions.

In performing this analysis, we find that professional sports activities are closely related to a mix of other sports activities and enabling activities (sound services, credit unions, etc.) Meanwhile, fitness and recreation activities are primarily related to a more varied basket of activities, from banking to manufacture, to real estate and other sports activities. If we break down the analysis at an activity level some are interesting insights appear. For instance a number of sports activities are closely related to "natural" sectors for which there is an expected relation. Such is the case of "golf courses" which is related to "landscape installation", and the case of "tourist marinas" which are related to "sightseeing transportation by water" and "water navigation services". An additional pattern seems to emerge around products that are simultaneously consumed or that could serve as an input to one another. Such are the cases for "billiard rooms and parlors" and its relationship to "marble mining" or "wood household goods and utensils manufacturing", and the case of "other recreational services, private sector" and "photographic and videotaping services" and "rental of video tapes and discs".

These results are illustrative of the type of skills and knowledge required by each sports sector category to operate. In line with our previous findings on the embeddedness of the sports sector, we find that core sports activities are indeed more associated with sports-related activities, which might not be the case for sport periphery activities. These insights are immensely valuable for policymakers seeking to understand what skills from those required by a specific sports activity, are already present in their economy. Namely, this could be the case of a mayor trying to understand what capabilities her city has from those needed to develop professional sports in her jurisdiction.

4.5. Additional descriptives under which to analyze the sport sector

In addition to the previously described analyses there are a number of other aspects that could help policymakers better understand the profile of the workers who participate in the sports sector. Among these, the available data can provide a picture on levels of schooling, gender composition of the

[5] Another purpose served by this exercise is a further robustness check of the methodology employed for the categorization of the sports economy.

workforce, age of employees and share of full time employees. Below we present a few highlights of these types of analyses.

In terms of education levels we see that the overall employed population in Mexico has an average of 9.8 years of schooling. In comparison, those employed in the core sports sector have 10.8 years of schooling, while those employed in the sports periphery sector average 10.15 years.

Similarly, while around 34% of the employed population has at least a high school degree, the same is true for 57% of employees in the core sports sector and 47% of those employed in the sports periphery sector.

Furthermore, the core sports sector ranks 90 out of 179 sectors in terms of percentage of employed population with a high school degree. This is similar to other industries like "individual and family services" and "'couriers and messengers". Within the sports sector itself, we see significant differences between the sports periphery activities, where "sports promotion and representation" has more than twice the proportion of high school graduates among its workforce than "wholesale and retail of sporting athletic goods" has.

When it comes to the gender composition of the workforce, we see that in general men comprise 65.1% of the labor force, whereas 88.8% of the employees in core sports activities are men. In the case of sports periphery, 61.6% of employees are men. It is worth noting that in terms of share of males of total employment, core sports ranks in 36 out of 179 sectors, which is similar to industries like "business support services" and "hog and pig farming". It might be interesting for future research to further explore the dynamics that lead this sector to be so male dominated.

On another note, in terms of average age of workers, we see that employees in the core sports sector are on average 34.8 years old, which ranks 23 out of 179 economic activities which is similar to "facilities support services" and "consumer goods rentals". Meanwhile, employees for sports periphery activities are on average 36.1 years old. As a point of reference, the overall employed population is 37.6 years old on average. If we look at this evidence in conjunction with the fact that workers in the sports sector are on average more educated, we can then see that workers participating in the sports economy are also, necessarily less experiences than their peers elsewhere. These are the kind of challenges that arise when we try to understand the causality behind the relationships we observe in the sports sector: Are wages different in the sports sector because of their different experience profile, or is there a causal relationship in a different direction?

Lastly, we found that 58% of employed people in the core sports sector in Mexico are full-time employees, as opposed to 87.6% of the overall economy. More specifically, people employed in the core sports sector worked on average 33.3 hours whereas those employed on the sports periphery sector worked an average of 41.8 hours. These averages are lower than the 45 hours that the overall employed population work per week.

It is notable that even in this very cursory approximation to the data, some interesting patterns begin to appear. Namely, it seems as if core sports mainly

employ young people, primarily male, with higher than average education and in a temporary fashion. However, given the high-level of the analyses, these findings should be interpreted with caution. As with the previous analyses, a more robust approximation to these themes would consider more years of data, geographic differences, differences across specific activities, and occupational specificities.

More generally, the insights of the section allow us to provide an initial profile of the labor force associated to sporting activities in Mexico. We explore a number of different themes including formality, wages, occupational breakdown, labor flows, and descriptive statistics. We find evidence of significant variance across broad and narrow characterizations of the sector and geographical discrepancies. These descriptives of the sector are useful for practitioners seeking to understand the profile of those who work in these activities, which can in turn further inform the types of policies that can be most efficient strengthening these sectors as opposed to a generic labor policy.

Additionally these findings add further evidence that a thorough understanding of the sports sector requires to ask the question of *how different*. As each sports-related activity might behave substantially different than the rest of the sector, and these differences might prove to be of paramount importance in a given context.

Section 5. Geographic Intensity of Sports Related Activities

As we mentioned on the beginning of this document, another key dimension that economists have begun to analyze economic and social phenomena in the world is the spatial one. Spatial analysis has allowed us to better understand major economic, social, and institutional features of societies at very different levels of aggregation. With this in mind, we performed a spatial analysis at the Metropolitan level[6]. As before, in order to demonstrate the potential of this analysis and to maximize the informative potential of it, we primarily focus on professional sports and fitness and recreation sports, which as we mentioned earlier are part of the core sports sector.

5.1. Initial overview of regional dispersion of magnitude of the sports sector

We start this spatial analysis of the sports sector by looking at how the magnitude of the sports economy, based on Section 3 of this chapter, changes at the state level in Mexico. Namely, when we look at the relative importance of the sports sector related employment (defined as the percentage of all total employment represented by sports-related jobs) at the state level in Mexico,

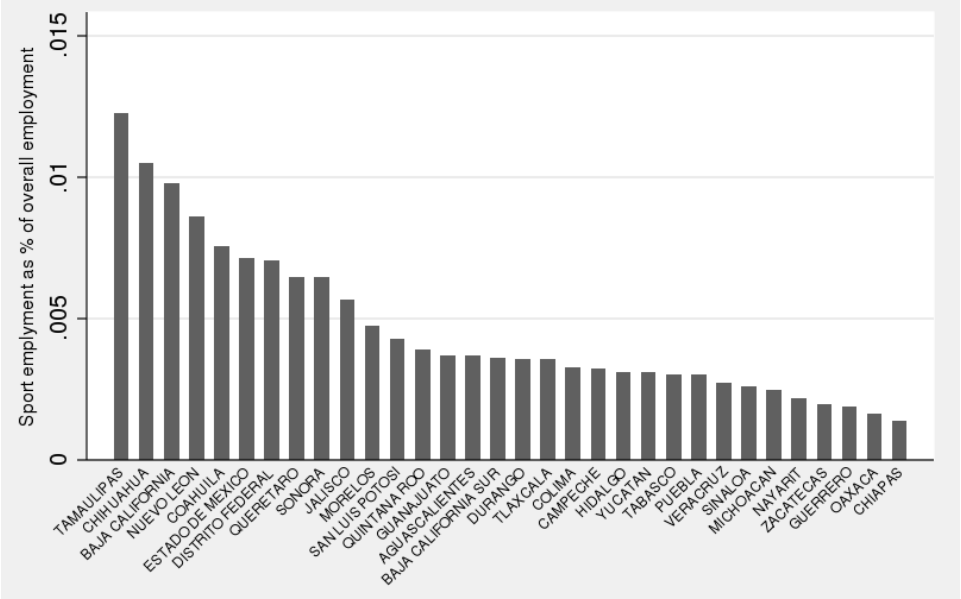
[6] The exact geographic unit for this analysis is the Metropolitan Statistical Area (MSA) which is part of the classifications performed by the Mexican Statistics Institute (INEGI). We also performed this analysis at the municipal level.

we find that there is significant dispersion between states on the weight of sports activities in their economies.

Figure 2.8 shows sports employment as a percentage of the overall employment in each state of Mexico, with the X-axis identifying each Mexican State. Similarly,

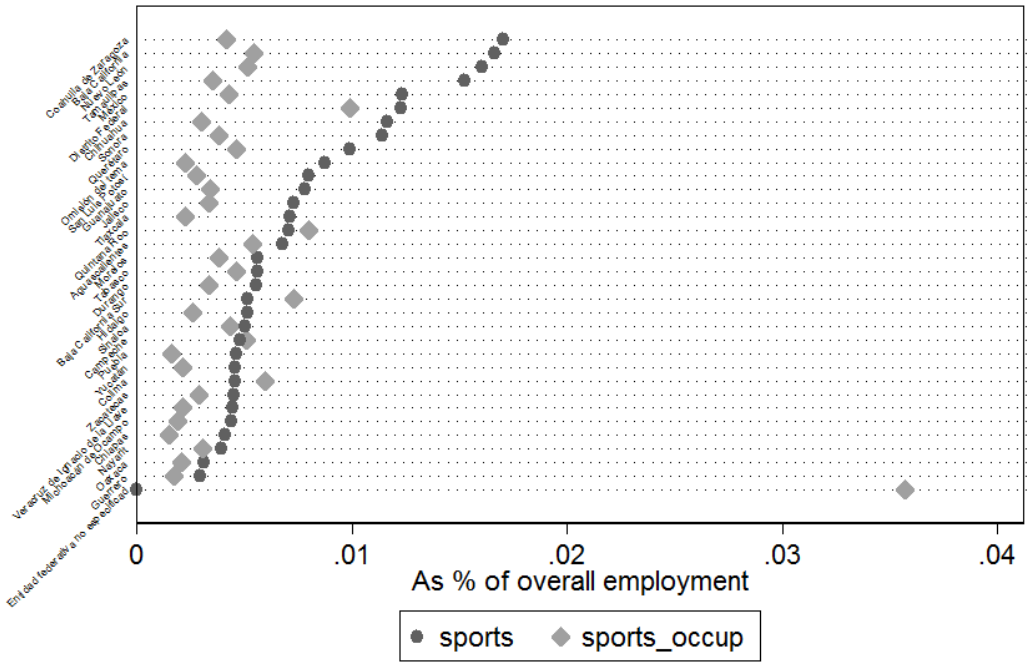
Figure 2.9 executes the same exercise but comparing sports activities with sports occupations.

Figure 2.8. Sport activities' employment as a % of total employment by State (Mexico, 2010)



Source: Mexico Population Census 2010.

Figure 2.9. Employment in sports occupations as a % of total employment by State (Mexico, 2010)



Source: Mexico Population Census 2010.

These figures leaves us some insights into what patterns emerge on both activities and occupations, whilst providing a justification for a more in-depth study of what these differences in magnitude of the sectors might mean. At the state level, there is considerable dispersion between states when it comes to the magnitude of the sports sector in their state economy in terms of employment. Similarly, these differences are much wider in the case of sports activities than in the case of sports occupations. In the case of the sports economic activities, we can observe a range that goes from states that have less than 0.1% of their workforce working on sports-related activities to states where the proportion of employees working for sports-related activities is ten times larger.

5.2. Methodology and interpretation of an RCA indicator

The next analysis we perform looks at whether each sports activity under study has a larger-than-expected proportion of employment from what we would expect in each of the metropolitan areas. For this, we first look at the national-level proportion of employment represented by sports, and we then compare that share of employment with the share of the sports activities in each metropolitan area. The darker the red, the higher the share of

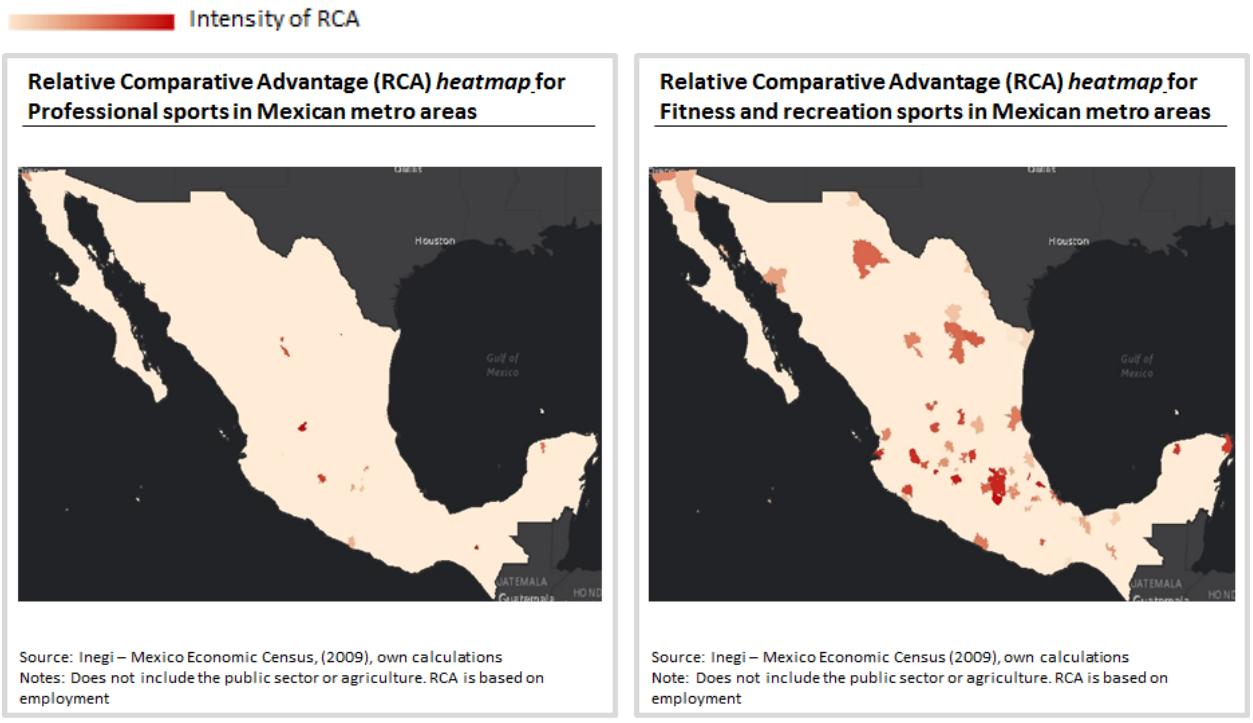
employment is in that metropolitan area from what we would have expected[7]. This indicator will be discussed in further detail in Chapter 3. .

5.3. Comparative RCA for different sporting activities and different levels of geographic disaggregation

Based on this analysis, we find that there is a significant difference in the relative comparative advantage (RCA) of metropolitan areas between the two different sports activities. These results fall in line with how different core sporting activities are in terms of magnitude, employment, clustering and skills.

Figure 2.10 shows that very few metro areas in the country have high intensity in professional sports. Alternatively, many more are intensive on fitness and recreation. Furthermore, we can attest that the same metropolitan areas are rarely intensive in both.

Figure 2.10. RCA heat map for professional sports and fitness and recreation sports in Mexican metro areas.



[7] The exact measure for this share of employment is the "Revealed Comparative Advantage" (see Balassa 1965; Hausmann, et. al. 2011) which is a measure developed as a tool to understand when a country exports more of a product than what you would otherwise expect. In this case, the measure has been adopted to measure "competitiveness" through the employment each activity generates.

5.4. High-level econometrics to explore dynamics behind intensity of sporting activity

One of the key contributions of exploratory descriptive data analysis is to detect interesting patterns or associations in the data available to us. For one, our analysis of the data in Mexico has allowed us to discover in which areas throughout the country are more intensive in sports activities, specifically in professional and recreation sports.

However, these analyses are limited in the sense that we cannot fully tease out the main reasons behind why some places are more intensive than others in these activities nor can we control through mere observation for other factors that may be driving the associations we see on the data. For instance, it might be the case that we find a strong association between large cities and intensity in professional sports activities. We might at first be tempted to associate such a relationship to the importance of being "connected" to large urban centers and being able to leverage the infrastructure they have to offer. Alternatively, it might be the case that the factor truly driving the relationship is population size.

It is at this stage of the analytical process when regression analysis becomes useful. By accounting for variables that might be driving our initial correlation results, we can better disentangle what factors are individually associated with intensity in different sports activities. In this sense, we proceeded to generate several regression analyses with the data available for Mexico, which are explained in more detail below.

For the purpose of this analysis, we considered whether a municipality is intensive or not in core professional, core recreation and core sports as a whole through the data of the Mexican Social Security Administration (IMSS). Later on, we included a number of municipal-level descriptive variables from the Mexican Population Census in order to be able to understand the characteristics of the places intensive in sports activities[8]. This decision implied an emphasis on core sports as opposed to sports periphery throughout our study which is due to the fact that the former category is considered a more accurate measure of primarily sports-related industries whereas the latter is more about other activities that also perform activities for the sports sector. Namely, as was mentioned in Chapter 1. , sports periphery is a category that incorporates things as sports manufacturing, which arguable incorporates more capabilities required in the manufacturing sector than what would be required from a sports sector per se. Given this concern, incorporating the analysis of intensity in sports periphery might be

[8] We began our analysis with a full incorporation of variables we had access to, after which our analysis kept only those who were statistically significant for some of our analyses. Such was the case for variables that measured different subcomponents of another aggregate variable (i.e. several variables for types of homicides was available, but they did not provide further explanatory power than an aggregate homicide indicator).

subject to significant confounding factors of what truly drives a place to become intensive in sports as opposed to other activities that have a tangential relation to the sports economy.

There are significant considerations when it comes to the appropriate level of geographic aggregation in which to focus our analysis. In the case of Mexico, this analysis could be done at the state, metropolitan area, or municipal level. In the case of states, their few numbers make this level of aggregation less suitable for regression analysis given its limited number of observations and also are too aggregate to be informative of what specific regions are truly intensive in sports activities. On the other hand, municipalities provide a much larger dataset with which to work, and allows us to perform a more granular study of the regions that are more intensive in sports. Nevertheless, this comes at a cost, since it may be the case that some municipalities may be intensive in sports only because they may host the headquarters or branches of big sports businesses that truly operate on a neighboring municipality. Namely, it could be the case that a metropolitan area is as a whole intensive in sports but the way those sports activities are distributed de jure and de facto across municipalities might generate a confounding effect. Similarly to the case of states, keeping only observations for metropolitan statistical areas (MSAs), would force us to give up observations on all municipalities that do not belong to a given MSA. As a result, we decided to keep our analysis at the municipal level, whilst accounting for whether a given municipality belongs to an MSA or not (the more detailed specification for this exercise is mentioned below).

We were able to measure intensity of sports through two different mechanisms: employment and production[9]. Namely, those municipalities that employed a higher portion of their workforce on sports activities than the share of sports employees at the national level are then deemed to be sports-intensive municipalities. The same exercise is performed for production values, which provided a useful exercise for those cases where activities might be particularly sensitive to certain types of measurement avenues for intensity, which was suggested by our exploratory analysis of the data in Section 3, after which we found that the ratio of between professional sports and leisure sports can vary dramatically depending on how intensity is being measured.

To perform our analysis, we decided to specify a probit model, in which we try to determine the relationship between municipal-level characteristics of a place and the probability that a given sports sector is intensive or not[10]. Given

[9] We were able to measure intensity also based on: added value, wages, etc. But the characteristics of the dataset we deemed more appropriate to focus on the data that is most accurately reported through the IMSS.

[10] More specifically, we define being intensive by establishing whether a given sports industry (core sports, core professional sports or core leisure sports) have an RCA larger than 1. Namely, whether any of these sector classifications exhibit either a share of total employment level or total production added value in a municipality that is larger to the share said sector has at the national level in Mexico.

the limitations of a probit model for the interpretation of its coefficients, we limit our analysis to the sign of each coefficient as an indicator of the direction of the relationship that each explanatory variable has with respect to the probability of a given sector being intensive. The full set of variables used for our analysis, alongside the set of regression specifications we hereafter explain can be found in Appendix 2.B.

When performing our regression analysis of the intensity of core sports at the municipal level in terms of employment, we found that municipalities that are intensive in core sports activities are also more likely to be unequal, larger in terms of workforce, earn lower salaries on average, but also more educated. Similarly, we found that closeness to an airport is strongly associated with higher intensity in core sports activities[11]. Interestingly, the fact that a municipality belongs or not to an MSA was not a statistical significant factor in our analysis[12].

The particular specification of our regression analysis was performed through a probit model. This specification analyzes the relationship between different geographic unit variables and the probability of that geographic area being

Regrettably, it was not possible to study these relationships in more detail for the specific case of professional core sports; given the data limitations (less than 10% of the observations from the core sports activities belong to professional core sports, therefore leaving us with too few observations to successfully perform a regression analysis. This suggests that most for the relationships we observed for the core sports sector hold for the recreation core sports sector as well, which our analysis confirmed.

Table 2.1. Relationship results of regression analysis between intensity in core sports by employment at the municipal level and municipal-level characteristics

[11] This analysis was also performed for sports periphery, but as we mentioned previously on this document, sports periphery is a classification that likely picks up economic activities from many different industries that adds significant noise to the interpretation of our regression analysis.

[12] In addition, we performed a specification in which we applied municipality Fixed Effects, but given the low number of observations we obtained, it made more sense to focus our analysis on the full set of municipalities in Mexico.

	(2) Intensive in core sports (by employment)
Gini coefficient for inequality at the municipal level	+
(log10) Municipality size by employment	+
(log10) Municipality wage (by effective worker)*	-
Minimum distance (in Km) to airport	-
Minimum distance (in Km) to border	+
Education years, average by municipality	+
Average distance to paved road within municipality	+
Average homicides rate per municipality	-
Municipality average elevation (mt)	+

** This variable stands for the average wage paid by establishments by municipality.*

When performing the same exercise as before but measuring intensity through production value instead of employment, our results hold for most relationships with the exception of the average age of establishments in each municipality and a geographic control variable[13]. In addition, the relationship observed around the average distance to a paved road within a municipality might have to do with decisions of where to establish a business, which might take into account how accessible is it for their employees to reach their business. A difference in the coefficient with the case of production value could suggest that high value-generating businesses do not take such variables into account. Nevertheless, one must be cautious in making assumptions around the interpretation behind observed relationships without proper accounting for potential confounding factors behind the relationships we observe on the regression analysis.

Table 2.2. Relationship results of regression analysis between intensity in core sports by production at the municipal level and municipal-level characteristics

	(8) Intensive in core sports (by production)

[13] This result might suggest that establishments that operate on core recreational sports (such as gyms) are younger than average establishments dedicated to other establishments. This metrics of age were constructed based on historical data from IMSS.

Gini coefficient for inequality at the municipal level	+
(log10) Municipality size by employment	+
(log10) Municipality wage (by effective worker)	-
Minimum distance (in Km) to airport	-
Minimum distance (in Km) to border	+
Education years, average by municipality	+
Average homicides rate per municipality	+
Average age of establishments by municipality	-
Average slope (degrees) by municipality	+

These results fall in line with our previous correlation exercises, which suggested that the sports sector is associated with workers who are more educated on average but earn lower wages (which were also associated with less full-time jobs). Therefore, the regression analysis has provided a further robustness check to our initial exploratory analysis of the data we have access to. But also, this exercise allowed us to expand the level of comprehension we had behind what characteristics are associated with a municipality intensive in sports activities.

In this sense, we found that given the relationships found with geographical components of a municipality, levels of inequality, as well as violence indicators; our research has led to the formulation of new questions. Namely, it is worth exploring at a greater length the channels through which many of these relationships play out. That is, how is inequality playing a role in the intensity of sports might be worth exploring. Similarly, the possibility of a proper identification strategy that could allow us to better infer the causal relationship between intensity in sports and other characteristics of municipalities might provide an invaluable contribution to the questions policymakers ask in terms of developing a given sector of the economy.

In other cases, we see relationships between explanatory variables that change, depending on how we measure intensity in the core sports world, as is the case of the average homicides rate per municipality. One could argue that employment is indeed negatively associated with homicides given that places that are more intensive in terms of employment could be deemed as more prosperous and in turn less prone to crime problems, while the opposite could be true of industrial areas that might be intensive in terms of production. However, as expressed above in the document, one must be careful on the interpretation of such relations. Specifically, having access to a more nuanced data at the zip code level for crime (as is available in the United States) alongside its evolution over time and through exogenous events that may have materialized in given localities could provide us with a firmer ground to understand what might drive these seemingly contradictory relationships we

observe. Similarly, there are also relations which might not have an intuitive story behind the sign and significance they have on each regression, as is the case for the average age of establishments by municipality. Nevertheless, the case for quality disaggregated data over time holds just as well in these instances.

It is important to mention nonetheless that this study can only bring relationships and associations to our attention, but not causality claims can be made out of this study. That is, we now know some of the characteristics of the municipalities that are competitive in sports activities, however, we cannot yet know whether municipalities closer to an airport are more likely to attract and develop a more significant sports sector or whether an airport is actually built nearby in a municipality because of its intensity in sports in the first place.

There are several limitations to this exercise. Among them, we must acknowledge the lack of periodical data in a way that would allow us to analyze this in more detail. As we narrow the scope of our analysis of any dataset, by looking at levels of economic activity for specific industries, in specific locations, the amount of observations we are left with is dramatically reduced. As a result, it becomes more challenging to perform regression analyses at such high levels of disaggregation. Therefore we only were able to perform highly aggregated analyses that are far from the ideal. This is the reason why having access to quality data, that is both comprehensive of the economy and periodical enough to analyze the evolution of the economy over time is essential to better understand the characteristics of the places that are competitive in a given economic activity. Furthermore, periodical data would better equipped us to understand overarching trends that might be unobservable with only one year of data and also allow us to have enough observations when analyzing the intersection of economic activities in particular locations.

For this reason, we restricted to analysis to Mexican municipalities. Many could argue that a state-level or a metropolitan-level analysis might be more accurate when a strong professional sports presence in a municipality is a better indicative of an entire metropolitan area's intensity of sports than just a single municipality's. Given that we have very few observations for specific categories of sports activities, it is challenging to develop a regression analysis where we focused on such a few states or metropolitan areas. For this reason, we chose a regression specification where we could study all municipalities in Mexico and yet account for whether each of those municipalities belonged to a metropolitan area or not. Having access to periodical data and a wide array of additional potential explanatory variables could eventually allow us to fully account for variations in intensity in different sports activities within each municipality[14].

[14] By applying MSA fixed effects into our regression specification.

Similarly, there are arguable many other dimensions of a municipality's profile that are not being accounted for on our explicative variable list, which might suggest that other components, such as cultural, health, or connectedness of aspects of municipalities might also be playing a role in the intensity of sectors. As a result, a desirable addition to this project would be to complete the current list of explanatory variables available to account for this.

Section 6. Concluding Thoughts and Potential Avenues for Future Work

This chapter presented a framework through which to study the sports economy. Based on the classification of the sports sector suggested on the previous chapter, this section presents an estimate of the magnitude, embeddedness in the economy, and strategic value of the sports sector for the Mexican economy.

We found through our analysis that sports activities show strong connections to more than one sector as opposed to peripheral sectors, which are identified by those who hold few connections to the rest of the industries in the economy. In terms of their size, we see that fitness and recreation sports as whole is substantially larger than professional sports. Fitness and recreation sports are above the median size of industries for the economy while professional sports are consistently below average under different definitions of size.

When comparing sports activities between themselves, we see that fitness and recreation sports are about many small establishments with a large collective contribution while professional sports is about very few large ones with a large individual contribution. These measures of size also vary greatly at the state level, with the dispersion being much larger in the case of the sports economic activities. In terms of remuneration, we see that that the sports sector employees earn higher wages than those of the overall employed population.

When performing our regression analysis of the intensity of core sports at the municipal level in terms of employment, we found that municipalities that are intensive in core sports activities are also more likely to be unequal, larger in terms of workforce, earn lower salaries on average, but also more educated. Similarly, we found that closeness to an airport is strongly associated with higher intensity in core sports activities. Interestingly, the fact that a municipality belongs or not to a MSA was not a statistical significant factor in our analysis.

In conclusion, given the extensive challenges to an in-depth study of a sector of the economy, it is essential to have access to better and more periodical data that can be standardized with datasets from different countries. Similarly, this exercise made a strong case for a more classification of the sports economy and a provided a better understanding of the relationships we find in each different type of sports activity and what these relationships can imply in each case.

Lastly, there are some exercises available that could further extend the work hereby presented that could add additional dimensions to the analysis of the sports economy. An analysis of co-consumption and input similarity between the sports sector (and within its sub-classifications) and other activities could further enrich the analysis of how this sector relates to the rest of the economy. Even though several challenges remain to a comprehensive study of the sports sector without falling prey to the caveats outlined in Chapter 1. , the recent availability of more detailed data is making possible to develop valuable frameworks to classify and analyze any sector in an economy with an unprecedented level of detail and rigor. This work is intended as empirical contributions in the long chain of efforts to further improve the way in which we think of the sports economy and its relationship to the rest of the economy.

References

Audretsch, D. and M.P. Feldman. 2003. "Knowledge Spillovers and the Geography of Innovation" in J. Vernon Henderson and Jacque Thisse, editors. *Handbook of Urban and Regional Economics: Cities and Geography*, Volume 4. Amsterdam: North Holland Publishing. pp. 2713-2739.

Balassa, B. 1965. "Trade Liberalisation and 'Revealed' Comparative Advantage." *The Manchester School*, 33: 99–123.

Glaeser EL, Gottlieb JD. 2009.*The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States*. No. w14806. National Bureau of Economic Research.

Haltiwanger, John and Jarmin, Ron S. and Miranda, Javier, 2010. "Who Creates Jobs? Small vs. Large vs. Young". *US Census Bureau Center for Economic Studies Paper* No. CES-WP- 10-17. August 1.

Hausmann, R., Hidalgo, C. A., Bustos, S., Coscia, M., Simoes, A., & Yıldırım, M. A.. 2013. *The Atlas of Economic Complexity: Mapping Paths to Prosperity*. MIT Press.

Hausmann, Ricardo & Rodrik, Dani, 2003. "Economic development as self-discovery," Journal of Development Economics, Elsevier, vol. 72(2), pages 603-633, December.

Krugman, Paul. 1991. "Increasing Returns and Economic Geography". *Journal of Political Economy*, Vol. 99, no. 3: 483-499. DOI: 10.1086/261763

McCann P 2001, Urban and Regional Economics, Oxford University Press, Oxford.

Neffke, Frank, and Henning, Martin S. 2013. "Skill relatedness and firm diversification." *Strategic Management Journal*, 34(3), 297-316.

Neffke, Frank, and Henning, Martin S. 2008. "Revealed Relatedness: Mapping Industry Space," *Papers in Evolutionary Economic Geography* (PEEG)0819, Utrecht University, Section of Economic Geography, revised Dec 2008.

CHAPTER 3. INTENSITY OF CORE SPORTS ACTIVITIES ACROSS EUROPE

Introduction

As described in Chapter 4. , past attempts to understand the sports economy have been constrained by a number of data limitations. For instance, many of these accounts use revenues when value added measures would be more appropriate. Similarly, many accounts use top-down definitions that result in double counting and an inflated estimate of the size of the sports economy. More importantly, past accounts have focused most of their efforts estimating the overarching size of the sports economy. Constrained by aggregated data that groups a wide range of sports-related economic activities together, they primarily discuss the size of the sports-related economic activity. Their focus on answering the question of "How big?" conceals substantial differences between activities. Core sports activities, such as professional sports teams, behave very differently than activities, like sporting goods manufacturing that are closer to the periphery of the sports economy. Likewise, there are even important differences amongst core sports activities. Professional sports teams are very different than fitness facilities, and they might differ in different respects.

Chapter 2. demonstrates that, when detailed, disaggregated data are available, the possibilities to analyze and understand the sports are greatly increased. For instance, we were able to conduct skills-based analyses, magnitude analyses, employment characterizations, geographic distribution analyses, and calculations of the intensity of sports activities. The sector disaggregation, spatial disaggregation, and database complementarity present in the Mexico data therefore enables a more detailed and nuanced understanding of sports and sports-related economic activity.

Data with characteristics similar to those found in Mexico are few and far between. We have, unfortunately, been unable to completely escape such data limitations. However, we have compiled and analyzed a large array of employment data on sports-related economic activities in Europe. In the chapter that follows, we describe our analyses of these data and the findings produced. Section 1 begins with a discussion of employment in sports and an explanation of why we chose this variable for our analyses. Section 2 provides an overview of the data used in this chapter, particularly focusing on the differences between it and the Mexico data discussed in Chapter 2. . It also describes the methodology we use. We analyze these data using one of two related measures to understand the intensity of sports-related activities across different geographic areas in countries. We also construct measures at the level of a single country in order to compare across entire economies. At the international level, we adopt the revealed comparative advantage (RCA) measure that Balassa (1965) first developed to analyze international trade. Within specific countries, however, we use a population-adjusted version of the RCA measure known as RPOP. Section 3 presents the most relevant

findings and Section 4 discusses their limitations. Section 5 concludes with the lessons learned and avenues for future research. While there are limitations on these analyses, they can give policymakers a better understanding of the distribution and concentration of sports across space. Such information can serve as an important input for sports-related investment decisions and other sports-related policies.

Section 1. Employment in Sports

Significant work has already been done with respect to employment in the sports economy. The EU Working Group on Sports and Economics, discussed in Chapter 1. above, devoted a large portion of their 2012 report to sports employment. The report finds that the United Kingdom, Cyprus, Malta, and Greece are the countries with the largest share of national employment in core sports. More than 0.40% of the workforce in each of these countries is employed in the study's statistical definition, which we refer to as core sports (Vilnius 2012 report). In the United Kingdom, 0.61% of national employment is in core sports. Overall, the report indicates that 659,770 people or 0.31% of employment across the European Union is in core sports. Of course, when one considers the other, more expansive definitions of sports that the working group employs, these shares are far higher. Austria's share, for instance, jumps from 0.36% according to the core sports sectors to 5.38% according to the broad definition. One of the primary policy implications of the working group's report was the finding that sports is a relatively labor-intensive industry. It observes that the share of European employment working in core sports (0.31%) is larger than the share of European gross value added in core sports (0.28%). The gap between the employment share and the value added share is even larger when one considers the narrow and broad definitions. The report concludes that "sports-related business is thus more employment intensive than average businesses as more employees are required to generate the same amount of [gross value added]" (European Commission 2013, 79). Nonetheless, we should remain cautious when considering claims associated with these broader definitions, both in the case of Vilnius and Eurostat, given the limitations outlined in Chapter 1. .

Sports employment could be far larger, however, if one considers the methodology adopted by the European-wide statistical agency Eurostat. Eurostat's methodology considers the working group's statistical definition (or the core sports cluster) in addition to any sports-related occupation codes in the International Standard Classification of Occupations (ISCO) for employees who work outside the core sports sectors. Sports instructors working in schools would be considered by Eurostat since their occupation is sports-related, but not by the EU working group since their industry isn't part of the statistical definition. While the EU working group observed European core sports employment to be just over 650,000 in 2011, the Eurostat's methodology increases the number to almost 1.5 million employees (Eurostat 2016). They report that it has grown further to 1,562,8000 in 2014. When Eurostat's approach is used, the countries with the largest shares of sports

employment are Estonia, Denmark, Spain, Finland, and the United Kingdom. More than 1% of employment in each of these countries is sports-related. Eurostat's report also provides a sense of the characteristics of the sports labor force, concluding that it is far younger than the general European labor force. 36% of employees working in sports are between the ages of 15 and 29, but only 19% of the overall workforce is that young (Eurostat 2016).

In this chapter, we build upon these reports and other existing analyses. We use employment data from a variety of countries and sources to characterize the relative size, or intensity, of the sports sector in different sub national areas. We use employment data in part because the sports economy has been characterized as a labor-intensive industry. As the EU working group and Eurostat reports demonstrate, we have found that sports-related activities are a substantial source of employment for their economies and potentially higher than their share of value added.

However, employment data is also advantageous for another reason: data quality. We find to be collected in a much more reliable, comparable and consistent manner as well with a higher level of industry and spatial disaggregation. Such characteristics allow us to produce indicators and generate comparisons across and within countries.

Section 2. Data Requirements and Methodology

The employment data disaggregated by industry and geography comes from three types of sources: business registries (administrative data) or surveys, labor force surveys, and censuses. The scope and collection methods of these three types are different. Business registries or surveys usually consider employees and owners, often excluding some sectors such as public or nonprofit establishments. Alternatively, labor force surveys and population censuses focus on households and individuals, thereby including all sectors and even the self-employed. While labor force surveys and population censuses allow for an in-depth look at the characteristics or quality of employment in the sports economy, they also have a higher degree of error. This error comes from the fact that workers self-report their industry. Furthermore, surveys are drawn from a sample of the population and therefore their representativeness is limited to how the sample was designed. The issue of representativeness is of particular concern when analyzing highly disaggregated data in terms of geographic location or industry, as is the case with this particular exercise on core sports activities. To limit the concern over these issues and maximize the comparability of the measures, we prioritized obtaining data on employees that was derived from business registries or administrative data sources. Business surveys were the next most preferred type. For some countries, these business statistics do not have the necessary disaggregation to identify the sports sector (or did not survey the sector). We therefore referred to the other sources mentioned above. See Appendix 3.A for a more detailed description of the data sources and the specific characteristics of each dataset.

All of the data were either downloaded from the Internet for free or purchased from national statistical agencies and subsequently mailed. Ultimately, we collected subnational, disaggregated data for eleven countries: Austria, Belgium, the Czech Republic, Finland, France, Germany, Italy, the Netherlands, Portugal, Spain and Switzerland. For each of the other countries in Europe, we also use the national level data collected by Eurostat. We limit the analysis to the most recent year in each dataset, but the exercise could be carried out over multiple years to see how the measures evolve over time.

For our purposes, the datasets contained three important pieces of information. First, each observation contained information on the geographic area of a given observation. In Belgium, for instance, the geographic areas in question were the country's forty-three *arrondissements*, administrative areas that group several municipalities. In Spain, the areas were the fifty-three *provincias*. Geographic disaggregation, as explained above, is generally advantageous because it enables one to more closely examine the distribution of activities. It should be noted, that disaggregation could occasionally be misleading if cities or urban agglomerations are separated into distinct units, which might not be representative of the way the local urban economy operates. Second, each observation contains information on the industry classifications. Here, we focus on the three-digit industry level, thereby clustering the core sports activities described in Chapter 1. together as one group. The corresponding codes are "926" for NACE revision 1 and "931" for NACE revision 2. Finally, each observation contains information on the level of employment in the given industry in the area in question.

It is worth emphasizing that we are focusing here only on the core sports activities described in Chapter 1. , not on other sports-related activities or occupations in non-sports activities. This is advantageous because we believe that more peripheral sports-related activities might behave very differently. The drawback, however, is that we are still unable to disentangle activities within these two three-digit classifications. Professional sports teams and fitness facilities are grouped together within these classifications, but it is the case that these activities also have different types of linkages with the rest of the economy. Unfortunately, data constraints prevent us from further disaggregating these industries below the three-digit codes. Therefore, while we want to emphasize that we are referring to only core sports activities in this chapter, we also want to highlight that it is difficult to characterize precisely what type of sports, within that category, are causing a given region to have a high RCA or RPOP indicator. Understanding the underlying core sports activities requires either more disaggregated data or further qualitative analysis.

With this data, we construct one of two indicators of the intensity of sports-related economic activity in a given geographic area. At the international level, we build the RCA measure first developed by Balassa (1965) to illustrate the relative advantage or disadvantage a given country has in the export of a certain good. We can express the RCA formally as the following equation:

$$RCA_{cp} = \frac{X_{cp}}{\sum_c X_{cp}} / \frac{\sum_p X_{cp}}{\sum_{c,p} X_{cp}} \qquad (1)$$

In the equation above, X_{cp} represents the employment of industry p in a given subnational geographic area c. More simply, an RCA can be explained as the share of a given industry in a specific area divided by the share of that industry in a larger, more encompassing area. Consider the Brazilian export of soybeans as an example. In 2010, soybeans represented 0.35% of world trade with total exports of USD 42 billion. Of this total, Brazil exported nearly USD 11 billion. Since Brazil's total exports for that year were USD 140 billion, soybeans accounted for 7.8% of Brazil's exports. Because 7.8 divided by 0.35 is 22, one can say that Brazil exports 22 times its "fair share" of soybean exports. We can therefore say that Brazil has a high "revealed comparative advantage" (RCA) in soybeans. The same calculation can be done to estimate intensity for a multitude of variables, rather than just exports (the variable traditionally associated with RCAs) or employment (the variable we use here).

Within specific countries, we use a population-adjusted version of the RCA indicator known as RPOP. RPOP, a population-adjusted version of the RCA measure, can be expressed formally as the following equation:

$$RPOP_{cp} = \frac{X_{cp}}{Z_c} / \frac{\sum_c X_{cp}}{\sum_c Z_c} \qquad (2)$$

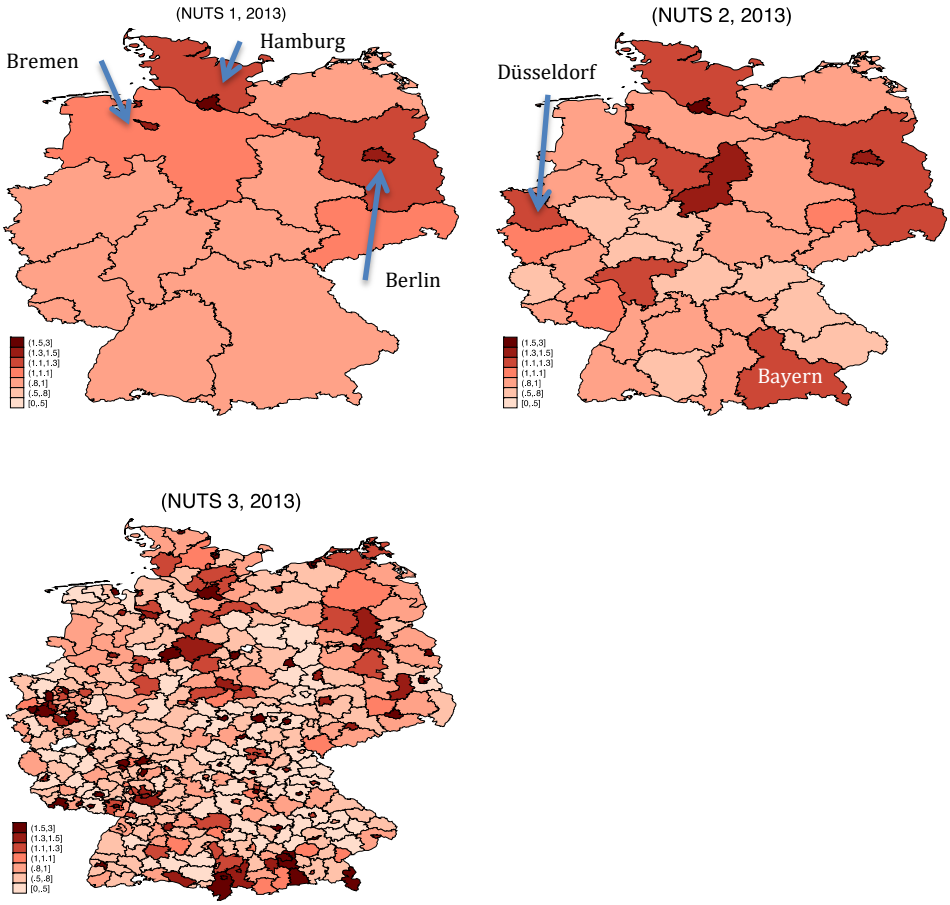
In the equation above, X_{cp} represents the employment of industry p in a given subnational geographic area c. This equation differs from the RCA equation because of the two Z terms in the numerator and the denominator where Z represents the population of the geographic area c. For the analysis in this chapter we use the RPOP measure instead of the RCA, because our observations of the sector have shown that core sports activities are correlated with overall population. The more people in a location, the more likely that professional clubs or fitness facilities will be there too. We believed it was therefore appropriate to account for population.

Section 3. Comparing the Intensity of Core Sports

Appendix 3.A displays the RPOP and RCA measures constructed for the 28 EU Members States and intra-country measures for 11 European countries. Many of the subnational measures confirm prior assumptions about the intensity of core sports activities. We observe that, in some countries, the areas with the highest indicators are those with the largest populations. Consider the measures in Germany (Figure 3.1). We observe that Hamburg, Berlin and Bremen are the regions with the largest intensity measures and are by far the most populous when considering inhabitants per kilometers. At the regional level (NUTS 2), the three states mentioned above and the two most populous regions —Düsseldorf and Bayern— also are among the areas with the highest RPOP values. At the district level (NUTS 3) most of the higher RPOP values coincide with urban areas. The apparent correlation between large populations and high core sports intensity makes intuitive sense. Core sports

activities, whether they are professional teams or gyms, are associated with larger populations.

Figure 3.1. RPOP of sports activities in Germany, NUTS 1, 2 and 3 (2013)



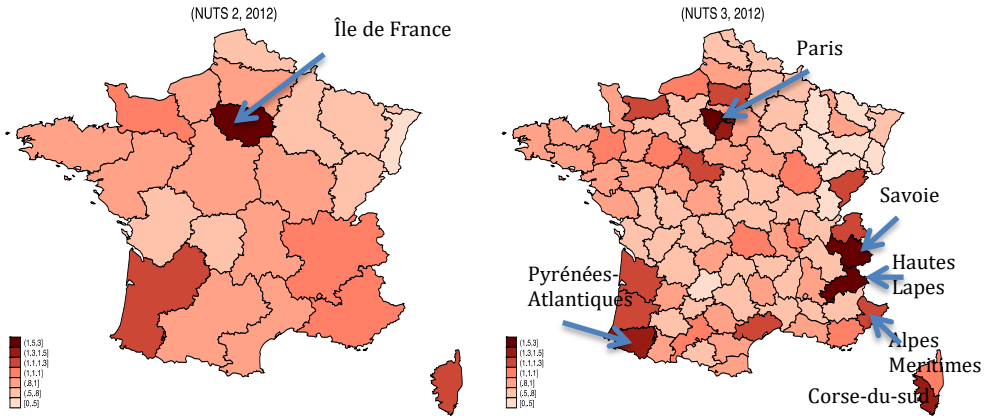
Source: Staff calculation based on data from Federal Statistical Office and the statistical Offices of the Länder

Many countries, however, don't have that same correlation. In these countries, the areas with the highest core sports intensity are generally those with many resorts. They are regions with popular beaches or well-known mountains that attract significant numbers of fitness-related activities. Here, the intensity measure is capturing the fitness facilities and gyms represented within the core sports cluster rather than professional stadiums and clubs. France is an excellent example.

While the IÎle de France as a region (NUTS 2) or Paris as a district (NUTS 3) have the second highest intensity measure and is the most populous region and district of the country, other less populous areas stand out in terms of their employment in core sports (Figure 3.2). For example, the Savoie district has the largest intensity measure, almost three times more than its "fair share" of core sports employment. However, it is a relatively small area in terms of total population (420 thousand in a country of over 65 million people). Situated on the French Alps, it has some of the best ski resorts in the world. Albertville, host of the 1992 Winter Olympics, is located in this district. Hautes-Alpes and

Corse-du-Sud, the other districts outside the Île de France region with an RPOP over 1.5, both have less than 150 thousand in population)

Figure 3.2. RPOP of sports activities in France, NUTS 2 and 3 (2012)

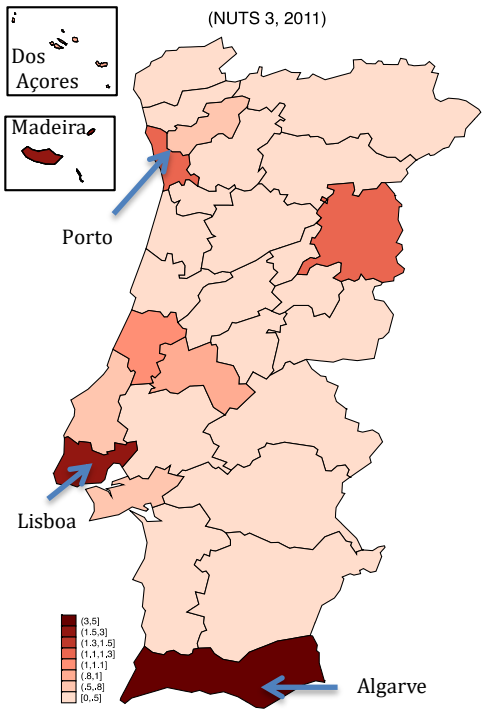


Source: *Staff calculation based on data from INSEE*

The rankings in Portugal confirm both the both observations made in Germany as well as those made in France (Figure 3.3). Algarve and Madeira are the Portuguese sub-regions (NUTS 3) with the two highest intensity measures. As in France, neither one of these regions are particularly large in terms of population. Madeira is only the thirteenth most populous region in Portugal (of thirty regions). Algarve has slightly more people and is the 6th most populous. Like the Savoie, however, Algarve and Madeira are areas with significant numbers of resorts. Algarve is located on the southwestern tip of the Iberian Peninsula and possesses an ideal climate for golf. Its many golf courses frequently host some of Europe's largest tournaments. Likewise, Madeira is a Portuguese archipelago in the Atlantic Ocean with an economy that features numerous professional sports. While the region is only a collection of small islands, it features three of the eighteen football clubs that competed in the 2015 Portuguese Liga. One of these clubs, C.S. Maritimo, has a rich tradition of producing football legends like Cristiano Ronaldo and Pepe.

Although the resort areas at the top of the Portuguese rankings create natural comparisons to the French rankings, the rest of the rankings in Portugal also illustrate the trend that was previously discussed with respect to Germany. The most populous subregions of Portugal, Lisboa and Porto, both feature prominent cities with numerous professional sports teams in addition to large resort economies. Accordingly, Portugal demonstrates that the importance of understanding a country's context for analyzing its sports economy. Core sports activities cluster for different reasons in different places. At an observational level it appears that in some cases, like Germany, core sports activities tend to cluster around population centers. For others, like France, resort areas may play an important role. Finally, in still other countries like Portugal, there may be a mixture of combination of both effects at play. Again, this just serves a cursory look at intensity trends that require further examination.

Figure 3.3. RPOP of sports activities in Portugal, NUTS 3 (2011)

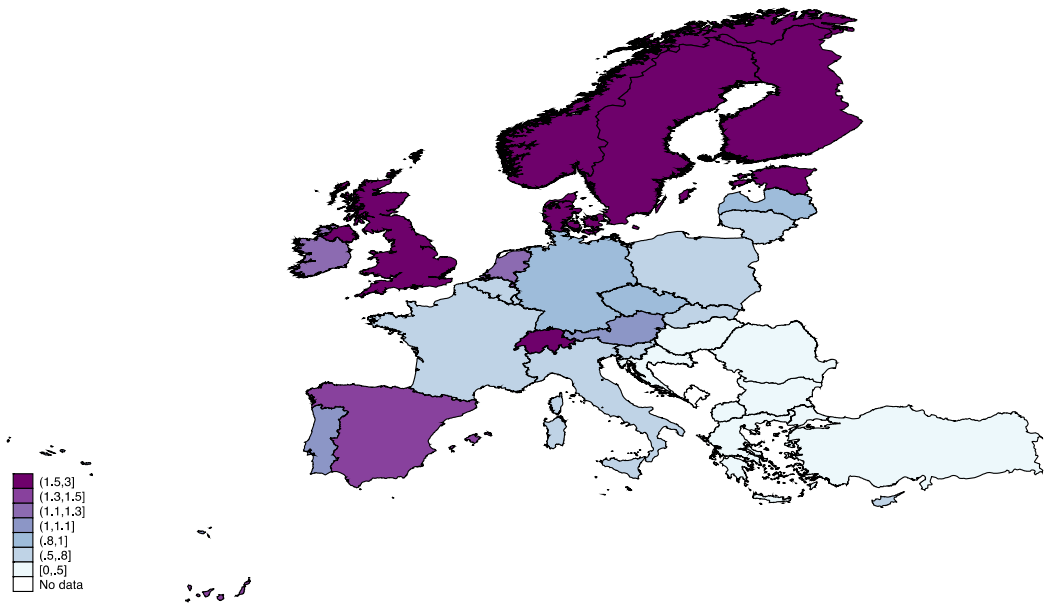


Source: *Staff calculation based on data from INE*

The importance of context is further borne out at the international level. Understanding the sports intensity of an entire country requires one to disentangle the rankings and challenge pre-existing assumptions. For instance, when people consider European sports, they immediately think about European football, the most popular spectator sport in Europe by far. European football is dominated by the leagues in five countries; the United Kingdom, Spain, Germany, Italy, and France. It is interesting, therefore, that the countries with an RPOP above one[15] don't correspond to these five large football leagues in Europe. Two of these countries, the United Kingdom and Spain, have high sports intensity according to the RPOP measure, but the other three prominent leagues don't. There are two potential reasons for the disparity. First, countries that are successful in professional sports like football are likely also successful and competitive in many other economic activities. These countries likely have large, diverse economies in which professional sports play a relatively small role, thereby diminishing the size of the RPOP. This could explain for instance why Germany's RPOP is below one. Second, it is important to recall that our construction of the RPOP measure includes other types of core sports like fitness facilities instead of just professional spectator sports. These recreational sport activities may be more intensive in labor and therefore countries with many of them may have a higher RPOP. The significant ski sector in Switzerland is likely an example of how employment-intensive recreational sports can boost a country's RPOP.

Figure 3.4. RPOP of sports activities in the EU-28 Member States (2014)

[15] The range above which a place is considered to be particularly intensive on a given activity



Source: Own calculations based on EU-LFS

Moreover, what is even more remarkable about the countries with RPOP measures above one is their diversity in terms of size, geography, and economic activity. Some are large countries, while others are small. Some have warm climates with the potential of significant resorts, but others are in far colder areas of northern Europe. It is difficult to draw any direct lessons from these countries, as they are such a diverse group. One reason that our methodology indicates that such a diverse group is highly sports-intensive is that, as described in Chapter 1. , the three-digit industry code that we employ actually bundles together a rather diverse array of economic activity. It groups large professional sports teams with smaller fitness facilities and gyms. Spectator sports may play a larger role in some of these economies (like the United Kingdom), while fitness facilities and sports-related resorts may be more important in others (like Portugal). Because the RPOP measures were calculated at the three-digit level, we are unable to identify such nuances. The clustering of these different core sports activities into one industry code is one of the limitations of our approach. We discuss some of the other limitations below.

Section 4. Limitations to the Approach

The results described in Section 2 are insightful, but it is important to highlight the limitations of both the data we used and the methodology we implemented. To start, the data that we used was narrower in some respects than was used in the Eurostat work described above. Most notably, Eurostat was able to pool data for more countries over more years. Such breadth in terms of geography and time is insightful. While we didn't cover as many countries or such a long a period in time, our data collection efforts focused on geographic disaggregation within a smaller group of countries and years. This means that, although our findings offer new insights with respect to

geographic disaggregation, they are more limited in terms of comparisons across time and country.

Additionally, Eurostat considered industry and occupation data, meaning that they included sports-related occupations in non-sports industry codes as part of sports employment. Even though this provides a more accurate picture of overall sports related employment, we chose to focus on industry level data, meaning that our employment measures don't consider sports-related occupations outside of the core sports sectors described in Chapter 1. . The main rationale for this was that this type of employment might be driven by forces behind the performance of those non-sports industry codes, which would increase complexity when trying to understand underlying dynamics behind RCA and RPOP trends in the core sports sector. However, future analyses might want to attempt including this type of data.

In addition to the data we used, the methodology we implemented faced some constraints. To start, a given geographic area may score low on the RPOP indicator for several reasons. Some geographic areas may possess very large, diverse economies benefitting from a wide range of activities. Even if sports play a large role in terms of employment in these economies, it could be outweighed by even larger industries like manufacturing or services. Areas with large, diverse economies would have a large denominator in the RPOP equation shown above, thereby decreasing the value of the overall indicator. Such an effect would occur even if the magnitude of the sports economy is very large itself.

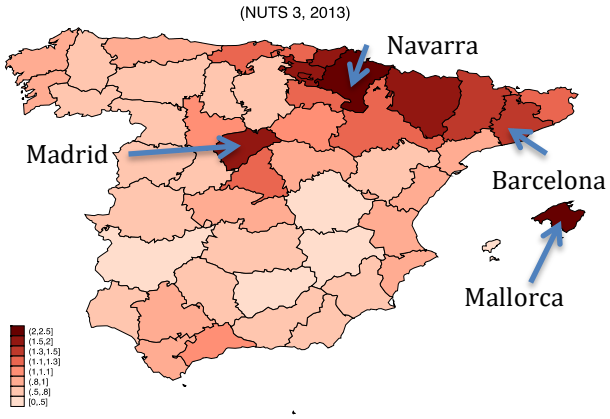
Conversely, a given geographic area may also score high on the RPOP indicator for reasons unrelated to the sports economy. High RPOP values may occur if there are relatively few economic activities in the area other than sports. The analysis in Chapter 2. suggests that sports-related activities are relatively ubiquitous in the sense that they occur widely throughout any country. Most communities have a desire to either watch or participate in sporting activities, so they appear in a large number of places. The ubiquity of sports means that, while they appear in areas with large economies, they also appear in areas with much smaller economies that are far more limited in terms of their economic diversity. In such areas, sports may be one of only a handful of industries. As a result, the RPOP indicator could suggest that the intensity of sports is very high in the region. In this case, however, the indicator would be hiding the fact that the RPOP is high because few industries other than sports are present.

Perhaps even more importantly, a given geographic area may score low on the RPOP indicator for reasons unrelated to the suitability of the area for sports. It shouldn't be interpreted to suggest that an economy in question is particularly ripe to support further development of sports-related activities. Regions may score high on the RPOP indicator, but the market for sports-related firms may be saturated. Similarly, the measure doesn't indicate that the sports economy in the area in question is privately or socially desirable. The area in question could have, for instance, many sports-related firms but they could be financially unsound. Likewise, simply because a given area has

few sports-related firms doesn't mean that increasing the presence of the sports economy is the best way to promote development in that region. Instead, the RPOP measure simply provides a sense of the importance of sports in a given economy.

Consider the cases of the Spanish provinces of Barcelona, Madrid, and Navarra as illustrative examples of the limitations of the RPOP indicator. One might normally assume that the Barcelona and Madrid regions would score higher than a small region like Navarra. Not only are the cities of Barcelona and Madrid home to prominent football clubs like Real Madrid FC, FC Barcelona, and Atlético Madrid, but their large populations also support a high number of gyms, fitness facilities, and associated sports activities. One might think that Barcelona, a coastal city with beautiful beaches and a comfortable climate, would have significant opportunities for outdoor sports. In contrast, Navarra is a far smaller region in terms of population and economic production. However, of the fifty-two provinces in Spain, Navarra scores the highest in terms of the intensity of sports-related economic activity. It has an RPOP value of 2.00. With values of 1.30 and 1.15, Barcelona and Madrid score high, but well below Navarra. Their RPOP measures are lower than that of Navarra for some of the reasons described above. One of the reasons Navarra's indicator is higher derives from the fact that the economies of Barcelona and Madrid are very large and diverse. Since Navarra's economy is small and sports are ubiquitous, it naturally has a higher measure. There may be, however, other reasons relating to factors specific to the Navarra that make it especially suited for sports. The northern part of the region, for instance, is dominated by the Pyrenees Mountains. However, at this stage, it is impossible to exactly disentangle what these reasons might be without further inspection of the specific context of the region.

Figure 3.5. RPOP of sports activities in Spain, NUTS 3 (2013)



Source: Calculations based on data from the Ministerio de Empleo y Seguridad Social de España

The case of these three Spanish provinces indicates that, while informative, the RPOP indicator is a limited measure. The value of the indicator - and the corresponding ranking - are a snapshot of the intensity of sports-related economic activity in a region and can help one understand in what areas the sports economy has a relatively larger presence. However, RPOP doesn't tell the complete story of an area's sports economy. Fully understanding the

reason why a given geographic area scores high or low on the RPOP indicator requires a more holistic depiction that more closely resembles the analysis described in Section 1. Despite these limitations, the RPOP measure can serve as an important input for those wishing to understand the distribution of the sports economy across countries or regions.

Section 5. Applying the RPOP or RCA Measures

Despite these limitations, the RPOP or RCA indicators are still a highly useful measure. They offer new insights that were previously not considered in the work of Eurostat, EOSE, and the EU Working Group on Sports and Economics, and the European Observatoire of Sports. Most notably, our analyses consider sub national sports employment, thereby allowing one to uncover and disentangle the distribution of the sports employment across regions and cities within one country. Previous work only addressed sports at the national level. These insights related to disaggregation are illustrative of the important themes of asking "How different?" that was discussed in Chapter 1. . Additionally, we introduce the RPOP and RCA indicators, concepts adopted from international economics, as methods to better describe the intensity of an area's sports economy. These measures provide a more nuanced approach than statistics on the sheer magnitude of sports employment. Based on the RPOP and RCA indicators, one can conclude that areas with a RPOP or RCA over 1 are generally areas where spectator sports or sports-related resort are important parts of the economy. For instance, Savoie in France or Algarve in Portugal have large, sports-related resorts. While these conclusions may not be entirely surprising for those who are familiar with the country, they are insightful for external observers of the economy in question.

Using these indicators, external observers can gain a better understanding of the distribution of sports-related activities across a given geographic area. For instance, suppose an external stakeholder wanted was looking to support the development of a resort specializing in sports-related fitness activities. One might think that a beach city would be a natural area to locate his project, but selecting between different beach towns could prove difficult. Comparing the intensity of existing core sports activities like fitness facilities and gyms could provide a sense for the investor as to what regions already possess the labor force or associated facilities to make his investment worthwhile and cost effective. Existing sports-related activities could suggest that the necessary capabilities to host additional sports-related activities like these are already present in the area. The RPOP or RCA measures of the intensity of sports-related activity are helpful means, through which these external investors or organizations could explore these factors,

Chapter 1. highlights the difficulty of obtaining data that allows one to rigorously account for the size of the sports economy, while Chapter 2. describes the analyses that one could perform if that sort of data was more widely available. Based on these findings, Chapter 3. has attempted to produce a rigorous indicator that allows one to compare sports-related economic

activities within and across countries. We have sought to transparently describe the data we used, the methodology we implemented, and the limitations that we believe continue to constrain the measure. The measure has a number of constraints, most of which prevent it from being used in a purely prescriptive manner. That said, the indicator is a useful descriptive measure for indicating the presence or absence of sports-related economic activity. We have described some surprising insights that these rankings of core sports intensity have revealed. Furthermore, we have discussed how external observers like investors or international organizations could benefit from this type of measure.

Future avenues of research could seek to combine our approach with others, most notably the methodology used by Eurostat. Such work could apply the RPOP or RCA measures sub nationally in a larger group of countries and across a longer period of time. Eurostat, for instance, could replicate our subnational analyses for all of the countries that they investigated at the national level. Following these applications, other research could uncover the factors that cause a given city or region to have a high RPOP or RCA indicator. Other research could also construct similar RPOP or RCA measures based on production, value added, or other variables besides employment. Moreover, future research could strive to further disentangle the employment and productive spillovers associated with the sports sector. In other words, further research could answer questions like the following: What factors drive the appearance and growth of core sports activities? What causes core sports activities to co-locate? What are the effects for surrounding communities when core sports activities do cluster? How does the quality of employment vary across regions and levels of sports intensity?. While it would require significantly disaggregated data, such work would provide important insights as to the ability of cities and regions to develop new sports economies. With these questions in mind, Chapter 4. and Chapter 5. turn to some of the policy implications raised by the discussion in the first three chapters.

References

Balassa, B. 1965. "Trade Liberalisation and 'Revealed' Comparative Advantage." *The Manchester School*, 33: 99–123.

Eurostat. 2016 "Employment in sport." Last modified March 2. ISSN 2443-8219. Accessed March 25, 2016, http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_in_sport

SportsEconAustria et al. 2012. "Study on the Contribution of Sport to Economic Growth and Employment in the EU." Study commissioned by the European Commission, Directorate-General Education and Culture.Accessed March 28, 2016. http://ec.europa.eu/sport/library/studies/study-contribution-spors-economic-growth-final-rpt.pdf

European Commission. 2013. "Definition of Sport- Version 2.0 ("Vilnius Definition 2.0") according to CAP 2008." *Commission of the European Communities.* Accessed March 28, 2016.

http://ec.europa.eu/eurostat/documents/6921402/0/Vilnius+Definition+Sport+CPA2008+official+2013_09_19.pdf/30838d11-01ea-431f-8112-50786e187c1c.

Part II. Understanding Policy Implications of Sports

Part II builds upon the narrative of the previous section by focusing more on the intersection of sports and governance. Chapter 4. uses an ends-means approach to governance to construct a guide for policymakers to reflect on their sports policy regimes. It offers the idea of a dashboard through which policymakers can understand whether or not they are meeting their objectives and the means through which they can make progress. Chapter 5. narrows the discussion to more closely investigate a single sports policy: the decision to bid for or host a mega-event. It reviews the literature on the subject and directly addresses each of the mechanisms through which these competitions could have an economic impact on their hosts.

We intend for these two chapters to offer more actionable ideas for the sports community. In light of the data difficulties described in the first three chapters, policymaking with respect to sports can be difficult. We believe that a structured, evidence-based approach can help policymakers more clearly target their intended ends with the most appropriate means. We believe that the frameworks and insights we present are valuable for informing the decisions of governments set on constructing a sports policy regime. Shifting the thinking of these decision makers could improve the rigor and effectiveness of sports governance.

CHAPTER 4. GOVERNANCE AND THE CHALLENGE OF DEVELOPMENT THROUGH SPORTS

Introduction

Prior chapters aim to provide an empirical view into the sports economy. This proves to be a difficult task, given the many definitions of 'sports' and data deficiencies and differences in the sports domain (between contexts and over time) discussed in these chapters. The limited view we do offer provides interesting information about the sports sector, however: it shows, for instance, that different contexts have differently sized sports sectors, and that sports activities overlap with other parts of the economy. This kind of information is useful for policymakers in governments trying to promote sports activities and use sports to advance the cause of broad-based social and economic development.

This chapter is written with these policymakers in mind. It intends to offer a guide such agents can use in constructing sports policies focused on achieving development goals (what we call *development through sports*[16]), and discusses ways in which these policymakers can employ empirical evidence to inform such policies.

The chapter draws on the concept of 'governance' to structure its discussion. Taking a principal-agent approach to the topic, governance is used here to refer to the exercise of authority, by one set of agents, on behalf of another set of agents, to achieve specific objectives. Building on such definition, the chapter looks at the way governmental bodies engage in sports when acting to further the interests of citizens, most notably using political and executive authority to promote social and economic development. This focus on governance for development *through* sports (asking why and how governments use authority to promote sports for broader social and economic development objectives[17]) is different from *governance of sports* (which focuses on how governments and other bodies exercise authority to control

[16] This terminology comes from Houlihan and White, who identify the "tension between *development through sport* (with the emphasis on social objectives and sport as a tool for human development) and *development of sport* (where sport was valued for its own sake)" (Houlihan & White 2002, 4).

[17] The chapter relates to a vibrant literature on this topic, which investigates the reasons and ways governments support the sports sector (classic and recent studies in this literature include Adams and Harris (2014), Gerretsenand Rosentraub (2015), Grix and Carmichael (2012), Grix (2015), Hallman and Petry (2013), Houlihan (2002, 2005, 2016), Houlihan and White (2002), Hylton (2013), Koski and Lämsä (2015), Schulenkorf and Adair (2013), and Vuori et al. (1995).

and manage sports activities themselves), which others explore in detail but we will not discuss.[18]

The chapter has five main sections. A first section defines what we mean by 'governance' in the context of this study. It describes an ends-means approach to the topic—where we emphasize understanding the goals of governance policy (or governance ends) and then thinking about the ways governments try to achieve such goals (the governance means). The discussion concludes by asking what the governance ends and means are in a development through sports agenda. The question is expanded to ask whether one can use empirical evidence to reflect on such ends and means. One sees this, for instance, in the use of 'governance indicators' and 'governance dashboards' in the international development domain. A second section details the research method we used to address these questions. This mixed method approach started by building case studies of sports policy interventions in various national and sub-national governments to obtain a perspective on what these policies tend to involve (across space and time). It then expanded into an analysis of sports policies in a broad set of national and sub-national governments to identify common *development through sport* ends and means. Finally, it involved experimentation with selected data sources to show how the ends and means might be presented in indicators and dashboards—to offer evidence-based windows into development through sports policy regimes.

Based on this research, sections three and four discuss the governance ends and means commonly pursued and employed by governments in this kind of policy process. The sections identify three common ends (or goals)—inclusion, economic growth, and health—and a host of common means—like the provision of sports facilities, organized activities, training support, financial incentives, and more—used in fostering a development through sports agenda. Data are used from local authorities in England to show the difficulties of building indicators reflecting such policy agendas, but also to illustrate the potential value of evidence-based dashboards of these policy regimes. It needs to be stated that this work is more descriptive than analytical, showing how data can be used to provide an evidence-based perspective on this domain rather than formally testing hypotheses about the relationship between specific policy means and ends. In this regard, the work is more indicative of potential applications rather than prescriptive. A conclusion summarizes the discussion and presents a model for a potential dashboard of governance in a development through sports policy agenda.

[18] Work on the *governance of sports* assesses the way international entities like FIFA and the IOC work with national and local governmental bodies to oversee, regulate, and otherwise manage sports like football and the Olympic movement, using authority to create and implement rules on behalf of those involved in the sport itself. See, for instance Forster (2006), Geeraert (2013), and Misener (2014).

Section 1. Defining Governance in this Context

Governance is a ubiquitous term in modern parlance. It has been used in many contexts, including the international development arena (Kaufman et al. 2006) and the sports sector (Andrews and Harrington 2016; Geeraert 2013). Its many uses recently caused the prominent political scientist Frank Fukuyama to ask 'What is Governance?' (Fukuyama 2013). The question relates to the many definitions of governance that exist and the many governance indicators that are now in place. The variations in content one sees in these indicators suggest the collective community of governance observers still do not agree on what is being (or should be) measured. This kind of variation makes it vital to define what we mean by governance in the context of this chapter. This is especially important given that we reflect on the topic at the intersection of two literatures—development and sports.

The lack of clarity about 'what governance is' should probably not be surprising given the relative newness of the concept. Google's ngram viewer shows that the word's use (in published books) emerged in only the last three decades, having limited play before then. Interestingly, the word's use started growing in American English more than a decade before the same happened in British English, Spanish, German, or French.[19] The concept is thus newer outside of the USA, and is being refashioned as it travels across new domains and encounters new applications. The overlapping sports-development arena is one of these.

One of the most prominent uses of the term—at least in the literature on economic development—refers to governance in the nation-state as 'the exercise of civic authority by governments to influence outcomes of broad civic interest' (see Andrews et al. 2010, which builds on Kaufmann et al. 1999, 1; Michalski et al. 2001, 9). This understanding builds upon the literature on publicly traded companies, where corporate governance is similarly defined. Tirole (2001, 4), for instance, defines corporate governance as "the design of institutions that induce or force management to internalize the welfare of stakeholders." Consider the basic theoretical elements of governance implied in this definition: It focuses on (i) how mechanisms regulate (ii) the way that authority is exercised by one set of agents (iii) who act on behalf of a group of principals (iv) with the goal of maximizing the welfare of these principals.

Combining these elements, we present governance as the processes by which specific agents exercise delegated authority to affect the welfare of the principals allocating the authority. *Put simply, and in context of governmental bodies involved in development, governance involves governments using authority derived from or allocated by citizens to produce, facilitate and influence outcomes of interest to citizens (and particularly those outcomes that require collective engagement).*

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[19]https://books.google.com/ngrams/graph?content=governance&year_start=1900&year_end=2000&corpus=18&smoothing=3&share=&direct_url=t1%3B%2Cgovernance%3B%2Cc0

This definition has parallels in political science and public management literatures. Kooiman's (2003, 4) characterization of governing, for example, points to "the totality of interactions, in which public and private actors participate, aimed at solving societal problems or creating societal opportunities." Similarly, Hill and Lynn (2004, 4) describe public sector governance as "Regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable the provision of publicly supported goods and services through associations with agents in public and private sectors." The idea of delegated authority emerges across these definitions, as does the focus on outcomes as the purpose of delegated authority. (Consider the use of language like 'maximizing stakeholder welfare', 'solving societal problems or creating societal opportunities', and ensuring the 'provision of publicly supported goods and services'). In the governmental context, one is dealing with citizens (as principals) allocating civic authority to governments (as agents) with the explicit goal of maximizing various kinds of social welfare that require pooled resources and collective engagement (as the outcomes).

In this study, we are particularly interested in the decisions governments make about promoting sports for broader development purposes. A governance approach to such question causes us to ask a two-part question: Why would governments exercise their delegated authority to promote sports for development? How would governments exercise such authority in this direction?

1.1. Going beyond 'good governance' to specified ends and relevant means

Governments can use their delegated authority in many ways, such as promoting (or otherwise engaging with) sports or whatever area of society is chosen for influence. Authority could be used to garner and allocate resources, or to build capacities (human and physical), or to regulate behavior via laws or force, or to convene and coordinate private and nonprofit agents around specific objectives, and more. These are the means of political and administrative governance, and these means matter. Effective means can facilitate effective engagements by governments in their social and economic contexts, promoting improved welfare and development of citizens. In contrast, less effective means could facilitate less than effective engagement and failed policies, leading to poor welfare and insufficient development for citizens. The means in place could also foster incentives for accountability and responsiveness in public organizations, or they could facilitate weak accountability and even corruption by governments.

The quality of governance cannot be assessed by simply looking at the means (processes or mechanisms in place or even on the specifics of how authority is exercised), however. While governance is influenced by what Tirole (2001, 4) calls "institutions that induce or force management to internalize the welfare of stakeholders", particular sets of institutional forms or governance means do not necessarily and always *indicate or reflect* good governance better than

others. Similarly, while it is easy to agree with Hill and Lynn (2004, 4) that governance systems comprise "Regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable" service provision, it is not clear that the presence or absence of particular processes and mechanisms necessarily *indicates* whether governance is good or bad.

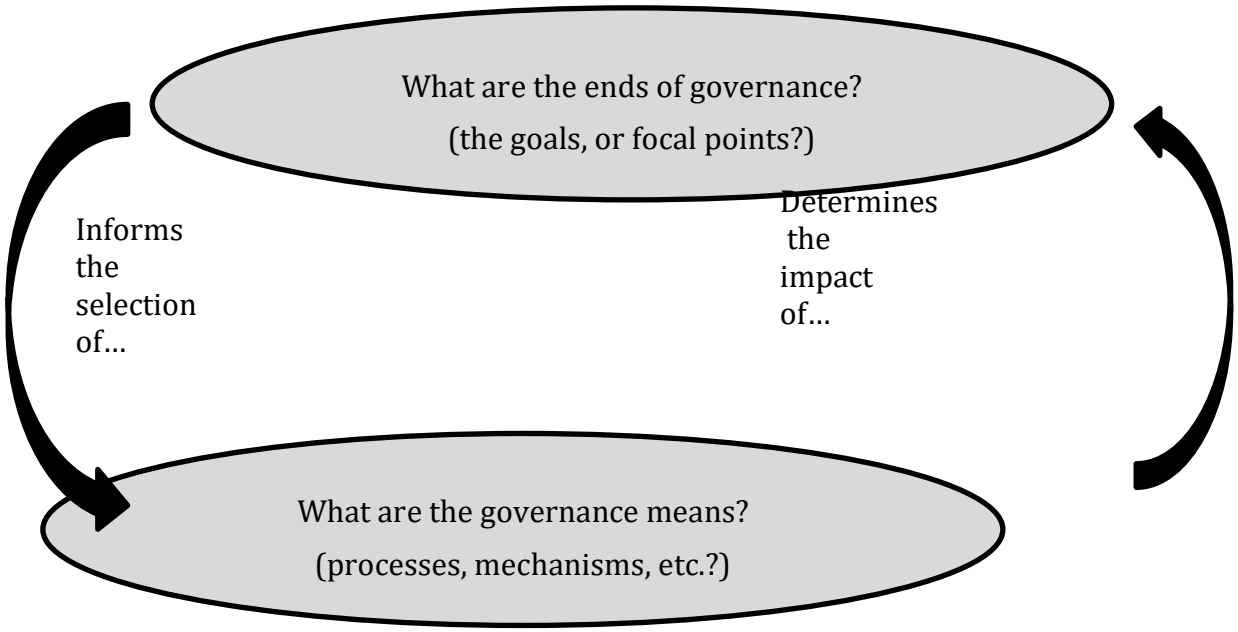
Governance means (institutions, processes, and such) that ascribe and distribute and shape authority can vary across countries and sectors for legitimate, contextual reasons, most notably reflecting the different roles and understandings of government in countries (Andrews 2010; Grindle 2004).[20] It is spurious, therefore, to identify one set of means as generally 'good'. Instead, we argue here that governance is 'good' when authority is exercised through means that produce the ends citizens require in specific contexts and at specific times. Some means might be more effective than others in facilitating specified outcomes in specific contexts, but these can only be identified after considering the ends that governments are authorized to pursue or to facilitate by and for citizens (directly or indirectly) and then thinking about what it takes to achieve such. The burden of governance functionality (ends) must lead thinking about governance forms (means). In other words, one needs to think about what governments *should do* before one thinks about what governments *should look like*.

We call this *an ends-means approach to looking at governance*. It is inspired in part by Bovaird and Löffler (2003, 316), who define governance as, "the ways in which stakeholders interact with each other in order to influence the outcomes of public policies." It has also been inspired by Fukuyama (2013, 5) who argues that, "governance is about the performance of agents in carrying out the wishes of principals … [which means that] governance is thus about execution." The work is also influenced by the governance work being done at the Hertie School in Berlin. The school's 2013 Governance Report notes that, "governance is about how well those who are legitimately entrusted to do so manage public problems" (Anheier and List 2013, 1). The same report (Anheier and List 2013, 1) presents some examples of governance as problem solving: "Does the international community make progress in regulating financial markets or combatting poverty? Does the EU succeed in reducing sovereign debt problems? Do national and local governments respond adequately to public debt? Do corporate leaders manage businesses in economically and socially responsible ways? And does civil society contribute to public problem solving?" The report argues that, "A system of good governance is one that deals with these and other matters of public concern—be they education or health care, national security or infrastructure policies, the environment or labour markets—in effective, efficient ways."

[20] The same point is made in this website advertising research findings from the 2014 Hertie School Governance Report. The website is titled, 'Administrative capacities vary immensely within the EU'. http://www.hertie-school.org/mediaandevents/press/news/news-details/article/administrative-capacities-vary-immensely-within-the-eu-1/

These are the kinds of questions that should drive any work on governance in the development realm and in respect of sports and the sports sector. Concerns about ends must drive concerns about means, not the other way around (as shown in Figure 4.1). This is because governance is about ensuring governments adopt the means needed to produce the ends—outcomes and associated functionality—demanded and needed by citizens (whether citizens allocate authority to the state through a democratic process or cede authority through less democratic means).

Figure 4.1. An ends-means approach to governance, sports and development



Source: Authors' representation, based on Andrews (2014).

Given such an approach, the key questions we are interested in for this chapter are simple:

- What are the ends that drive governments when pursuing development through sport (the overarching goals they are focused on achieving)?
- What are the means that governments use when pursuing development through sport (the processes, mechanisms, and such that governments are typically authorized to use in such policy regimes)?

Answers to these questions could help policymakers in governments better choose why and how they structure their development through sport agendas. We aim to go beyond conceptual discussion, however, as most of these policymakers are less interested in answers 'in principle' than they are 'in practice'. Governance is, after all, a practical process and needs to be informed

by practical realities and evidence. Therefore, we ask a third question before moving on:

- Is it possible to provide an evidence-based view into the progress of a *development through sport* policy regime, and assess the quality of governance in it?

The question could be better phrased, but simply asks whether it is possible to use data in reflecting on the quality of governance in this conversation. Indicators and dashboards are commonly used in other applications of 'governance' in development to inform countries and localities on how well they are being governed, where they have governance weaknesses, and more (Kaufmann et al. 1999; Hertie School 2013). Indicators are single-number representations of governance conditions where a figure is used to show the quality of different countries' performance relative to others. Consider, for instance, the relative performance of various countries on 'voice and accountability,' one aspect of national governance assessed in the Worldwide Governance Indicators (WGIs) (shown in Table 4.1). The indicators are useful to compare performance over time and place, but offer little more detail as to why performance varies or what can be done to improve such. Dashboards, on the other hand, offer multi-number representations of governance conditions—that show the relative performance or quality of a wide variety of objectives and/or processes (as in Table 4.2 below, of South Africa's relative performance—benchmarked against other African countries—on a host of different governance ends and means (See Andrews 2014)). This kind of dashboard is more detailed than the indicator, and offers a less comparative window into performance. However it is arguably more useful for countries trying to develop policy (given that they can see where they are performing better or worse than comparators).

Table 4.1. Select countries' performance on Voice and Accountability (min= - 2.5; max = + 2.5)

	Argentina	Austria	Bhutan	Botswana	Brazil
2004	0.34	1.46	-0.92	0.73	0.37
2009	0.24	1.42	-0.51	0.42	0.49
2014	0.29	1.41	-0.14	0.44	0.41

Source: Worldwide Governance Indicators.

Table 4.2. South Africa's governance dashboard: compared with select international averages

Defense, Public Safety, Law and Order	Public Infrastructure	Human Development and Environmental Management	Economic Progress and Adaptation	Participation, Rights, and Mobility
Conflict and threats	Trade/transport infrastructure	Citizens have sufficient food	Citizens enjoy stable prices	Citizens (esp. children) registration
Secure borders	Water/sanitation infrastructure	Children are learning	Employment	Economic participation
Citizens feel safe	Power infrastructure	Reading and skills levels	Debt levels	Inequality

Defense, Public Safety, Law and Order	Public Infrastructure	Human Development and Environmental Management	Economic Progress and Adaptation	Participation, Rights, and Mobility
Citizens and violent crime	Communications infrastructure	Under five/maternal health	Affordable financing available	Children's rights and protection
Citizens and road safety	Housing infrastructure	Systems to address health needs	Economic growth	Citizens enjoy fundamental rights
Property rights are protected	Urban infrastructure	Air and water pollution	Trade	Citizens freedom to move
Civil and criminal system	Rural infrastructure	Biodiversity concerns	Diversification/ innovation	Foreigners entry and movement

Human Resource Capacity and Management	Financial Resource Capacity/Collection	Spending and Policy Implementation	Integrity, Accountability, and Confidence
HR numbers	Finance sufficiency, fiscal contract	Policy clarity	Laws and regulations clarity, consistency
HR transparency	Tax process quality	Public spending clarity and gaps	Laws and regulations gaps
HR skill appropriateness	Tax policy quality	Public bills paid, contracts upheld	Anticorruption legislation gaps
HR motivation	Citizens tax respect	Public spending procurement quality	Administrative process gaps
HR autonomy and learning	Debt process quality	Public spending irregularities checked	Citizens hold governments accountable
HR citizens respect and impression	Government creditworthiness	Data collection	Checks and balances
HR citizens trust stakeholders	Transparency over revenues from rents	Government innovation	Citizen confidence

Comparatively weak	Comparatively below avge.	Comparatively average	Comparatively above avge.	Comparatively strong	Insufficient data

Source: Authors analysis based on Andrews (2014).

The question we ask is whether it is possible to create governance-like indicators or dashboards to use in informing practical policies related to *development through sports*?

Section 2. Our Research Strategy

We started this research in an exploratory fashion, examining the evolution of sports policies over time in selected national and sub-national governments. This work led to the creation of detailed draft case studies for England, France, Spain, Barcelona, and Madrid, Manchester and Sheffield. We also studied Durban and Cape Town in the run up to the 2010 soccer World Cup. These case studies gave us an initial qualitative view on the reasons why governments pursue sports policies and the mechanisms governments employ in these policies. This view helped us establish basic hypotheses about governance ends and means in the sector.

We built on this qualitative view by building a less detailed but more expansive database of sports policies in 40 national and 40 sub-national governments.[21] Through this, we aimed to get a more quantitative perspective of the common governmental ends and means in the domain. The research process involved gathering and then examining sports policy documents from the governments (including summary documents produced by entities like the European Union and United Nations, and research reports and articles that synthesized the sports policies). We recorded descriptions of policy goals and mechanisms reflected in these documents, and then identified different categories of these goals and tools in each government. This led to the determination of 'common ends' and 'common means' in the governance of development through sports. The analysis was conducted by one researcher working manually, so there are potential limits to the reliability of the findings (given that the researcher may have missed some important points or categorized language in a biased manner). We are not too concerned about the possibility of these limits, however, especially as the research was intended to be exploratory and descriptive. Moreover the emergent patterns are extremely prominent and we have sufficient analytical evidence to support them.

This analysis provided a narrative about why and how governments pursue sports policy. This was the basic ends-means narrative of governance in the development through sports agenda we sought, given the initial set of questions asked earlier. Given the narrative, we began looking for data to use in constructing an evidence-based method to inform such agendas. We settled on data from English local authorities, and employed these data to demonstrate both the difficulties in identifying a single-number indicator and the potential of building a multi-number dashboard.

Section 3. The Governance 'Ends' in a Development Through Sports Agenda

Organized sport is a relatively new concept, having emerged *en mass* in only the past hundred and fifty years in Europe. Government engagement in sport is even more recent, with most national governments in the (currently)

[21] The national government sample included Argentina, Belgium, Brazil, Bulgaria, Czech Republic, England, Estonia, Ethiopia, Finland, France, Germany, Ghana, Hungary, Ireland, Latvia, Lebanon, Malta, Mexico, Mozambique, the Netherlands, Norway, Palau, Palestine, Papua New Guinea, Peru, Samoa, Scotland, Sierra Leone, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Switzerland, Tanzania, Thailand, Uganda, Vanuatu, Wales, and Zambia. The sub-national government sample included Bangalore, Bangkok, Barcelona, Birmingham, Bogota, Boston, Buenos Aires, Cape Town, Christchurch, Delhi, Dubai (included as a city-state), Durban, Florida, Geneva, Genoa, Hague, Johannesburg, Liverpool, Los Angeles, Madrid, Manchester, Manitoba, Maputo, Marseille, Melbourne, Mexico City, Munich, Nairobi, Plymouth (UK), Porto, Porto Alegre, Portsmouth (UK), Qingdao, Rio, San Juan, Shandong, Sheffield, Sindh State, Taipei City Government, and the Western Cape Province. We have not referenced all of the policy documents used in analysis for these 80 governments, but the documents were all produced after 2006 (in the ten years prior to the current study) and are thus contemporary.

developed nations only introducing formal sports policies or sports-related ministries, departments or agencies in about the 1960s. Many of these governments began engaging in sports as part of the expansion of the welfare state and public sectors in this period. These governments were responding to social and economic problems related to the global and regional growth experience at that time, and saw sports as a way of addressing various broader concerns. These concerns were varied, but tended to center on maintaining social and political cohesion and identity—key challenges in what were rapidly growing and changing economies—or fostering economic growth itself.

It is interesting and important to note that governments did not start engaging in sport 'for sport's sake' in any context we examined. Governments typically saw sports as an area through which they could achieve other objectives. These objectives are hardly static or even shared across governments, however, with our work showing significant differences in focus across governments at any point in time. Some governments speak of 'sport for all' at the same time that others speak of 'elite sports' for instance. Some governments emphasize social inclusion as a 'goal' of sports policy at the same time that others emphasize using sport to attract new business interests. Beyond these inter-jurisdictional differences, we also saw major inter-temporal variation in the focus of national sports policies in all the cases reviewed.

The United Kingdom provides possibly the best example of this. The country's sport policies emerged in the 1960s as the people were struggling with challenges associated with economic growth and social expansion (Green 2006, Houlihan and Lindsay 2012, Jefferys 2015). Sport was used as a mechanism for inclusion, and to foster local identity. The 1970s and 1980s were characterized by economic downturn, and significant social upheaval. Sports policy at the time was focused (largely) on social control. Since then, there have been emphases on elite sports development, sports as a mechanism for local economic growth, sport and health, and (most recently) sports for the empowerment of girls. The variation in sports policy goals across jurisdiction and time suggests that sports is used as a vehicle for addressing the issue of the day, at least at the national level. One should therefore expect the focus of sports policies (or what we call the *governance ends* associated with sports) to look different across places and periods. One would expect it to vary at a rate that correlates with the policy dynamism/disruption in different contexts (where some countries change policy directions more regularly than others, either because of shocks to the context or because of shifts in political or conceptual sensibilities).

3.1. Common goals, despite inter-temporal and inter-jurisdictional variation

Even with the observed variation in sports policy goals, we wondered if there were any goals (or ends) that governments typically and consistently target through sports. To assess this, and as already described, we assessed the

policy goals embedded in sports-related policies in a sample of 40 national and 40 sub-national governments. For instance, we examined Latvia's Sports Policy Guidelines, where objectives were "to develop individuals who are both healthy physically and mentally, and who united in national awareness, are capable of fulfilling life's and work duties in their family, society and State." Two key 'governance ends' related to sports policy were identified in such description: health and social inclusion and identity (including community engagement). A similar sports policy in the Western Cape government (a province in South Africa) suggests that policy 'uses sport' to "improve the health and well-being of the nation" and to "maximize access" to society, "create a wining nation", "attract tourists", "promote peace and development" and "communicate environmental messages." Out of such a list, we draw four primary sports policy goals, related to improvements in health, social inclusion and identity, growth (through tourism and other impacts), and environmental awareness.

The study pointed to three common *development through sports* goals, which stand out as the main 'ends' emphasized when sport is 'used as a tool' to advance other goals: social inclusion, economic growth, and health. We identified six other less dominant 'development through sports' goal areas, and a 'sport for sport's sake' category (where we combined all references to support for individual athletes or teams in global competitions, for instance).[22] Table 4.3 synthesizes data on the frequency of references to the dominant three goals areas, across the 80 governments. The table is followed by descriptions of all three goal areas.

Table 4.3. Common *development through sports* goal areas, or 'governance ends'

Government level (number of entities represented)	% governments with some focus on Social Inclusion through Sports	% governments with some focus on Economic Growth through sports	% governments with some focus on Health through sports
National (40)	70%	57.5%	100%

[22] The additional 'development through sports' goal areas were environmental awareness and sustainable development, urban regeneration, diplomacy (and foreign aid), peace and reconciliation, crime and juvenile delinquency, and education. These were less dominant than the three shown in the table, but are referenced in various areas of the broader literature for further reference (See, for instance, Gratton and Henry (2002) and Jones (2001) on urban regeneration, for instance, and Nichols (2010) on sport and crime). The 'sport for sport's sake' category included all references to support for elite sport where the focus was on ensuring competitiveness on the field (in the court). Interestingly, a vast majority of national governments emphasized this objective in their policies but fewer sub-national governments had such emphasis. We believe that the 'sport for sport's sake' focus at national level is actually more about ensuring that a country identifies itself as successful (which is part of the 'inclusion' goal) and enjoys a reputation as a sporting hub (which could be related to the 'economic growth' goal) and where citizens are motivated to participate in sport (related to the 'health' goal).

Sub-national (40)	80%	75%	100%

Source and notes: Authors' analysis, drawing on sports-related policy documents in 40 national, and 40 sub-national governments. Documents were collected online, from academic articles on the governments, governmental websites and websites that collated sports-related policies (like the United Nations, which does a lot of work coordinating sports policies for peace, which usually means a focus on inclusion and/or health, and the European Union, which collects sports policies for member nations and regional and local governments in member nations).

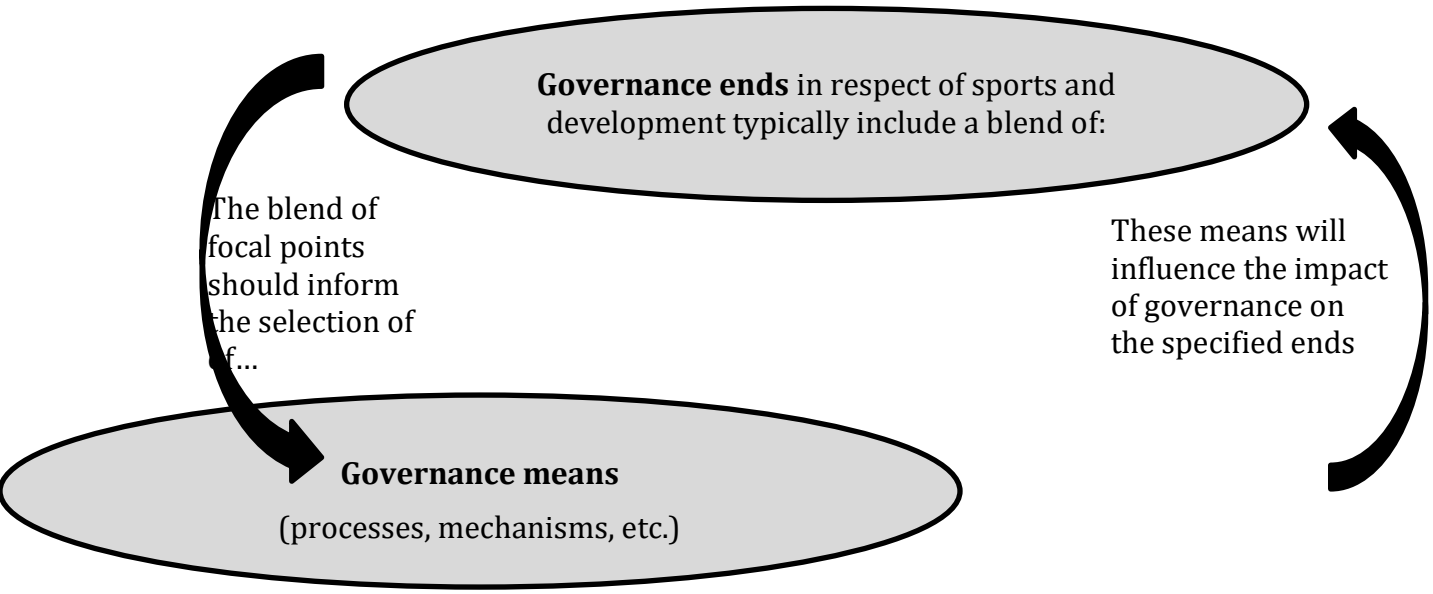
The first common goal area (or governance 'end') relates to *inclusion*, and reflects the (relatively) common focus national and sub-national governments have on using sports to foster citizen participation and engagement. This objective is also well represented as a focal point in the literature on sports policy (see, for instance, Bailey 2005, Collins 2014, Kelly 2011, McConkey et al. 2013, Murphy et al. 2008, and Vandeemeerschen et al. 2015). Different governments target different kinds of inclusion, such that it is difficult to specify exactly what this 'end' looks like across place and time. In some contexts, minority groups are targeted for inclusion (where the higher-order goal may be to foster common civic identity across minorities). In other contexts, disaffected youths may be targeted for inclusion (with a higher-order focus on promoting inclusion in these communities to address social tensions or violence). The most common inclusion focal points targeted through sports policy are, arguably, girls and women, disabled people, and seniors (often seen as those over 55). Governments typically employ policies to include these groups in society (especially in the last generation) and sports are seen as a way of fostering such inclusion.

The second common goal area relates to *growth*, and reflects the (relatively) common focus national and sub-national governments have on using sports to stimulate economic activity. This is reflected in the broader literature as well (see for instance Baade 1996; Boland and Matheson 2014; Coates and Humphreys 2003; Galily et al. 2002; Noll and Zimbalist 1997; Porter et al. 1999; Qiu et al. 2013). Once again, the specific focal points differ significantly across place and time. In some situations, for instance, governments try to promote professional sports leagues or clubs as potential vehicles for broader economic growth. They see growth potential in the economic activity of these leagues or clubs and also hope for potential spillovers from such (where having a professional sports presence may yield greater activity in areas like the hospitality industry or in broadcasting or advertising). In other situations, governments host mega-events (like the World Cup) in order to attract tourists or improve the business reputation of a region. Regardless of the specifics of the policies, we do see some common 'ends' governments emphasize when pursuing such goals. These include sports-related increases in business numbers, jobs, revenues and payrolls. Most national governments target these ends through some sports-related policy.

The third common goal area relates to *health* It reflects the common focus national and sub-national governments have on using sports to promote healthy societies, decrease the prevalence of preventable diseases, and lower health costs. It is also discussed in the broader literature (examples include

Eime et al. (2013), Khan et al. (2012), Oja et al. (2015), Pate et al. (2000), and Woods et al. (2015)). Once again, we see variations in the specific focal points of governments across space and time. Some governments may focus on specific health issues (like the prevalence of heart attacks or diabetes) when promoting a health through sports policy, for instance. Other governments may target specific population groups when promoting a health through sports policy (like seniors, where many more developed countries employ sports policies to combat diseases related to sedentary lifestyles, for instance). As with the other goal areas, there are broadly common 'ends' evident across contexts even with this variation. These tend to center on ensuring adults and children are not excessively overweight or obese, given assumed ties between sports and weight control. Figure 4.2 shows the three goal areas in an update of the ends-means governance diagram, where these are the three most common 'ends' governments focus on when promoting sports.

Figure 4.2. Common ends in an ends-means approach to governance, sports and development



Source: Authors' representation.

3.2. An evidence-based approach to governance ends in a development through sports agenda

The summary data in Table 4.3 helps to show that most governments do pursue sports policies and that these sports policies do have some prominent commonalities, at least in terms of the ends they aim to achieve. These are useful findings, and provide an initial answer to one of our research questions ('What are the ends that drive governments when pursuing development through sport?'). We followed this question up with the practical issue of measurement; can one actually employ data to assess whether these ends are being met? As discussed, this is akin to asking if one can construct an evidence-based view (through an indicator or dashboard) of the governance outcomes in the development through sports agenda.

We believe that this is possible, but faces the same limitation in addressing such challenge as was encountered in prior chapters. Data are not always available and data are seldom the same across different contexts and even time periods. As a result of this limitation, we employed a similar strategy to that in earlier chapters: we focus our analysis on one context and in one time period to demonstrate what an evidence-based approach might look like, ideally paving the way for further research in the area.

We chose English local governments as the focal point of this work, given the availability of data on sports-related policies. These data are made available through *Sport England*, an organization that sits at the nexus of public, private and community bodies engaged in sports in England. It collects some data on sports-related policies in local authorities and collates other data (collected by other entities) to produce multi-dimensional profiles of sports in different local governments.[23]

The profiles offer data that reflect on all three common 'ends' discussed in accordance with Table 4.3. In relation to 'inclusion, for instance, the profiles offer statistics showing the percentage participation of females, disabled people, and people over the age of 55. All three of these population groups are frequently targeted for inclusion in sports policies in England at the local and national level. These raw data are shown in the left columns of Table 4.4, for four local authorities (Hammersmith and Fulham (an authority in London), Plymouth, Birmingham, and Southampton). The raw data are useful in providing easily understood information for each authority. For instance readers can easily see that Hammersmith and Fulham (H+F) performs much better on two of the indicators (% female and % 55+ participation in sport), but Southampton performs best on the indicator related to % disabled participation.

The colored section to the right shows the relative performance in each category and local authority when compared with the national average (where this is the common benchmark employed in the analysis). The numbers in the table show the percentage over-or-under-performance for each authority and category, such that H+F performed 31.1% better on % female participation than the national average and 16.3 % better on % of 55+ participation, than the national average. This 'relative performance' presentation is even clearer in showing which authorities are doing well in respect of these common ends and which are not. It also shows the extent of the difference in performance (positive or negative) between the authority and the national average. We chose to color the blocks in green whenever the gap was positive and above 5 (such that the authority performed more than 5% better than the national average) and red whenever the gap was negative and lower than -5% (such that the authority performed more than 5% worse than the national average). All other blocks are orange, indicating average performance on the 'ends' in question.

[23] See the profiles homepage at http://localsportprofile.sportengland.org/Profiles.aspx

Table 4.4. Data and local authority performance in respect of sports and 'social inclusion'

Local authority	Hammersmith and Fulham	Plymouth	Birmingham	Southampton	Hammersmith and Fulham	Plymouth	Birmingham	Southampton
	Raw data				Relative performance (% above or below national average; where positive % is a 'better than average' performance)			
% female participation in sport	40.9	25.1	24.5	33.2	31.1	-19.5	-21.5	6.0
% disabled participation in sport	19.3	NA	15.7	19.7	12.2	NA	-8.7	14.5
% 55+ participation in sport	29.4	20.5	18.0	14.1	16.3	-1.9	-32.5	-13.8

Source: Authors' analysis based on selected English Local Authorities, based on Sport England data. The % participation data emanates from the Active People Survey and captures the % of people aged 16+ in the different population groups who participated in at least one session of active sport per week. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

One could think of constructing an indicator that merges the different data points in Table 4.4, creating a single-number representation of 'inclusion through sports'. This would require choosing how to weight each data point and then combining the data points according to some formula. If equal weight were given to all three dimensions and the raw data were used in calculating such an indicator, one would get 'inclusion' scores of 33.2 (H+F), 22.8 (Plymouth), 19.4 (Birmingham), and 22.3 (Southampton). These scores arguably represent an appropriate ordering of the four authorities given their raw data (where H+F undoubtedly scores better than Plymouth, which does better than Southampton, which scores above Birmingham). However they do not capture the differences shown in relative performance on all three dimensions (where Southampton performs better than Plymouth in scoring above national averages in two of three inclusion dimensions, and should thus be seen more positively).

This brief discussion reveals one of the limitations of working with indicators when reflecting on governance. Even in considering governance 'ends' (the goals of governance), one often deals with multi-dimensional concepts. Creating single-number indicators of these concepts leads to a real loss of information in such situations, and can result in arbitrary and even spurious representations of the evidence. The loss of information is particularly concerning when the goal of using evidence is to help policymakers improve their governance performance (as is the focus of the work in this chapter). Given this, we believe that it is often better to work with multi-number dashboard-type data arrangements (like that in Table 4.4) than to construct more simplified (and seemingly attractive) single-number indicators.

We also believe that the 'relative performance' data (shown to the right in Table 4.4) is more useful than the raw data (shown to the left). This is simply because the 'relative performance' data have been commonly benchmarked, helping readers and policymakers interpret performance against some

common standard. Instead of Birmingham's policymakers asking if 24.5 % female participation is good or bad, for instance, they can see that it is 21.5% below the national average (comparatively poor, given the benchmark).

We employ a similar benchmarking process in respect of variables reflecting the 'economic growth' goals of development, or economic activity goals, through sports policies in English local governments. Five such variables are calculated based on the *Sport England* local authority profiles: a measure of the sport sector business stock as a percentage of total business stock;[24] a measure of sports sector employment as a percentage of total employment;[25] a measure of the sports sector Gross Value Added (GVA) as a percentage of total Gross Value Added (GVA);[26] the proportion of sports GVA made up by non-participation GVA (predominantly from spectator-based enterprises like professional football clubs); and a measure of the growth in sport business stock (how the number of businesses in the sports sector has growth over the past three years, from 2013 to 2015). We use the data provided by Sport England, as-it-is-presented in local authority profiles, understanding that it captures a version of the sports economy that fits somewhere between our core sports and sports periphery groupings (discussed in earlier chapters). The data are comparable in England but, as was the case in prior chapters, would not be easily comparable with other contexts (given different definitions employed in data collection and analysis).

The raw data show four local authorities in which sports businesses (establishments in other vernacular) account for 0.65% to 1.01% of the overall business stock (not a large amount). The share of employment by sports enterprises is higher than the relative share of sports business stock in all four cases, however (from 1.44% to 13.98%), which suggests that sports firms employ relatively more people than many other firms. Similarly, sports GVA

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[24] These data are drawn from the census of businesses in the United Kingdom (UK Business Counts). The specific measure captures the total sporting business stock, which is difficult to fully define given accessible descriptions. It appears to be an indicator that captures more businesses than one might find in a narrow measure of the sporting business stock (as reflected in clubs and teams in USA business census or even in spectator sports in the USA).

[25] Data are drawn from Sport England's economic value of sport local model, and capture 'participation' and 'non-participation' elements of the sports sector: "Participation is the sports goods and services produced to meet demand from people participating in sports. This includes the manufacture for example of tennis racquets, footballs, golf clubs, that are used for sport; the "added value" of the shops that sell these goods, and of the services and facilities that people use to participate in sports … Non-participation covers the manufacture and retails of sports equipment and clothes that are not for sports use. It also includes the added value generated by sports clubs that generate income from selling tickets to spectators, TV income or sponsorship, the value added of sports gambling services and of businesses that produce sports television services."

[26] Data are drawn from Sport England's economic value of sport local model. According to supporting documents for this model, "Gross Value Added (GVA) is the sum of wages paid to employees and profits generated by businesses operating in the sports sector within the local area. It is a measure of economic value." The sports GVA figure captures 'participation' and 'non-participation' elements of the sports sector (as described in a prior footnote).

accounts for more total GVA than one would expect given the share of firms (from 1.21% to 8%) in all four local authorities, suggesting that these firms produce more wage and profit value than many others.

The raw data patterns here echo those found across the United Kingdom generally, where sport business stock accounts for about 1.01% of total business stock, sports employment accounts for about 1.5% of total employment, and sports GVA accounts for about 1.3% of total GVA. When the four local authorities' raw data is benchmarked against these national averages, however, one starts to see variations in experience—with some authorities exhibiting relatively strong performance (like H+F, which seems to be a sports-economy powerhouse) and others turning 'red' in reflecting negative relative performance. Birmingham and Southampton appear to be particularly poor performers, but in different ways. The former is particularly weak (relatively) in terms of its sporting business stock and sporting employment, but it is about average in terms of sporting GVA. The latter has an average sporting employment share but is quite a bit below average when considering the share of sporting sector GVA.

Table 4.5. Data and local authority performance in respect of sports and 'economic activity'

Local authority	Hammersmith and Fulham	Plymouth	Birmingham	Southampton	Hammersmith and Fulham	Plymouth	Birmingham	Southampton
	Raw data				Relative performance (% above or below national average; where positive % is a 'better than average' performance)			
Sports business stock/total (%)	0.90	1.01	0.65	0.98	-0.12	-2.1	-36.5	-4.8
Sports employment/ total (%)	13.98	1.70	1.44	1.51	162.00	11.7	-5.3	-0.5
Sports GVA/ total (%)	8.00	1.54	1.28	1.21	502.00	16.1	-3.9	-8.8
Non-participation sports GVA/ sports GVA	88.1%	28.1%	28.7%	29.1%	111.0%	-32.5%	-31.1%	-30.3%
Sports business stock growth	19.05	15.38	17.07	14.29	46.1	18.1	31.0	9.6

Source: Authors' analysis based on selected English Local Authorities, based on Sport England data. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

As with the data in Table 4.4, the statistics in Table 4.5 offer policy-makers rich information to use in thinking about how development through sport policies are working in the four local authorities. The information also helps to determine what the sporting sectors in each locality actually look like (which is important in reflecting on potential policy responses):

- The sports sector is doing exceptionally well in fostering economic activity in F+H, for instance, where it appears to comprise a small number of sporting businesses that employ relatively high numbers of people and

generate significant wages and profits. These entities are—in particular—professional football clubs (including Chelsea, Fulham, and Queens Park Rangers) and the Queens Tennis Club. The dominant role of these entities is shown in the fact that non-participation sports GVA (associated particularly with professional clubs) makes up 88% of the sports GVA in F+H.

- In contrast, non-participation sports GVA accounts for only 28% of total sports GVA in Birmingham, where the sports sector contributes less to the local economy. This is one reason why the local authority performs relatively poorly on these measures even though evidence shows a recent growth in sporting business stock. While evidence suggests that policymakers in Birmingham should try and improve this stock (given that the share of sports business stock in the city is more than 36% below national averages), any policy strategy should also focus on attracting businesses that produce non-participation sports GVA (like professional clubs and spectator-driven sports enterprises).

The evidence in Table 4.5 allows for more of these kinds of observations, which help policymakers understand their relative governance performance and how to improve it. Similar observations can be made when considering performance with respect to the 'health' end of a development through sports agenda. Table 4.6 shows the relevant data with six variables for each local authority: the adult and youth obesity %, costs of inactivity, and % active and inactive adults.[27] As with prior tables, each variable is presented in both raw form (to the left of the table) and in 'relative performance' form (to the right of the table) after being benchmarked against national averages. All four governments have mixed performance when considering the right-hand-side. H+F, for instance, performs well on adult obesity statistics, has low health costs of inactivity relative to national averages, and has relatively high levels of active adults, but has a relatively high level of youth obesity. Plymouth has relatively good performance when it comes to adult and youth obesity levels and the % inactive adults. However, it also has relatively weaker performance when it comes to the % active adults.

Table 4.6. Data and local authority performance in respect of sports and 'health'

Local authority	Hammersmith and Fulham	Plymouth	Birmingham	Southampton	Hammersmith and Fulham	Plymouth	Birmingham	Southampton
	Raw data				Relative performance (% above or below national average; where positive % is a 'better than average' performance)			
Adult obesity %	49.7	60.0	64.0	64.8	22.1	5.9	-0.3	-1.8
Youth obesity %	22.4	18.1	23.9	21.8	-17.3	5.2	-25.1	-14.1

[27] These variables are all common and self-explanatory, and drawn from the *Sport England* profiles.

Health costs of inactivity (000 pounds per 100,000 population)	1346	1831	2092	1426	25.9	-0.00	-15.1	21.5
% Active	64.2	50.9	54.1	54.8	12.6	-10.7	-5.1	-3.85
% Inactive	27.2	30.1	31.8	30.5	1.8	16.1	-14.8	-10.1

Source: Authors' analysis based on selected English Local Authorities, based on Sport England data. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

These data can help authorities understand where they have problems reaching development through sports goals, and shape subsequent policy responses. For instance, the information could prompt the city government in Plymouth to think carefully about how its sports interventions shift more people out of the 'inactive' category to the 'active' category rather than trying to address obesity. In contrast, based on this analysis, the H+F policymakers could focus on targeting youth obesity in their sports programs, given that this is a relative weakness.

It should be noted that even these preliminary analyses should be interpreted with care. Given the precarious data availability, the indicators used in each of the analyses above represent primarily the information available. These should not be construed as the 'most relevant' or 'main' indicators for these type of analyses. Other contexts, or data sources, might be able to provide a more expansive set of measures that in turn could facilitate a broader understanding of regional performance. This can serve as yet another cautionary note with respect to single-number where the issue of the representativeness of the available indicators would be compounded.

Section 4. The Governance 'Means' in a Development Through Sports Agenda

Such observations can help guide the choice of governance means in any given context and situation. In our approach, these means are the policies, processes, mechanisms, and tools governments are authorized to use on behalf of citizens. We hold that governments should select these means to further the specific ends citizens care about. Even more specifically, we argue that means should be selected or changed to address the ends where performance is lower than desired (and hence where a prioritized governance response is needed).

This is not the common approach to examining governance in development and runs counter to the thinking behind constructing single-number governance indicators. Such indicators usually blend data related to both ends and means, with a distinct bias towards presenting certain means as undisputed contributors to (and reflections of) 'good' governance. Consider, for instance, the Worldwide Governance Indicators indicator for 'voice and participation' shown in Table 4.1. Where data are fully available, this indicator

combines over twenty pieces of information related to freedom of association, freedom of the press, freedom of political choice, availability and reliability of government financial reports, freedom of political movement, and beyond.[28] Critics lament that such a large mix of topics undermines the validity of the final indicator (such that it is difficult to determine if and how it actually measures voice and accountability). Beyond this critique, the mix of what might be called 'ends' and 'means' in a single number leads to a loss of information about goals and tools. It could lead to some less-than-optimal results where means drive ends and not the other way around. For instance, a country could score well because it possesses a range of 'good governance' means—like regular government accounts—even if it performs poorly on the crucial ends—like freedom of political choice.

We posit that the identification of means should follow the discussion about ends, as done in this chapter with respect to the development through sports agenda.

This is also, incidentally, how early sports-related policymaking was done in the case study governments we examined. When these governments began setting sports policy (and for the initial decades of doing so), it was in response to specific challenges (deficient ends) and involved the specific selection of policy tools (means). In the United Kingdom, for instance, the 1960 Albermarle Committee was formed to investigate youth delinquency (a deficient end). It ultimately urged additional investments in sporting facilities and coaching as a means to combat this problem (given the argument that physical fitness could lead to attitudinal changes in youth). Also in 1960, a prominent report identified the 'Wolfenden gap'–the fallout rate in sport between school and adulthood—and called for more organized sport as a means to address such deficient end.[29] In Spain, sports policy was used to foster a centralized identity (and related political message) under the Franco regime; various means were

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[28] Data points that are included in this indicator include (but are not limited to): Freedom of elections at national level; Are electoral processes flawed? Do the representative Institutions (e.g. parliament) operate in accordance with the formal rules in force (e.g.Constitution)? Freedom of the Press (freedom of access to information, protection of journalists, etc.); Freedom of Association; Freedom of assembly, demonstration; Respect for the rights and freedoms of minorities (ethnic, religious, linguistic, immigrants...); Is the report produced by the IMF under Article IV published? Reliability of State budget (completeness, credibility, performance...); Reliability of State accounts (completeness, audit, review law...); Reliability of State-owned firms' accounts; Reliability of basic economic and financial statistics (e.g. national accounts, price indices, foreign trade, currency and credit, etc.); Reliability of State-owned banks' accounts; Is the State economic policy (e.g. budgetary, fiscal, etc.)... communicated? Is the State economic policy (e.g. budgetary, fiscal, etc.) publicly debated? Degree of transparency in public procurement; Freedom to leave the country (i.e. passports, exit visas, etc.); Freedom of entry for foreigners (excluding citizens of countries under agreements on free movement, e.g. Schengen Area, etc.); Freedom of movement for nationals around the world; Genuine Media Pluralism; Freedom of access, navigation and publishing on Internet. See information as presented on the WGI site (http://info.worldbank.org/governance/wgi/pdf/va.pdf).

[29] Sport and the Community: The Report of the Wolfenden Committee on Sport.

employed for this (including support for national teams, the limited provision—in Madrid—of sports infrastructure, and more). When Franco's regime was dissolved, in 1975, sports policies were driven by concerns over limited access (an inclusion 'end'), which led to an expansive investment in new facilities in underserved regions and localities.[30]

The case studies helped us to identify a range of 'means' governments employ in pursuing development through sport. Most of these means target improvements in specific aspects of sports activity as an intermediate social or behavioral objective. For instance, the Albermarle report noted above singled out the need for two means (sports facilities and coaching support) with the aim of improving youth participation (the intermediate objective) to ultimately achieve the larger development end (reduced youth delinquency).

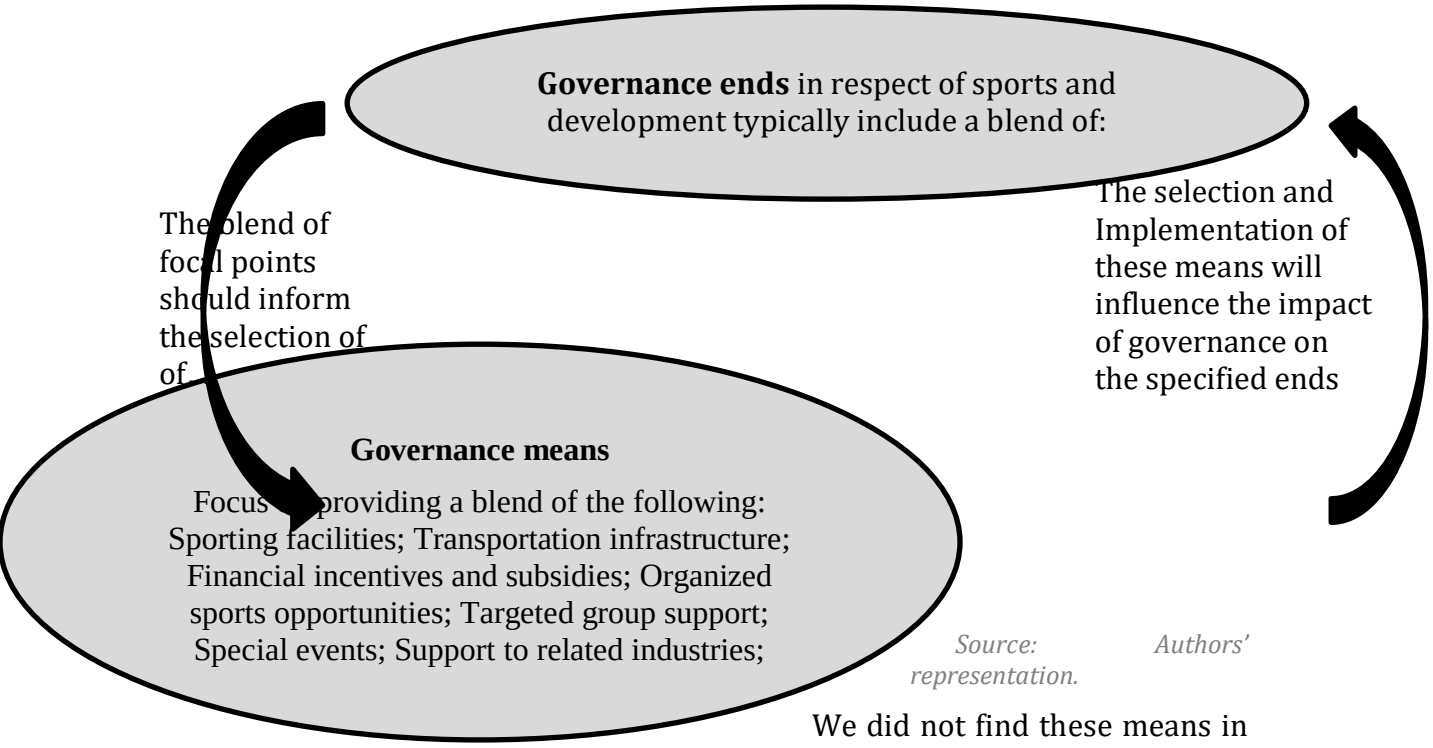
In other examples, governments in Spain and South Africa used financial incentives, transport infrastructure provision, commitments to host 'major events', and more to attract sports-related business activity (the intermediate objective) and ultimately foster economic growth (the development end). The French government provides facilities, coaching support, targeted organized sports activities (through clubs, educational institutions, and beyond), and additional means to promote civic participation in sports (especially with targeted groups) and ultimately improve health and inclusion.

4.1. Common means, despite inter-temporal and inter-jurisdictional variation

The case study examples helped us identify these kinds of examples, where specific means were chosen to address specific ends in the development through sports agendas. They informed a list of common means used in promoting development through sports, populating the following eight categories, where governments support the provision of: Sporting facilities; Transportation infrastructure; Financial incentives and subsidies; Organized sports opportunities; Targeted group support (programs in schools, elderly communities, at-risk-groups); Special events (one-off and repeat events); Support to related industries (especially hospitality and tourism); Training support (sponsoring coaching programs and such); and Volunteerism (where programs encourage and facilitate opportunities for volunteering in sports).They are shown in Figure 4.3, an updated version of the governance ends-means approach described in Figure 4.1 and Figure 4.2.

Figure 4.3. *Common means* in an ends-means approach to governance, sports and development

[30] This policy was so extensive that, in 1984, 52% out of the 37,698 existing facilities around the country had been built between 1975 and 1984 (Naudí, 2011, p. 387).



Source: Authors' representation.

We did not find these means in place in all of the case study governments all of the time, but see them as a potential tool-box from which means are commonly drawn. As with the discussion about governance ends (or goals), we asked whether it was possible to determine where and when the different tools were used—and why different tools seemed to be used in different places. To address this question, we examined the 'means' most commonly employed in the policy strategies in the 40 national and 40 sub-national governments discussed in Table 4.2 (and described in the research methods section). This was done by identifying the different policy mechanisms in one of the nine categories each government mentioned explicitly in its sports policy, and noting which policy end (or goal area) the mechanism was targeting. For instance, we examined Dubai's sports policy and noted the focus on (inter alia) hosting special events and providing transportation infrastructure and sporting facilities to promote growth. These objectives were explicitly linked to expanding business opportunities and employment. In another example, Taipei's city government used (among other means) organized sports (like road runs and organized club opportunities), training support (including provision of coaches), and targeted group support (to disabled groups, for instance) to promote health and inclusion.

As noted, our analysis of these policy documents was manual and conducted by a single researcher (and is hence open to concerns about reliability and validity). Even noting these concerns, we feel the analysis is useful in providing a descriptive view into the means that governments commonly employ when pursuing different ends in a development through sports agenda. Figure 4.4 and Figure 4.5 show this for national and sub-national governments. The three common ends are shown at the foot of each figure, and connection lines illustrate which means were associated with which ends in policy documents

(with numbers indicating how frequently the means were associated with the ends, across all governments, in percentages).

Figure 4.4. Common means adopted by national governments, and connections to ends

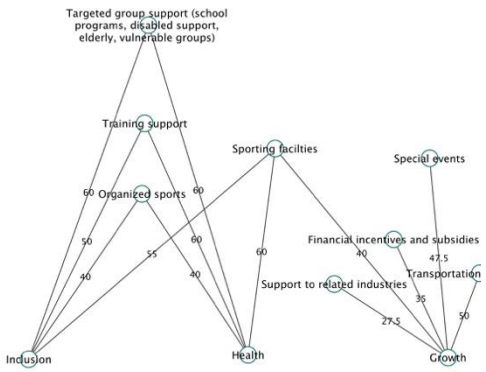
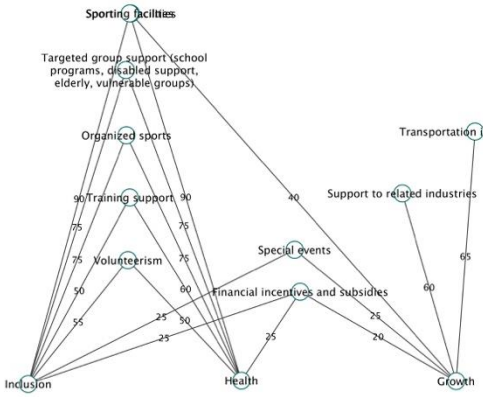


Figure 4.5. Common means adopted by sub-national governments, and connections to ends



Source (for both): Authors' analysis of sports policy documents in 40 national and 40 sub-national governments.

Our main observation centers on which means are most commonly used by governments trying to impact development through sports. The number one 'means' is the provision of sporting facilities (used by about half of the national governments and 90% of the sub-national governments).[31] Programs targeting specific groups were the second most common category (and actually accounted for the most interventions at national government level). This category includes programs to promote sports at schools (through national sponsorship of physical education classes, for instance) or to promote sports amongst the elderly or other at-risk or otherwise-targeted groups (like girls or women). In a tie for the third most common intervention, we found organized sports and training support. Organized interventions included government initiatives to host events like community road races, or support to clubs and league structures. Training support included programs aimed at providing coaching to communities.

A second observation centers on the different means associated with different ends. It appears that a large number of common tools are used by both national and sub-national governments in addressing inclusion and health related issues. Four sets of means were employed in this respect in national governments (targeted group support, training support, organized sports, and sporting facility provision). Sub-national governments used mechanisms and tools in these four 'means' categories as well, with added means like 'supporting volunteerism' and 'providing financial incentives and subsidies'.

[31] The emphasis on facilities as a policy tool is common (Crompton 1995, Houlihan and White 2002, Hylton 2013).

In contrast, a different set of means are employed to impact growth ends. These include support to related industries (like tourism), and the provision of transportation infrastructure (whether roads or airports or train stations), and hosting of special events (like mega-events, which are predominantly pursued as part of national government growth agendas).[32] In contrasting the 'means' related to these different ends, it appears that the 'growth through sports agenda' involves more expensive 'big ticket items' than the 'health and inclusion through sports' agendas. This could explain why governments pursue growth through sports less frequently than they pursue the other ends through sports (as shown in Table 4.3).

There are many other potential observations one could draw from the two figures. An important note of caution is required, however, for readers who might deduce that the kinds of means shown actually impact associated ends. The figures show which means governments employ when tackling specified ends, not the effectiveness of means in addressing such ends. As such, the figures do not offer evidence of the effectiveness of the different policy mechanisms on policy goals in the sports and development through sports arena. This evidence is actually notoriously weak, given significant problems in doing research into these matters. Kokolakikis et al. (2014, 153) cite a number of these challenges in respect of studies examining just the links between contextual and policy factors and participation in sports:

> "Due to the different approaches used, caution should be exercised in any comparison of determinants of sports participation. Firstly, the listing of sporting activities varies from one study to another and there is no common definition agreed upon participation in the literature. Secondly, the sports participation variable is measured in various ways: participation or not, frequency and intensity in sports participation, time spent in participation, etc. Thirdly, most studies use secondary data sources with a long sample size while other studies develop ad-hoc surveys with primary data … Fourthly, the comparability of estimates from different statistical methods may be difficult in both sign and magnitude."

The difficulties identified by Kokolakitis et al. are present in the vast set of studies that try to assess the impact of other policy means on key objectives in this development through sports arena. This includes studies on the links between hosting mega-events and economic growth (which we will explore at length in Chapter 5.), for instance, and between hosting mega-events and sports participation and inclusion (which was a link that we found at least eight sub-national governments were assuming) (Taks et al. 2013, Veal et al. 2012). The research difficulties also make it difficult to ascertain whether the provision of sports facilities positively impacts participation in sports (Wicker et al. 2013), or improves sports participation by youth and consequent

[32] National and sub-national governments also pursued growth through sports by expanding sporting facilities, and providing financial incentives and subsidies (two means employed to address inclusion and health matters as well).

children's health (Eime et al. 2013, Mauer-Vakil et al. 2014, Woods et al. 2015). These difficulties also limit our ability to draw on past studies and determine whether support for organized sports (one of the key 'means' shown in Figure 4.4 and Figure 4.5) actually leads to greater sports participation or yields inclusion and health benefits (as many governments assume) (Hebert et al. 2015).

Unfortunately, we could go on for pages reflecting on the limited evidence about causal (or other) connections between policy means and ends in the sports-development arena. These limits require governments to be circumspect when choosing any policy in this arena. Governments should be clear about the assumptions and expectations they have when doing so. We take this approach in reflecting on the logic and sense of supporting mega-events in the next chapter, providing an example of how governments should reflect on policy choices. When reflecting in this manner, we also recommend that governments recognize the impact of contextual variables on potential means-end links in the sports development arena. Research suggests that sports-related activities are commonly affected by economic, geographic, and demographic factors. These could influence whether a 'development through sports' policy makes sense in a specific context, and could also help in choosing the ends and means in such.

Given space constraints, it is impossible to go into full detail on these contextual factors in this chapter, but it is at least necessary to reflect on the variables that stand out as important to consider in supporting sports as a mechanism for promoting development. Our own work (Chapter 2.) notes, for instance, that the intensity of 'core sports' in municipalities in Mexico is influenced by access to international airports (which need not be inside a locality), the level of equality in the municipality (more unequal localities have more sports intensity), the size of the workforce (more workers leads to more sports intensity), the average salary of the workforce (lower average wages leads to more sports intensity), and education (more educated citizenries are associated with higher levels of sports intensity). Governments pursuing 'growth through sports' should consider such variables in determining whether sports could be a viable avenue through which to pursue broader development policies (given that poorly suited contexts may simply not be attractive for sports-businesses). Beyond this, various studies note that a selection of contextual variables influence the potential participation of citizens in sports, which governments should consider if they intend to pursue health or inclusion through sports. These include education, income, economic freedom, the proportion of people living in urban areas, and the percentage of students in the broader population (all of which are positively associated with sports participation) (Downward and Rasciute 2011; Humphreys et al. 2012; Kokolakalis et al. 2014; Scheerder and Vos 2011; Wicker et al. 2009)

4.2. An evidence-based view of governance means in a development through sports agenda

Governments should consider these contextual factors (and others) when promoting sports—and especially when promoting sports for development. The focus of this chapter is not on these factors, however, but rather on the 'means' governments can employ in pursuing development through sports. The discussion so far has helped to address the conceptual question asked in earlier sections: What are the means that governments use when pursuing development through sport (the processes, mechanisms, and such that governments are typically authorized to use in such policy regimes)? We have not, however, addressed the more practical question that was asked (at least in respect of governance 'means'): Is it possible to provide an evidence-based view into the progress of a *development through sport* policy regime, and assess the quality of governance in it?

We address this question here. As in the discussion of governance 'ends', we use data from English Local Authorities to demonstrate what this evidence-based approach might look like, drawing information from the *Sport England* profiles in four of these authorities. The information is targeted to reflect on the way these authorities are currently using the different kinds of 'means' commonly employed to promote sports and to use sports in supporting broader development objectives (as shown in Figure 4.3, Figure 4.4, and Figure 4.5). As with the analysis of 'ends', two types of information are shown in Table 4.7: the raw data (to the left) and relative performance (to the right), where the raw data are compared with national averages. Green blocks to the right point to instances where authorities perform better than average in providing 'means'. Red blocks indicate the opposite, and orange blocks suggest average performance.

Table 4.7. Governance 'means' in place in different English local authorities

Local authority	Hammersmith and Fulham	Plymouth	Birmingham	Southampton	Hammersmith and Fulham	Plymouth	Birmingham	Southampton
	Raw data				Relative performance (% above or below national average; where positive % is a 'better than average' performance)			
Sporting facilities								
Population/facilities	658	623	810	776	5.9	10.9	-15.7	-10.8
% Public access facilities	89	82.7	74.3	83	7.1	0	-10.5	-0.1
% Private access facilities	11	17.3	25.7	17	-34.9	2.4	52.1	0.5
% Local Authority owned facilities	32	27	24	33	10.3	-6.9	-17.2	13.8
% Private owned facilities	33	13	15	18	153.8	0	15.4	38.5
% Community owned facilities	1	0	2	0	-66.6	-100	-33.3	-1.0
% Education owned facilities	16	49	48	51	-62.7	13.9	18.6	11.6
Transportation infrastructure	NI	NI	NI	NI	NI	NI	NI	NI

Local authority	Hammersmith and Fulham	Plymouth	Birmingham	Southampton	Hammersmith and Fulham	Plymouth	Birmingham	Southampton
	Raw data				Relative performance (% above or below national average; where positive % is a 'better than average' performance)			
Financial incentives and subsidies	NI	NI	NI	NI	NI	NI	NI	NI
Organized sports opportunities								
% Accessing Organized competition	15	26.1	9.2	14	12.7	96.2	-30.8	5.2
Population/clubs (000)	14.97	3.6	6.4	5.7	-281.2	8.3	-63.7	-46.3
% Club members	29.8	18.5	16.8	19.5	17.5	-2.7	-3.6	8.1
% Participating in sports	42.1	34.8	34.5	38.7	16.6	16.0	-31.4	-0.6
Targeted group support	NI	NI	NI	NI	NI	NI	NI	NI
Special events	NI	NI	NI	NI	NI	NI	NI	NI
Support to related industries	NI	NI	NI	NI	NI	NI	NI	NI
Training support								
% Accessing sport tuition assistance	18.2	18.1	10.7	15.5	16.6	16	-31.4	-0.6
Volunteerism								
% Volunteers involved in sports	9.4	21.4	8.9	10.6	-25.9	68.5	-29.9	-16.5
Solicited feedback								
% Satisfied with sports services	48.9	61.9	61.8	65.3	-20.9	0	0	5.7

Source: Authors' analysis of data provided in Sport England Local Authority Profiles. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

The first observation we make about Table 4.7 relates to the obvious gaps in data on 'means'. The Sport England profiles offer no information on important 'means' in local authorities like transportation infrastructure, financial incentives and subsidies, targeted group support, special events, and support to related industries. The mechanisms and 'means' that would fall into these broad categories are not captured as part of the assessment of sports-related policy interventions by Sport England (which provides as broad a set of data as we have been able to find anywhere). This indicates either (or both) the difficulty of measuring 'means' in these categories or a failure to consider these as important 'means' categories for local authorities trying to promote development through sport.

The second observation is that all local authorities have mixed performance. This matters, because any single-number indicator would average out performance and result in a loss of information about the varied realities. This mixed performance also matters in pointing to the importance of not over-emphasizing any specific 'means' measure as the generic focus of policy.

Governance reforms in other domains frequently emphasize such generic 'means' as solutions, even though variations in realities across countries indicate this is a spurious prescription (Andrews 2008). The Doing Business Indicators advocate that it is inherently 'good' and important to process small business license requests quickly, for instance, even though countries like Sweden take time over these requests to vet the small business proposals (which research shows leads to a higher level of small business survival than one finds in place like the United States). Consider how this issue would play out if generic sports policies in England advocated having sporting facilities owned by educational institutions, and low ratios of people to clubs, and high levels of volunteerism. Hammersmith and Fulham (H+F) would look like the laggard in the group of four shown above, even though it performs well in providing most other means.[33]

This point is probably best made when reflecting on the final line in Table 4.7, which relates to the 'solicited feedback' at local authority level (and the proportion of citizens who are satisfied with sports services). This is the kind of indicator many governments are encouraged to collect, to evaluate performance and guide future decisions. H+F performs significantly worse than the other three localities on this measure, even though it performs better than the other three in providing most of the measured means and in producing most of the ends (as shown in past tables). The low satisfaction rate could well reveal the high level of demand for sports activity in H+F, and be an indicator of the large contextual space for pursuing sports-related policies. In contrast, the higher satisfaction rates in Birmingham and Southampton (which co-exist with weaker provision of 'means' and performance on 'ends') could indicate weaker demand and a less-open context in which to pursue sports-related policies.

The point is that one can tell a more textured story about sports-related policy when viewing all of these data points together, which is far superior to the simplified story-line any individual data point (and single-number indicator) allows. One needs a nuanced and textured view of the 'means' landscape in this arena, given the many means governments can use, and the challenge of choosing specific means to advance specific ends.

Section 5. Concluding Thoughts, and a Development Through Sports Governance Dashboard

Governance is all about identifying ends and then selecting means to meet such ends. This chapter offers a way of thinking about both processes for

[33] Nichols and James (2008) address a similar issue in their article on the varied impacts of using clubs engagement as a policy vehicle. The authors note that 'one size does not fit all' with this policy means, advising that the impact of this means depends on contextual factors (like 'who' is involved in club structures). Others making similar arguments include May et al. (2013) and Misener et al. (2013).

governments considering pursuing development through sports. Based on blended research incorporating case-based analysis and the assessment of contents in 80 government policy documents, the chapter points to three major 'ends' in this domain (inclusion, growth, and health) and nine categories of means (where governments provide (or facilitate the provision of) sporting facilities, transportation infrastructure, financial incentives and subsidies, organized sports opportunities, targeted group support, special events, support to related industries, training support, and volunteerism).

The research shows that governments commonly pursue the three ends through sports-related policies that feature at least one of the nine categories to do so. This leaves policymakers with conceptual clarity as to 'why' they might choose to pursue a 'development through sports' agenda, and 'what' they might do in such. We build on this conceptual understanding by offering an evidence-based approach to think about and evaluate this kind of agenda. We do not build an indicator of governance in this domain because of conceptual and empirical limitations (there are too many dimensions to consider, for instance, and too much information to lose in crafting a single-number indicator). Instead, we propose using dashboards to present data reflecting progress in meeting key policy ends, and in employing specific policy means. This dashboard can help any government policymaker assess the quality of governance in any 'development through sports' agenda. To emphasize the point, we view such governance as the exercise of authority through selected means by governmental authorities to meet selected ends that citizens care about.

The chapter has thus far proposed elements of the dashboard reflecting performance on ends and means. Data from English Local Authorities are used to populate these dashboards, with specific metrics included as these relate to that context. Different measures could be used to capture the ends and means in different ways in different contexts, if these ends and means were vastly different. For instance, we use data on the number of sports-related businesses (sports business stock) to reflect on progress and performance in using sport to promote growth. This is a narrow measure that may not capture the intended impact of a broader policy intervention in other contexts (where, for instance, governments target growth in selected tourism businesses through support to sports, or where governments expect spillovers from enhanced sports activity in areas like housing development, restaurant sales, or even game-day retail sales (Andrews 2015)). Beyond this, we have used data from the Sport England local authority profiles to show what policy means are employed in different authorities. Other governments may use different measures of concepts like 'volunteerism' or the number of facilities provided in a locality.

We find it attractive that the dashboard approach proposed allows context-specific adjustments like these—where governments pursuing 'development through sport' can build on and through the basic framework (of the three key 'ends' and nine proposed 'means' categories) we provide. This framework is shown in Dashboard 1 figure that follows, which combines the 'ends' and

'means' views shown thus far, for one local authority (Hammersmith and Fulham).

Dashboard 1. The Fulham and Hammersmith 'development through sports' dashboard

1. Governance ends—goals and objectives of development through sports

Inclusion		Growth		Health	
Relative performance (% above or below national average; where positive % is a 'better than average' performance)					
% female participation in sport	31.1	Sports business stock/total (%)	-0.12	Adult obesity %	22.1
% disabled participation in sport	12.2	Sports employment/ total (%)	162.00	Youth obesity %	-17.3
% 55+ participation in sport	16.3	Sports GVA/ total (%)	502.00	Health costs of inactivity (000 pounds per 100,000 population)	25.9
		Non-participation sports GVA/ sports GVA	111.0%	% Active	12.6
		Sports business stock growth	46.1	% Inactive	1.8

2. Governance means—mechanisms and tools for development through sports

1. Sporting facilities		*3.Financial incentives and subsidies*		*6.Special events*	
Population/facilities	5.9	No information		No information	
% Public access facilities	7.1	*4.Organized sports opportunities*		*7.Support to related industries*	
% Private access facilities	-34.9	% Accessing Organized competition	12.7	No information	
% Local Authority owned facilities	10.3	Population/clubs (000)	-281.2	*8.Training support*	
% Private owned facilities	153.8	% Club members	17.5	% Accessing sport tuition assistance	16.6
% Community owned facilities	-66.6	% Participating in sports	16.6	*9.Volunteerism*	
% Education owned facilities	-62.7	*5.Targeted group support*		% Volunteers involved in sports	-25.9
2.Transportation infrastructure		No information		*Solicited feedback*	
No information				% Satisfied with sports services	-20.9

Source: Authors' analysis of data provided in *Sport England* Local Authority Profiles. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

No information	Weak performance relative to national averages	Average performance relative to national averages	Strong performance relative to national averages

In combining the ends and means evidence, this full dashboard empowers policymakers with a view of both their performance on selected goals and their use of selected tools in achieving such goals. This view is useful in identifying relative strengths and weaknesses, as well as areas where policy might be tweaked in future. The Hammersmith and Fulham authorities might look at this dashboard with general satisfaction given the many green blocks, for instance, but could also see clearly where their performance lags behind national averages. Given that all the data are shown, they can try to build a story about their performance—or about potential 'next steps' in improving performance. For example, they may ask if improving volunteerism can assist in efforts to address obesity in children (given that both are areas where they have weaknesses).

We offer the dashboard with missing information in it to also make policymakers aware of the data they do not currently have. This could potentially also get them thinking about policy means they are not currently employing. In the case above, for instance, there is no information on targeted group support which would include physical education programs in schools. It would be interesting if authorities gathered information on these programs, especially given the relatively high child obesity statistics, or initiated such programs (as novel policy interventions they did not previously use as means or track as policy efforts).

The following Dashboard 2 provides a similar holistic view of the situation in Birmingham. There are many more 'red' blocks in this dashboard, indicating major performance deficiencies in terms of governance ends and means. This is not all bad news, as policymakers can start to reflect on the goals they care about the most (or where they are furthest behind national averages—like the participation of people over 55 and the size of the sports business stock as a percentage of total business (and the size of non-participation sports GVA, reflecting the presence of spectator sports businesses). Similarly, policymakers can reflect on the 'means' that may be open to more aggressive use (where they lag behind national averages). These include fostering organized competition and supporting sport tuition assistance. The dashboard raises questions about such 'next steps' that could drive policy discussions.

Dashboard 2. The Birmingham 'development through sports' dashboard

1. Governance ends—goals and objectives of development through sports

Inclusion		Growth		Health	
Relative performance (% above or below national average; where positive % is a 'better than average' performance)					
% female participation in sport	-21.5	Sports business stock/total (%)	-36.5	Adult obesity %	-0.3

% disabled participation in sport	-8.7	Sports employment/ total (%)	-5.3	Youth obesity %	-25.1
% 55+ participation in sport	-32.5	Sports GVA/ total (%)	-3.9	Health costs of inactivity (000 pounds per 100,000 population)	-15.1
		Non-participation sports GVA/ sports GVA	-31.1%	% Active	-5.1
		Sports business stock growth	31.0	% Inactive	-14.8

2. Governance means—mechanisms and tools for development through sports

1. Sporting facilities		***3.Financial incentives and subsidies***		***6.Special events***	
Population/facilities	-15.7	No information		No information	
% Public access facilities	-10.5	***4.Organized sports opportunities***		***7.Support to related industries***	
% Private access facilities	52.1	% Accessing Organized competition	-30.8	No information	
% Local Authority owned facilities	-17.2	Population/clubs (000)	-63.7	***8.Training support***	
% Private owned facilities	15.4	% Club members	-3.6	% Accessing sport tuition assistance	-31.4
% Community owned facilities	-33.3	% Participating in sports	-31.4	***9.Volunteerism***	
% Education owned facilities	18.6	***5.Targeted group support***		% Volunteers involved in sports	-29.9
2.Transportation infrastructure		No information		***Solicited feedback***	
No information				% Satisfied with sports services	0

Source: Authors' analysis of data provided in *Sport England* Local Authority Profiles. Green blocks indicate performance that is more than 5% better than the national average. Red blocks indicate performance that is more than 5% worse than national averages. Orange blocks indicate performance that is within 5% of national averages.

No information	**Weak performance relative to national averages**	**Average performance relative to national averages**	**Strong performance relative to national averages**

As already noted, any evidence-based policy conversation should be informed by contextual data, especially related to factors we know influence the sports potential in any government. It would be interesting to see what a third 'contextual factors' section would look like in the dashboard, and how it might help policymakers interpret some of the patterns in the ends and means narrative.

Whatever the narrative in individual governments, this chapter can make three key conclusions about governance and development through sports.

First, governments across the world are pursuing development through sports, in some way or another. This makes the current work relevant and applicable to a host of policymakers. Second, there are common ends and means governments pursue and employ when engaging in 'development through sports' initiatives. This chapter helps to identify both categories for policymakers to reference when considering what to pursue in such an agenda and how to precisely pursue it. Third, one can use data to provide an evidence-based view on this kind of agenda, with the dashboard provided as an example. The view is not a simple one, given the multi-dimensional nature of any 'development through sports' agenda, and policymakers should not expect this kind of tool to provide a 'magic bullet' that makes policymaking easy. Rather, the evidence in this kind of tool can help policymakers reflect on their performance, past assumptions about policy, and future opportunities.

The next chapter continues this line of thinking in scrutinizing the efficacy or merits of a common tool (or means) used in 'development through sports' policies: The support of mega-events.

References

Adams, A. and Harris, K., 2014. Making sense of the lack of evidence discourse, power and knowledge in the field of sport for development. *International journal of public sector management*, *27*(2), pp.140-151.

Andrews, M. 2010. Good Government Means Different Things in Different Countries. *Governance: An International Journal of Policy, Administration, and Institutions*. Vol. 23 (1), 7-35.

Andrews, M., 2014. *An Ends-Means Approach to Looking at Governance*.

Andrews, M. 2015. *Being Special: The Rise of Super Clubs in European Football*. Harvard Center for International Development Working Paper 299.

Andrews, M., Hay, R, & Myers, J. 2010. Can Governance Indicators Make Sense? Towards a New Approach to Sector-Specific Measures of Governance. *Oxford Development Studies.* Vol. 38 (4), 391-410.

Anheier, H. and List, R. 2013. Governance: Issues and Frameworks. In Anheier, H. (Ed.). *Governance Challenges and Innovations: Financial and Fiscal Governance*. Oxford: Oxford University Press.

Arndt, C. 2006. *The uses and abuses of governance indicators.* Paris: OECD.

Baade, R.A., 1996. Professional sports as catalysts for metropolitan economic development. *Journal of urban affairs*, *18*(1), pp.1-17.

Bailey, R., 2005. Evaluating the relationship between physical education, sport and social inclusion. *Educational review*, *57*(1), pp.71-90.

Bovaird, T. and Löffler, E. 2003. *Public Management and Governance.* London: Routledge.

Boland, R.A. and Matheson, V.A., 2014. Do mega sports events contribute to economic development?. *Americas Quarterly*, *8*(2), p.22.

Brown, H., Salmon, J. and Pearson, N., 2014. Ecological correlates of sport participation in youth. *Science & Sports*, *29*, p.S38.

Coates, D. and Humphreys, B.R., 2003. The effect of professional sports on earnings and employment in the services and retail sectors in US cities. *Regional Science and Urban Economics*, *33*(2), pp.175-198.

Collins, M., 2014. *Sport and social exclusion*. Routledge.

Crompton, J.L., 1995. Economic impact analysis of sports facilities and events: Eleven sources of misapplication. *Journal of sport management*, *9*(1), pp.14-35.

Eime, R.M., Young, J.A., Harvey, J.T., Charity, M.J. and Payne, W.R., 2013. A systematic review of the psychological and social benefits of participation in sport for adults: informing development of a conceptual model of health through sport. *Int J Behav Nutr Phys Act*, *10*(135), p.14.

Forster, J., 2006. Global sports organisations and their governance. *Corporate Governance: The international journal of business in society*, *6*(1), pp.72-83.

Fukuyama, F. 2004. Why there is no science of public administration? *Journal of International Affairs*, Vol. 58 (1), 189-201.

Galily, Y., Yuval, F. and Bar-Eli, M., 2012. Municipal subsidiary policy toward professional sports teams: A democratic deficit in the local government. *International Journal of Sociology and Social Policy*, *32*(7/8), pp.431-447.

Geeraert, A., 2013. Sports Governance Observer. A tool to improve sports governance.

Gerretsen, S. and Rosentraub, M.S., 2015. Towards a New Theory of Sports-anchored development for real economic change. *Routledge Handbook of Theory in Sport Management*.

Grindle, M. 2004. "Good Enough Governance: Poverty Reduction and Reform in Developing Countries" *Governance: An International Journal of Policy, Administration and Institutions*, Vol.17, 4, 525-548.

Grix, J. and Carmichael, F., 2012. Why do governments invest in elite sport? A polemic. *International journal of sport policy and politics*, *4*(1), pp.73-90.

Gratton, C. and Henry, I. eds., 2002. *Sport in the city: the role of sport in economic and social regeneration*. Routledge.

Green, M., 2006. From 'sport for all'to not about 'sport'at all?: Interrogating sport policy interventions in the United Kingdom. *European sport management quarterly*, *6*(3), pp.217-238.

Grix, J., 2015. *Sport Politics: An Introduction*. Palgrave Macmillan.

Hallmann, K. and Petry, K. eds., 2013. *Comparative sport development*. Heidelberg: Springer.

Hebert, J.J., Møller, N.C., Andersen, L.B. and Wedderkopp, N., 2015. Organized Sport Participation Is Associated with Higher Levels of Overall Health-Related Physical Activity in Children (CHAMPS Study-DK). *PloS one*, *10*(8), p.e0134621.

Hertie School. 2014. *The Problem Solving Capacity of the Modern State*. Oxford: Oxford University Press.

Hill, C. and Lynn, Jr., L. 2004. Governance and Public Management: An Introduction. *Journal of Policy Analysis and Management* Vol.23(1), 3-11.

Houlihan, B., 2002. *Sport, policy and politics: A comparative analysis*. Routledge.

Houlihan, B., 2005. Public sector sport policy developing a framework for analysis. *International review for the sociology of sport*, *40*(2), pp.163-185.

Houlihan, B., 2016. 3 Comparative sport policy. *Sport in Latin America: Policy, Organization, Management*, p.34.

Houlihan, B. and Lindsey, I., 2012. *Sport policy in Britain* (Vol. 18). Routledge.

Houlihan, B. and White, A., 2002. *The politics of sports development: development of sport or development through sport?*. Psychology Press.

Hylton, K. ed., 2013. *Sports Development*. Routledge.

Jefferys, K., 2015. The Thatcher governments and the British Sports Council, 1979–1990. *Sport in History*, pp.1-25.

Jones, C., 2001. A level playing field? Sports stadium infrastructure and urban development in the United Kingdom. *Environment and Planning A*, *33*(5), pp.845-861.

Kaufmann**,** D.**,** Kraay**,** A.**,** and Zoido-Lobaton**,** P. 1999. *Governance Matters.* World Bank Policy Research Working Paper 2196*.* Washington, DC: World Bank.

Kaufmann**,** D.**,** Kraay**,** A.**,** and Mastruzzi**,** M. 2007. *Governance Matters VI: Aggregate and Individual Governance Indicators 1996–2006*. World Bank Policy Research Working Paper, No. 4280. Washington, DC.

Kelly, L., 2011. 'Social inclusion'through sports-based interventions?. *Critical Social Policy*, *31*(1), pp.126-150.

Khan, K.M., Thompson, A.M., Blair, S.N., Sallis, J.F., Powell, K.E., Bull, F.C. and Bauman, A.E., 2012. Sport and exercise as contributors to the health of nations. *The Lancet*, *380*(9836), pp.59-64.

Kokolakakis, T., Lera-López, F. and Castellanos, P., 2014. Regional differences in sports participation: the case of local authorities in England. *International journal of sport finance*, *9*(2), pp.149-171.

Kooiman, J. 2003. *Governing and Governance.* London: Sage.

Koski, P. and Lämsä, J., 2015. Finland as a small sports nation: socio-historical perspectives on the development of national sport policy. *International Journal of Sport Policy and Politics*, *7*(3), pp.421-441.

Mauer-Vakil, D., Faulkner, G.E. and Tamminen, K.A., 2014. Sport participation and mental health among youth: A systematic review of prospective studies. *Journal of Exercise, Movement, and Sport*, *46*(1).

May, T., Harris, S. and Collins, M., 2013. Implementing community sport policy: understanding the variety of voluntary club types and their attitudes to policy. *International journal of sport policy and politics*, *5*(3), pp.397-419.

McConkey, R., Dowling, S., Hassan, D. and Menke, S., 2013. Promoting social inclusion through Unified Sports for youth with intellectual disabilities: a five-nation study. *Journal of intellectual disability research*, *57*(10), pp.923-935.

Michalski, W., Miller, R., and Stevens, B. 2001. Governance in the 21st Century: Power in the Global Knowledge Economy and Society. *Governance in the 21st Century. Paris: OECD.*

Misener, L., 2014. Sports governance, development and corporate responsibility. *International Journal of Sport Policy and Politics*, *6*(3), pp.550-552.

Misener, K., Harman, A. and Doherty, A., 2013. Understanding the local sports council as a mechanism for community sport development. *Managing Leisure*, *18*(4), pp.300-315.

Murphy, N.A. and Carbone, P.S., 2008. Promoting the participation of children with disabilities in sports, recreation, and physical activities. *Pediatrics*, *121*(5), pp.1057-1061.

Naudi, Sixte Abadía. 2011. Deporte, ciudadanía y libertad: La Transición en España y el deporte, 1975-1982. In: Atletas y ciudadanos: historia social del deporte en España (1870-2010). Alianza Editorial, p. 357-392.

Nichols, G., 2010. *Sport and crime reduction: The role of sports in tackling youth crime*. Routledge.

Nichols, G. and James, M., 2008. One size does not fit all: implications of sports club diversity for their effectiveness as a policy tool and for government support. *Managing leisure*, *13*(2), pp.104-114.

Noll, R.G. and Zimbalist, A.S. eds., 1997. *Sports, jobs, and taxes: The economic impact of sports teams and stadiums*. Brookings Institution Press.

Oja, P., Titze, S., Kokko, S., Kujala, U.M., Heinonen, A., Kelly, P., Koski, P. and Foster, C., 2015. Health benefits of different sport disciplines for adults: systematic review of observational and intervention studies with meta-analysis. *British journal of sports medicine*, pp.bjsports-2014.

Pate, R.R., Trost, S.G., Levin, S. and Dowda, M., 2000. Sports participation and health-related behaviors among US youth. *Archives of pediatrics & adolescent medicine*, *154*(9), pp.904-911.

Porter, P.K., Fizel, J., Gustafson, E. and Hadley, L., 1999. Mega-sports events as municipal investments: a critique of impact analysis. *Sports economics: current research.*, pp.61-73.

Qiu, Y.H., Luo, X.J. and Liu, Y.Q., 2013. The Influences of Sports Consumption on Expanding Domestic Needs and Its Function of Promoting Economic Growth. In *The 19th International Conference on Industrial Engineering and Engineering Management* (pp. 313-319). Springer Berlin Heidelberg.

Schulenkorf, N. and Adair, D., 2013. *Sport-for-development: the emergence and growth of a new genre* (pp. 3-11). Palgrave Macmillan UK.

Taks, M., Misener, L., Chalip, L. and Green, B.C., 2013. Leveraging sport events for participation. *Canadian Journal for Social Research*, *3*(1), p.12.

Tirole, J. 2001. Corporate Governance. *Econometrics*, Vol. 69 (1), 1-35

Vandermeerschen, H., Vos, S. and Scheerder, J., 2015. Who's joining the club? Participation of socially vulnerable children and adolescents in club-organised sports. *Sport, Education and Society*, *20*(8), pp.941-958.

Veal, A.J., Toohey, K. and Frawley, S., 2012. The sport participation legacy of the Sydney 2000 Olympic Games and other international sporting events hosted

in Australia. *Journal of policy research in tourism, leisure and events*, *4*(2), pp.155-184.

Vuori, I., Fentem, P., Svoboda, B., Patriksson, G., Andreff, W. and Weber, W., 1995. *The significance of sport for society: health, socialisation, economy*. Council of Europe.

Wicker, P., Hallmann, K. and Breuer, C., 2013. Analyzing the impact of sport infrastructure on sport participation using geo-coded data: Evidence from multi-level models. *Sport management review*, *16*(1), pp.54-67.

Woods, C.B., Tannehill, D., Quinlan, A., Moyna, N. and Walsh, J., 2015. Children's Sport Participation and Physical Activity Study (CSPPA) Report 1. *World*.

CHAPTER 5. ECONOMIC IMPACTS OF MEGA-EVENTS

Introduction

There is perhaps no larger sports policy decision than the decision to host or bid to host a mega-event like the FIFA World Cup or the Summer Olympics. Hosts and bidders usually justify their decisions by touting their potential impact. Many organizers and promoters either fund or widely disseminate ex-ante studies conducted by consultancy firms that highlight the positive effects of the event. For instance, the consultancy firm Ernst & Young produced a 2010 report prior to the 2014 World Cup in Brazil that painted a rosy picture of the event's legacy. It estimated that an additional R$ 142.39 billion (4.91% of 2010 GDP) would flow through the Brazilian economy over the 2010-2014 period, generating 3.63 million jobs per year, R$ 63.48 billion (2.17% of 2010 GDP) of income for the population and additional tax collection of R$ 18.13 billion (0.62% of 2010 GDP) for the local, state and federal governments. Ernst & Young estimated that during the same period 2.98 million additional visitors would travel to Brazil, increasing the international tourist inflow up to 79%.

Such results, if true, are clearly attractive for governments considering a bid, but these impacts don't always materialize. Moreover, hosting mega-events requires significant investments - and the costs of these investments is rising. Zimbalist notes emerging economies like China, Brazil, and South Africa have increasingly perceived "mega-events as a sort of coming-out party signaling that [they are] now a modernized economy, ready to make [their] presence felt in world trade and politics" (Zimbalist 2015). Their intentions may be noble, but the intention of using mega-events as a "coming-out party" means developing countries hoping to host them need to make massive investments. They are confronted by significant obstacles in that they lack sufficient stadiums, accommodations, transportation systems, and other sports-related infrastructure. As a result, each of the mega-events hosted by emerging economies has been exorbitantly expensive. The 2014 World Cup cost Brazil between USD 15 billion and USD 20 billion, while Beijing reportedly spent USD 40 billion prior to the 2008 Summer Olympic (Zimbalist 2015). Additionally, as the debt-ridden 1976 Summer Olympics in Montreal demonstrates, expensive mega-events are not limited to emerging economies alone. Flyvbjerg and Stewart have even shown that every Olympics since 1960 has gone over budget (Flyvbjerg and Stewart 2012).

Such incredible figures in terms of both costs and benefits begets the question: are mega-events worth it? What exactly are the economic consequences of these sporting consequences? Which reports should a government believe? What economic consequences should a government expect? With such high stakes, policymakers need to choose wisely. We attempt to answer these questions and aid the decisions of policymakers by providing a concise review of the rich academic literature on mega-events. For the purposes of this paper, we mainly focus on the Summer Olympic Games and the FIFA World Cup as mega-events. However, we also leverage information regarding events like the

Winter Olympic Games, the UEFA football championships, and the Commonwealth Games. These events are organized on a smaller scale than the previous two, but that might provide some insights on how the best understand mega-events. We focus on claims surrounding the direct or indirect mechanisms that facilitate the impact that ex-ante studies predict. We provide a review of these claims and their validity according to the existing literature.

Section 1 focuses on the argument that mega-events lead to increased economic activity in the host economy. Specifically, we evaluate whether or not mega-events leads to access to previously accessible funds and increased investments. These investments could theoretically come from supranational organizations, private stakeholders, or public stakeholders. We also consider whether or not these new expenditures and investments have the multiplicative effect that many ex-ante studies assume they have. We finally investigate if the economic activity surrounding mega-events leads to increased revenues and tax collection for host governments. Overall, the existing academic literature suggests that any increased economic activity resulting from the event is routinely dwarfed by additional public debt commitments. Moreover, the arguments regarding multiplicative effects and increased revenues are also exaggerated.

Section 2 shifts the focus to the potential impact of mega-events on a specific industry: tourism. We explore the effect of mega-events on the number of tourists visiting the host region and their spending. We explore this channel both for analyses specific to a single mega-event and for cross-country evaluations incorporating many events. Next, we consider the impact of a mega-event on a region's brand and image in the international community with the idea of testing if the competition will impact future tourism. Finally, we consider if mega-events lead to increases in the capacity of a city or country to welcome tourists as a result of improved airport infrastructure, accommodations, and/or transportation systems. As was true in Section 1, the academic literature suggests that the claims of many ex-ante studies are misleading. Our review finds that there is some evidence for increases in tourist arrivals to certain events, but those increases are far smaller than what is generally predicted beforehand. These effects are also usually dependent on factors, such as the timing of the competition, that are specific to the host region and the event itself.

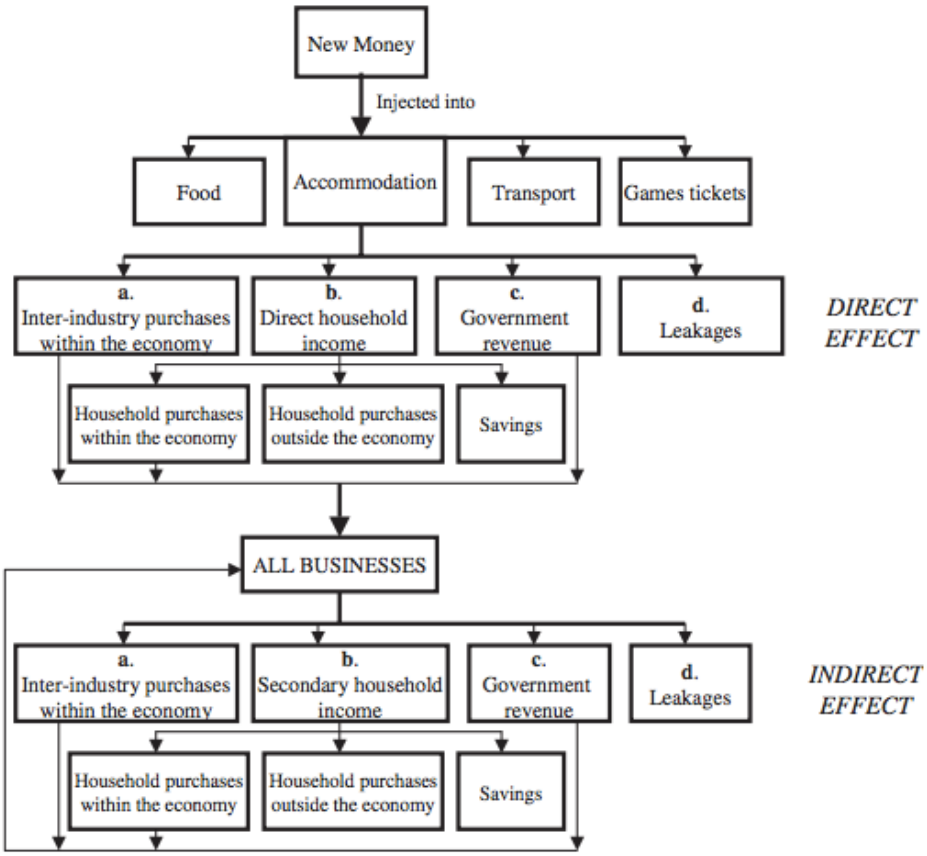
Section 3 briefly discusses other potential qualitative and social impacts of mega-events such as international business relations, crime reduction, and the "feel-good effect." In the penultimate section, Section 4, we discuss how these conclusions should impact the decision-making of policymakers. Finally, in a short conclusion, we summarize the findings of our review.

Section 1. Increased Economic Activity

It has been argued that both the preparation for mega-events and the actual events themselves lead to an increase in economic activity. Furthermore, it has

also been argued that this increased level could potentially be sustained even after the event has passed. The thinking around this goes as follows:

Figure 5.1. Expected impact flows



Source: Kasimati 2003.

It is expected that in preparation for the event the host has to undertake major investments not only in sports-related infrastructure, but also in other forms of infrastructure. These investments would be made with three types of funds: (i) investments made by supranational organizations (i.e.: IOC, FIFA, etc.), (ii) investments made by private stakeholders and, (iii) investments made by public stakeholders.

An implicit assumption is that the event would allow the host to access resources that otherwise wouldn't be available. The rationale is that supranational organizations and certain private stakeholders would've simply chosen not to invest in the region in the absence of the event, at least not in that scale. Moreover, it is argued that political gridlock would've prevented available public resources to be utilized in infrastructure investments.

These infrastructure investments would presumably serve as an engine of growth for the local economy as the required construction activities demand direct and indirect inputs from other local industries, effectively creating a multiplicative effect throughout the economy. Furthermore, in the short run, these investments themselves would create additional employment in the

local economy as these endeavors may require sizable labor. In turn, these new jobs might translate into new spending in the region, which would also generate a multiplicative effect throughout the economy.

Meanwhile, during the event itself, the assumption is that attendants, both locals and foreign tourists, will spend on tickets, merchandise and memorabilia related to the event. Similarly, it is expected that they also consume food and beverages in the arena. Lastly, it is assumed that the festive mood around the event would influence locals and visitors that are not necessarily attending the event, thereby increasing spending in other social and leisure activities more loosely associated to the event. Once again, this increased economic activity could presumably lead to new jobs and new spending in the region. Lastly, it is presumed that at least portion of the new jobs created due to the event are maintained over time, allowing for the increased level of economic activity to be persist long after the event has occurred.

As an example of this type of analysis, Haddad and Haddad (2010) used a dynamic computable general equilibrium model (CGE) to estimate that hosting the 2016 Summer Olympics in Rio de Janeiro, Brazil could have an output multiplier effect of 4.26. This means that for every USD 1 invested in the Olympic Games, the private sector would generate additional USD 3.26 in productive chains associated with the Games by 2027.

More precisely, the authors argue that injecting USD 14.4 billion related to the event would generate USD 39.1 billion in private productive activity, which in turn would generate additional tax collection at the municipal level (USD 269.8 million), state level (USD 582.9 million) and federal level (USD 4.82 billion). Additionally, with regards to labor absorption, the authors estimate that the investment would generate an annual average of 120,833 additional man-year equivalents (MYE) for the period between 2009 and 2016 and an annual average of 130,970 additional MYE for the 2017-2027 period. Lastly, the authors estimate that the productive effects of the Olympic Games would influence 55 distinct sectors of the Brazilian economy. 35% of the total impact would be concentrated on the following industries: civil construction; real estate and rental services; services rendered to business; oil and gas; information services; and transport, warehousing and mailing services.

There are substantial number of ex-post evaluations that have attempted to address claims such as those made by Haddad and Haddad. Most of these ex-post evaluations have had results significantly lower than the ex-ante estimates. This is because the previously described mechanisms are based on a set of assumptions that don't always hold up well against detailed scrutiny.

1.1. Access to previously inaccessible resources

As previously mentioned, one of the initial assumptions is that the event allows access to resources that otherwise wouldn't have been available. Namely the assumption implies three types of potential funds: (i) investments made by supranational organizations (i.e.: IOC, FIFA, etc.), (ii) investments

made by private stakeholders and, (iii) investments made by public stakeholders.

i. Funding from supranational organizations

Ex-ante studies assume the introduction of autonomous spending financed by supranational organizations like the IOC or FIFA. The rationale is that, without the event, these organizations would not have invested in the hosting region. This is true as these funds are specifically earmarked to be used for the mega-event. Nonetheless, spending is generally restricted to operational and promotional costs, meaning the expenditures are not necessarily those required for the preparation of the event. Moreover, the spending represents a relatively small share of the overall preparation costs of the event.

In preparation for the 2010 World Cup in South Africa, FIFA spent, according to their 2010 financial report, USD 1.23 billion over the 2007-2010 period. However, this did not include any investments in stadiums, precinct development, transport infrastructure or other infrastructure. Only 25% of these expenses were actually spent in South Africa either as contributions to the Local Organizing Committee or as investments related to the World Cup's legacy. The rest of the expenditure was not focused on South Africa, rather it was devoted to one of the following areas: prize money for participants; payments to participating member associations; team lodging and travel; IT solutions for finding accommodations and ticketing; TV production; refereeing matters; kick-off concerts; insurance; preliminary competition; marketing costs and benefits for clubs.

Furthermore, according to the Sport & Recreation Department of South Africa (2013), operational costs raised to USD 526 million, significantly above the USD 226 million contributions that FIFA made for the Local Organizing Committee. Comparatively, the South African Public Service Commission estimates public investment for the 2010 World Cup at around USD 3.5 billion, which is over ten times what FIFA actually spent on South Africa It is almost three times FIFA's total investment.

This phenomenon only increased in magnitude for the 2014 Brazil World Cup as the USD 2.22 billion reportedly spent by FIFA in preparation for the event was dwarfed by public investments estimated to be between USD 10 billion and USD 15 billion. Therefore, it is difficult to make the case that "gaining access" to these earmarked funds spent by supranational organizations makes it worthwhile to incur the counterpart investments that are required from host regions.

ii. Funding from private stakeholders

The case of autonomous spending financed by private stakeholders founded in the rationale that, in the presence a mega-event, a number of private stakeholders would choose to make significant investments in the host region that they would've not chosen to do in absence of the event. The 1984 Los Angeles Olympics is usually used as an example for this line of reasoning since it was the first privately funded Olympics. However, a number of specific

dynamics regarding the 1984 Olympics made this experience the exception rather than the norm.

The period prior to the 1984 Olympics was a turbulent one. The 1968 Olympics in Mexico City were held under the shadow of the so-called "Tlatelolco Massacre" that occurred just ten days before the start of the event. The 1972 Olympics in Munich were tarnished by the kidnapping of eleven Israeli Olympic athletes, who were taken hostage and assassinated along with a German police officer. The 1976 Olympics in Montreal were then perceived to be a financial distress as they sunk the city into a multi-billion dollar debt that was only paid off in 2006. Lastly, the 1980 Moscow Olympics were boycotted by over 60 countries in protest of the Soviet invasion of Afghanistan. In the midst of this tumultuous run, Los Angeles presented in 1978 the lone bid to host the 1984 Olympics, making it the first games to be awarded without competing bids since the 1932 Olympics.

In light of these peculiar circumstances, the Los Angeles Olympic Organizing Committee was able to negotiate certain terms with the IOC that no other host had been able to do so in the past - or has been able to do since. According to Andranovich, Burbank and Heying (2001), the LA bid offered two novel proposals: (i) the games would be privately funded, and (ii) the host city, not the IOC, would negotiate television rights. Furthermore, the insistence by city officials to limit the city's financial liability convinced the IOC to waive a rule that required the host city be financially responsible for the games.

Andranovich, Burbank and Heying (2001) state that the Los Angeles Olympic Organizing Committee (LAOOC) was set up with clear goals: maximize corporate sponsorship, minimize the costs of organizing the games by leveraging existing facilities, leverage volunteers rather than paid staff, and request sacrifices from Olympic visitors and local communities alike. Preparatory investments, all of which were made by private entities, were minimal as only a few facilities were built or refurbished. Furthermore, according to the authors, the Games were used as a reason to renovate the airport and expand telecommunications infrastructure, but they did not spawn secondary development projects. This model allowed for a controlled budget of just over USD 400 million according to the Official Report of Los Angeles 1984 (Los Angeles Olympic Organizing Committee and Perelman 1985). This sum represented approximately 25% of the costs of the 1976 Montreal Olympics and allowed for an actual profit of over USD 200 million.

Nonetheless, as was previously mentioned, the environment that allowed for the controlled budget and eventual profit is rather unusual. For the sake of comparison, *The Guardian* approximates that 85% of the more than 11 billion pounds budgeted for the 2012 London Olympics originated from public funds. *The Guardian* estimates that the remaining 15% would be divided equally between IOC funding and private sponsorship. This means that public investment was over thirteen times the amount of private investment and almost seven times non-public investment. Similarly, private investment in areas such as the development of the Olympic Village, which in theory would be a prime opportunity for private sector involvement, was lacking. As a

matter of fact, London's Olympic Delivery Authority developed the Olympic Village at a cost of 1.1 billion pounds and later sold it to the real estate investment company Delancey and Qatari Diar at a net loss of 275 million pounds.

iii. Funding from public stakeholders

Lastly, the assumption of new public investment stems from the logic that political gridlock in the host government prevents the use of available public resources for much-needed infrastructure investments. This perspective sees the event as a catalyzer to overcome these gridlocks. However, this argument may face at least two different caveats. The first concerns the actual presence of gridlock impeding the access to resources. The second is related to whether or not readily available public resources would actually go unused.

The presence of political gridlock is very difficult to assess in an overarching manner as it is highly context specific. With respect to the availability of unused public resources, it seems as very unlikely that they would actually go unused, especially when one considers the numerous instances of government indebtedness related to hosting mega-events. One of the most notorious cases is the USD 1.2 billion debt that the local government of Montreal was straddled with after hosting the 1976 Olympics. When one considers the interest paid on the debt and the additional funds required to complete the facilities after the Games had finished, the Olympic debt totaled USD 2.73 billion (Levesque, 2001) and it took 30 years to be fully paid off. Other recent cases of multibillion dollar public sector debts for hosting major sporting events include the 2004 Summer Olympics in Athens and the 2010 Winter Olympics in Vancouver.

Gouget and Barget (2006) argue that debt which ensues from hosting the event is a negative externality of sporting events, especially if the investments made do not later lead to real economic development. Similarly, Zimbalist (2015) states that in order to meet these debt services the government must either raise taxes or reduce government services, both of which would introduce a drag on the local economy. Furthermore, Zimbalist argues that this potential drag would only be economically justified if the original investment made with the borrowed money has a larger positive impact for the region's long-term development than the potential drag. This is a high threshold to meet. Under these circumstances, it would seem unlikely that regions would incur this type of debt if they had access to otherwise unused public resources.

Andrews and Balchin (Forthcoming) have recently introduced an interesting perspective regarding this debate about public resources. They argue that, in the case of the 2010 World Cup in South Africa, the local governments of Cape Town and Durban benefited from a series of non-stadium capital investments funded by the national government that dwarfed those undertaken by the city itself. Following this logic, even though at the aggregate level the argument that there's no such thing as "readily available public resources going unused" holds, it is possible that a given place, such as a particular city, could theoretically benefit from a substantial transfer of resources from the national or regional government. These funds transferred from the national

government likely imply the same tradeoffs highlighted by Zimbalist (2015), but these costs are not necessarily borne by the benefited cities. They are rather subsidized by the whole country. Andrews and Balchin's argument inserts a distributional dynamic that's worth studying as it might help explain the rationale for cities to participate as hosts for events where this cross-subsidization is possible.

iv. Prioritizing investments in mega-events over other potential investments

Finally, even if there are potential funds available, it begs the question whether this type of public investment should be prioritized over alternatives. More specifically, the question is whether the opportunity cost of building event-related infrastructure is higher or lower than other type of public investment. Kesenne (1999) argues that, even though a mega-event may create net benefits, public funding should occur only if the event yields higher net benefits than alternative projects. While it is not feasible to know the net benefits of all other potential projects and to measure them precisely ex-ante, the author argues that these elements should nonetheless be considered.

Matheson and Baade (2004) posit that context might significantly influence the answer to this question. They argue the opportunity cost of capital may be particularly high in developing nations given that there may be many other public projects that have more value for society, but this might not be the case for more developed nations. The authors compare the significant controversy surrounding a USD 330 million investment in a new soccer stadium in Nigeria with the relatively little criticism that Japan received during a USD 6 billion spending spree for the 2002 World Cup. They argue that the different reactions emanate from the difference in perceived opportunity costs. While the new stadium in Nigeria had a higher cost than other societally desirable options, the alternative infrastructure projects in Japan were deemed by the authors to be likely other potential "white elephants". Similarly, Humphreys and Prokopowicz (2007) argue transitional economies that attempt to host these major events need to undertake major upgrades to their current inventory of sports stadiums and five-star hotels. They argue that this type of spending has a higher opportunity cost than in developed economies. These arguments should serve as an important cautionary note when developing economies consider hosting these types of events.

It is hard to disentangle between what kinds of infrastructure investments are specific to the event and which ones would have been carried out by the city even without the event. For instance, Humphreys and Prokopowicz (2007) discussed this issue when assessing the prospects of Poland and Ukraine hosting the 2012 UEFA Euro Cup. They found that, during the years preceding the event, Poland would reportedly spend USD 8 billion on motorways, USD 4.6 billion on upgrading inter-city rail connections and USD 1.7 billion on public transportation in large cities. Some of this construction would be contingent on winning the bid and would be made to comply with UEFA requirements, but much of it would be taking place independent of the

outcome of the bid. Under these circumstances, it's hard to identify what amount should be directly attributed to hosting the event and therefore what costs and benefits should be considered when evaluating the impact.

However, for event-specific investments such as sports stadia, Matheson (2006) argues that they are often highly specialized facilities that have only limited use following a major sporting event and hence should not be the focus of public spending. The majority of economists appear to agree with this viewpoint as shown in a survey of a random sample of American Economic Association members conducted in 2005 by Robert Whaples (2006). In this survey, economists were asked if local and state governments in the U.S. should eliminate subsidies to professional sports franchises to which 58% of economists strongly agreed, 28% agreed and only 5% disagreed with the rest remaining neutral. It should be noted that the question didn't particularly refer to the building of stadia or mega-events specifically, but such overwhelming agreement should be considered indicative of a general consensus on the subject.

In their own review of the subject, Coates and Humphreys (2008) find near unanimity in the conclusion that stadiums, arenas and sports franchises have no consistent, positive impact on jobs, income, or tax revenues. They argue that, if sports facilities do not have any important positive economic impact in the local economy, subsidies for the construction and operation of these facilities are difficult to justify.

There's an argument to be made that the majority of these studies were not truly focused on mega-events. Moreover, they were based in the United States, which has a particular urban structure and a recent tendency to locate stadiums in suburban areas that could theoretically downplay their impact. In an attempt overcome these purported limitations, Feddersen, Grötzinger and Maennig (2009) produced the first multivariate study that uses a difference-in-difference model to examine the potential income and employment effects of new stadiums outside of the United States. They focus on new stadiums for the 2006 World Cup in Germany. However, the authors were not able to identify income or employment effects, significantly different from zero in the urban districts with new stadiums[34].

Based on these arguments, there is nothing to suggest that stadium building is the best use of government funds, especially when funding these stadiums implies very specific tradeoffs. Several recent developments have made these tradeoffs very evident. The new stadiums built in Cuiaba and Manaus for the 2014 Brazil World Cup reportedly cost 50% more than these cities' educational budgets. However, the stadium in Cuiaba had to be shut down just 7 months after the World Cup for emergency repairs. Likewise, the Manaus stadium had hosted only 11 events in the five months after the tournament

[34] It's worth mentioning that the authors did stress that the impact of these stadiums might be found in "feel-good" and "image" effects. However, these variables are difficult to measure and to compare with more tangible variables.

and required an upkeep that proved too much for any local team to take. Even the projects associated to the stadiums in these cases may not have been worthwhile. For instance, a USD 800 million light railway in Cuiaba linking the airport to the city center was meant to be completed in time for the World Cup, but just half a mile of a 14-mile track was built on time.

Similarly, Scott Walker, the governor of Wisconsin in the United States, approved legislation in August 2015 that would provide USD 250 million dollars of public money to aid in the construction of a new stadium for the Milwaukee Bucks basketball team. This was just one month after Walk decreased the budget of the University of Wisconsin system by USD 250 million.

These tradeoffs could be significantly starker when one considers other public costs associated with sports facilities like land costs, infrastructure costs, operational costs, and the potential of forgone property taxes. When analyzing the 99 stadiums used in 2001 in the big four American major league sports (NFL, NBA, MLB and NHL) Long (2005) finds that the real cost of public funding for these facilities was underreported by 40%. While the potential underreporting for mega-events stadiums was not directly investigated, it is a topic that should be considered.

Summary

In general, the assumption that previously inaccessible resources are available appears to be rather limited since any "new" external resources are routinely dwarfed by complementary public investments. Furthermore, these public investments are generally financed through additional debt commitments, not necessarily through existing "politically clogged" resources. This likely implies tax hikes or budget cuts down the road. Therefore, it appears that mega-events will only be beneficial if the purported net benefits surpass those of alternative publicly financed projects. The main caveat to this might stem from a distributional argument in which host cities might benefit from cross-subsidization by national or regional governments. However, even in these cases, the net level of the investments might not be justified.

1.2. Multiplicative effect

Another assumption is that the investments associated to the event will generate a multiplicative effect across the economy (primarily through additional jobs creation), but there are reasons to believe that this effect may also be overstated. To start, as Matheson (2009) argues, the economic multipliers used in most ex-ante analyses are calculated using complex input-output tables. These tables assume specific inter-industry relationships within regions and are based upon an economic area's normal production patterns. However, during mega-events, these inter-industry relationships may not hold, rendering the multipliers highly inaccurate.

For instance, the organization of these events is a major endeavor that may require productive resources vastly superior to local supply. It is unlikely that existing capacity would be able to sustain previous construction activity while

at the same time handling the additional work associated with multi-billion dollar specialized projects. Either existing resources would need to be re-prioritized from other construction (which at best entails a zero net impact on the economy). What is more likely is that a substantial part of the work is outsourced from the local economy, implying an outflow of money away from the region.

Moreover, Matheson (2009) argues that there might be other significant leakages that cause expected multiplicative effects to be overstated. For example, hotels, many of which are national or even global chains, routinely raise their prices during mega-events while wages paid to hotel's worker remain unchanged. This lack of detectable effect on income from mega-events has also been suggested by Hagn and Maennig (2008, 2009).

This might cause a drop in the expected multiplier effect because capital income is far less likely to stay within the geographic area than earned labor. Hence, increased profits for non-local capital owners would turn into higher than normal leakages of income. Additionally, Baade and Matheson (2004) state that additional leakages might vary depending on the state of the economy. If the host economy is at or near full employment, it may be that the labor necessary to prepare for the event might reside in other communities where a labor surplus exists, further limiting the potential multiplier effect.

Given these findings, there's reason to believe that the jobs created by mega-events are also bound to be fewer than originally estimated ex-ante. Baade and Matheson (2002) examine job creation associated to the 1984 and 1996 Olympics. They find that if all unexplained increases in employment were attributed to these events (a substantial assumption on its own right) then the 1984 Olympics led to 5,000 new jobs during the year of the event and the 1996 Olympics led to a cumulative increase of somewhere between 3,500 jobs and 42,000 jobs during the 1994-96 period. This latter estimate not only demonstrates a large degree of uncertainty but also shows that, even in the most optimistic scenario, the potential job creation is roughly half of the 77,000 originally predicted by the Atlanta Olympic Organizing Committee.

Similarly, Feddersen and Maennig (2010a) find, using local data, no positive effects from the 2006 World Cup in Germany on employment. This is consistent with a previous finding from Hagn and Maennig (2009) that the effect on unemployment in the twelve match venues of the 2006 World Cup isn't significantly different from zero[35]. Finally, Hagn and Maennig (2008) did not find evidence that the 1974 World Cup in Germany generated employment

[35] It should be noted that Hagn and Maennig (2009) and Baade and Matheson (2004) argue that is difficult to strictly reject the claims made by boosters and promoters. This is because, in many cases, the effects claimed are so close to zero at the scale at which data is available. This means that results that would generally be interpreted to mean that there are no effects on unemployment could be interpreted to mean that the claims made by boosters could not be refuted.

effects positively different from zero in the host cities in the short term or long term.

These findings also hold for other major football events outside of Germany. Baumann, Engelhardt and Matheson (2012) found no statistically significant increase in employment in the cities that hosted the 1994 United States World Cup. Lastly, Nedelkoska (Forthcoming) attempted to identify impact of the 2000 Euro Cup on employment density[36] and found that Belgian and Dutch that served as hosts on average decreased their employment density by only 1.3% relative to their counterfactual regions.

Zimbalist (2015) summarizes these and other ex-post impact studies in the following way: " In sixteen cases, the games were found to have no statistically significant effect on employment or income, in seven cases a modest positive effect on income or short-run employment was found, and in three cases a negative effect on income was found. Where there was a modest short-term positive employment effect, it was in each case a fraction of the officially projected effect and must be measured against the large public investment in all cases, except Los Angeles, where public funding was diminutive".

Hotchkiss, Moore and Zobay (2003) presented one of the few studies in which the expected impact was surpassed by the actual impact. The authors found that areas that hosted the 1996 Atlanta Olympics experienced a growth of 293,000 jobs, significantly higher than the previously mentioned 77,000 jobs. Nonetheless, when considering employment growth in Atlanta and the surrounding areas, this was just 0.2 percent higher than would have been expected for the 1991-96 period. Additionally, the authors did not found any significant effect on wages. Furthermore, Feddersen and Maennig (2009) attempted to confirm these findings and address some methodological concerns with their approach. The authors find that, after adjusting the specification to correct for potential distortions in the original model, the existence of a positive Olympic effect is no longer clear and could not be confirmed.

Summary

Overall, most of the ex-post literature on multiplicative effects of mega-events appears to show that ex-ante multiplicative effects are significantly overestimated and that in practice these effects are not distinctly different from zero.

Part of this phenomenon might be explained by the inappropriate use of multipliers in ex-ante estimates as the assumptions behind the construction of these multipliers do not tend to hold for mega-events or even other major professional sports endeavors. Given the specific dynamics of these activities and their sheer scale, the use of multipliers fails to account for leakages and

[36] Employment per 1000 inhabitants

the strategic response of stakeholders to what is considered to be a temporary demand shock on labor.

It should be noted that even though there's very little ex-post evidence that supports the promotional claim that these activities generate new employment, these arguments are regularly touted by events promoters. Siegfried and Zimbalist (2002) claim that a simple answer for this is that job creation is a persuasive argument, even if an incorrect one. This is the case because the creation of jobs is perceived as an easily verifiable benefit to those who are most needy - the unemployed - which may have strong appeal for much of the public.

1.3. Revenues

Another assumption made in promotional studies is that the event may facilitate the flow of different sources of revenues towards the host region. These mechanisms could be classified as (i) event-specific revenue from ticketing, merchandising and broadcasting and (ii) event- related expenditures made by tourists and locals on accommodations, transport, food and beverages. In theory, it could be argued that these events could lead to increased tax collection both from sales associated with the event and from sales not necessarily directly related to the event. Furthermore, the more optimistic ex-ante studies posit that this added economic activity becomes "the new normal" after the event and be sustained over time.

i. Event-specific revenues

The flow of event-specific revenues to local and national governments is minimal or nonexistent. It is widely known that the supranational organizations overseeing the events have the rights to most, if not all, revenue generated through ticketing, merchandising and broadcasting. For instance, starting in the 2010 World Cup cycle, FIFA stopped sharing broadcast, sponsorship, merchandising or ticketing revenues with hosts. FIFA now covers an agreed upon operational budget, but keeps all these sources of revenue.

For the four-year cycle that included the 2014 World Cup in Brazil, this meant that FIFA received USD 5.14 billion in World Cup-related revenue while it incurred USD 2.22 billion of World Cup-related expenses. Only USD 453 million of these expenses were contributions to the local organizing committee. Furthermore, as previously mentioned, these contributions were meant exclusively to cover other operational expenses and they do not entail any form of profit sharing system.

In the case of the four-year cycle that included the 2010 World Cup in South Africa, FIFA received USD 3.89 billion in World Cup-related revenue and incurred USD 1.30 billion of World Cup-related expenses. Meanwhile, its contributions to the local organizing committee totaled in USD 226 million. This means that on average, for the last two cycles, FIFA's World Cup-related

revenue has been 2.6 times its World Cup-related expenditure and almost 20 times its contributions to the host's organizing committee.

Though to a lesser degree, Olympic hosts also fail to fully reap the revenues generated by the event. According to the 2014 Olympic Marketing Fact File (International Olympic Committee 2014), the IOC manages broadcast partnerships, the Olympic Partnership (TOP) worldwide sponsorship programme and IOC official supplier and licensing programme. The local organizing committees are left to manage domestic sponsorship, ticketing and licensing programmes. However, the IOC makes a contribution from the revenues raised through broadcast agreements and sponsorship program to support the Olympic Games.

If this IOC contribution is taken into account as a revenue sharing mechanism, then you could argue that the IOC shared with the Local Organizing Committee of the 2012 London Olympics approximately two thirds of total revenues. Nonetheless, under this current revenue sharing agreement, the London Organizing Committee, which only considers operational costs and not infrastructure investments and other key expenses, just managed to break even. Zimbalist (2015) argues that was only possible due to a USD 1.67 billion infusion of public funds.

What perhaps is more troubling is that, even if revenues were shared in a radically different way, the net benefit might still be negative for hosts. For the 2012 London Olympics, the non-organizing committee budget for associated infrastructure work and other costs reached approximately USD 15 billion, most of which was public money (International Olympic Committee 2012). Meanwhile, the total revenues originating from the Olympics were approximately USD 5.5 billion, indicating that the non-organizing committee budget would be 2.7 times the total revenues. Once organizing expenditures are considered, the cost of hosting the London Olympics was 3.7 times all revenues generated by it.

There is a similar case to be made for the Brazil World Cup, which generated total revenues around USD 5.14 billion and required public investment somewhere between USD 10 and 15 billion. Similarly, the 2008 Beijing Olympics generated revenues of around USD 5 billion and, though this allowed for a reported operational profit in excess of USD 150 million, the infrastructure buildup associated to the event has been estimated on USD 40 billion. That is over eight times the total revenue generated. The 2010 South Africa World Cup is one of the few recent instances in which the total revenue generated by the event (USD 3.89 billion) was marginally larger than the total reported public investments (USD 3.5 billion). Even in that instance, once FIFA expenses are considered (USD 1.3 billion), the event comes at a net-loss if one disregards distributional considerations.

In essence, there appears to be two major issues with respect to event-specific revenues. First, in the case of the World Cup, the majority of these revenues are simply not shared with hosts. For the Olympics, somewhere between half and two-thirds are shared with hosts, despite the fact that they are burdened

with onerous capital investments as part of their winning bids. Second, even if revenues were shared radically different and hosts were able to accrue the totality of the revenues generated, these might not be able to cover the expenses required to host the event. In the most extreme recent examples, total revenues might represent between 10% and 30% of the total cost of hosting a major sporting events. Hence, any revenue-related benefit for hosts is unlikely to emanate from direct event-specific revenues and would be contingent on other secondary sources of revenues.

ii. Event-related expenditures

In addition to event-specific revenues, it is argued that hosts might stand to benefit from additional spending associated with the event. Examples of these types of expenditures might include items such as consumption of food and beverages in the arena and additional parking or transportation investments. Also, it could be argued that the festive mood around the event would influence locals and visitors not necessarily attending the event to increase spending in other social and leisure activities loosely associated to the event itself.

According to Feddersen and Maennig (2010), there are a number of studies that have focused on taxable sales or sales tax collection data in order to understand the impact of mega-events. The prevalence of these studies is partly because of the quality of these data. When available, this type of information tends to be collected at a finer geographic disaggregation and in shorter time frames. It is also generally collected with more precision and with a clearer connection to sports facilities and events. Additionally, according to Matheson (2006), this type of data serves as a good indicator of economic well-being as it represents 40% of overall economic activity. These approach used in these studies might serve as the best available proxy to understand the impact of mega-events on event-related expenditures.

Allmers and Maennig (2009) examined the effects on retail sales from the 1998 France World Cup and the 2006 Germany World Cup but failed to find any statistically significant impact. Along the same lines, Porter and Fletcher (2008) studied the 1996 Atlanta Summer Olympic Games and the 2002 Salt Lake City Winter Olympic games and found no significant impacts on taxable sales.

Similarly, Baade, Baumann and Matheson (2005) conducted a detailed regression analysis of taxable sales in the state of Florida in the United States between 1980 and 2005 to estimate the impact of large scale sporting events on economic activity.

During this period, the authors evaluated four metropolitan statistical areas (Miami-Fort Lauderdale-West Palm Beach, Tampa-St.Petersburg, Orlando and Jacksonville) and 19 major sporting events (seven NFL Super Bowls, two NHL Stanley Cups, two NHL All-Star games, two MLB World Series, two NBA All-Star games, one NBA Finals, one NCAA Men's Basketball Final Four, one MLS All-Star game and one set of games of the 1994 World Cup). The authors used the change in taxable sales in the specific metropolitan statistical area as a

percent of the taxable sales in the rest of Florida as their measure. If mega-events have a positive impact on a region's economy, we would expect to see a consistent pattern of increasing taxable sales periods around these events.

According to the Baade, Baumann, and Matheson (2005), 12 of the 19 events, including the World Cup, had in fact a negative coefficient, indicating that the taxable sales ratio fell below predicted levels during the period in which the event took place. Overall this corresponds to a decrease in taxable sales of USD 34.4 million (in 2004 dollars) per event in a given metropolitan statistical area during this 25 year period. It should be noted that, none of the events had a statistically significant impact different from zero at 5 percent, so the decrease in sales should be interpreted with care.

Baade, Baumann and Matheson (2010) also performed an analysis of taxable sales in Salt Lake City during the 2002 Winter Olympic Games. The authors found that some industries experienced a statistically significant increase in taxable sales, namely hotels (USD 51.9 million) and restaurants (USD 18.7 million). However, these gains are likely offset by losses in other industries. For instance, the authors point to a statistically significant loss in taxable sales at general merchandise stores of USD 167.4 million.

Overall, for the 2002 Winter Olympic, there was no statistically significant relationship between the event and taxable sales. This indicates that, even though some industries might stand to benefit from a major event, the overall impact might be neutral or even negative. Their results also suggests it would be demonstratively smaller than the purported investments associated to the event. It is important to note that the distributional impact across industries might heavily influence the incentives for key players in these beneficiary industries to actively promote mega-events.

These studies agree that the impact of mega-events through retail sales is not statistically significant. However, these findings might seem counterintuitive given the level of activity that is usually perceived around these major sporting events, a perception that is taken as a fundamental assumption for *ex-ante* studies. Matheson (2006) argues that there are three theoretical limitations to these *ex-ante* assumptions: the substitution effect, crowding out and leakages. Of these, the substitution effect and crowding out limitations might be particularly useful to make sense of the counterintuitive results with respect to sales.

The substitution effect occurs when individuals in the local economy spend money on a mega-event rather than in other goods and services. It is likely that individuals have a limited budget determined prior to the event destined towards entertainment and leisure. When they spend on the mega-event, they re-allocate it from other activities. Even when some individuals reallocate from other parts of their budget towards mega-event consumption, it is unlikely that overall savings rate of the local economy will change as a by-product of the event. Hence, rather than a significant increase in taxable sales, what is likely to occur is a redistribution of existing local sales.

This issue can be compounded with what has been described by Meannig and Du Plessis (2007) as a "couch potato" effect. The "couch potato" effect describes what happens if local consumers actually reduce their regular consumption as a consequence of the event. Perhaps they choose to work from home, avoid the areas where the event is taking place or even leave town in order to reduce their exposure to traffic, big crowds or potential price gouging during the event. It might also be the case that substantial areas of retail districts are cordoned off during the event for security concerns or just become too busy for regular customers. When considering the substitution effect and the "couch potato" effect, it is easier to understand why, at least when considering locals, mega-events might have a neutral or even a negative effect on retail sales. Therefore, if there is to be any positive impact on retail-sales, this depends on expenditures made by visitors.

As a matter of fact, Coates and Depken (2011) argue that the impact of bigger events may be contingent on the interaction of two offsetting behaviors. On one hand, more visitors come to view the event, which can increase local spending. On the other hand, locals might be influenced to avoid the event or leave town altogether, which would put downward pressure on local spending. If local spending falls faster than external spending from out-of-town increases, the net impact of the event would be negative, even if the gross spending on the event was high.

Barget and Gouget (2013) provide further evidence on the importance of foreign spectators' expenditure. These authors argue that one of the key determinants of regional disparities of impact for the 2007 Rugby World Cup in France was the structure of the nationalities that attended matches in a region. More precisely, the author's state that regions that were able to attract foreigners with high income and high level of expenditure (whether because they hosted top matches or matches featuring the home country of these foreigners) would performed considerably better.

Here's where Matheson's (2006) crowding out effect comes into play. According to him, mega-events can cause a sense of congestion that might discourage regular visitors from coming to a city during that time. Many major events are hosted in regions that are already popular destinations and that tend to be at or near capacity during peak seasons (generally the time mega-events are hosted in the northern hemisphere). This might cause event visitors to replace regular visitors rather than generate new ones.

The directional impact of the crowding out effect is uncertain since it depends on the consumption patterns of mega-event visitors compared to traditional visitors. However, given that for some events (such as the World Cup) part of the travel expenditure of the visitors is appropriated by supranational organizations (i.e.: FIFA) through ticketing, it stands to reason that the net impact for hosts might be neutral at best or even possibly negative.

Furthermore, Leeds (2008) studies the spillover effect of the 2002 Salt Lake City Winter Olympics to the neighboring ski industry in Colorado. He found that these games added over USD 160 million in net retail sales to the

economies of the sixteen Colorado counties with ski resorts. The author argues that, while the games did little for the economies of Salt Lake City and Utah, it had a large positive impact on neighboring Colorado through a displacement or crowding out effect. Visitors that would have traditionally gone to Salt Lake City for skiing purposes might have chosen to avoid this destination during the Olympics, choosing instead to go to Colorado. This would allow Colorado to free-ride on Salt Lake City's Olympics. Therefore, Salt Lake City not only failed to reap the benefits of the Olympics but might have even supported a competing ski destination. Even though these findings do not relate to the World Cups or Summer Olympics, they might be very informative about the underlying dynamics of large sporting events.

Some recent policy trends might complicate this issue further. As stated previously, the substitution effect and the "couch potato" effect significantly increase the relevance of foreign visitors in order to promote net impact on sales. However, during the 2014 World Cup in Brazil, only 69% of tickets were sold directly to the general public, two-thirds of which went to Brazilian residents. This was partly due to the fact that organizers had made a substantial number of tickets available exclusively to Brazilian residents, potentially to promote local support for the games. While this may be seen as "fair" given that Brazilian nationals would end up paying for the event, the additional revenue that could've been generated through foreign visitors' expenditures was likely severely constrained by this policy.

To sum up, there's little evidence to support the thesis that mega-events trigger substantial increases in event-related sales. Even though gross sales during the event might be very high. The net impact might be contingent on the scale of the substitution effect, the "couch potato" effect, the crowding-out effect and the subsequent consumption patterns of event visitors. Therefore, it is more likely for an economy to see a distributional impact of expenditure across industries than an increase in sales overall. More so, recent trends raise concerns that the impact through this channel could in theory end up being negative for host regions.

iii. Tax collection

If there's a lack of evidence signaling significant positive impact of mega-events on direct and indirect revenues, then we shouldn't be able to find significant evidence suggesting a relevant increase on tax collection. On the contrary, there's a possibility, given some of the requirements put forth by organizations like FIFA and IOC, that hosting some mega-events hampers tax collections.

De Nooij, van den Berg and Koopmans (2010) writes that FIFA requests organizing countries to extend a tax exemption for all its activities. More specifically, according to *Forbes*, FIFA requires a comprehensive tax exemption for the organization and further parties involved in the hosting and staging of the event. This exemption includes corporate taxes, income taxes, value added taxes and all other forms of taxation. During the 2014 Brazil World Cup, this generated some resistance as Brazil's Internal Revenue

Service estimated that these exemptions for FIFA would cost the country USD 250 million in lost revenues. Others estimate the figure to be twice as large.

The IOC also requires some special tax treatment. According to Zimbalist (2015), this includes tax exemption on earnings of corporate partners and foreign nationals participating in the Olympics. In the case of the 2012 Summer Olympic Games, Hunt (2012) estimated the cost of these exemptions to the British treasury at USD 130 million.

It should be noted that, given the non-profit status of organizations like FIFA and the IOC, it is likely that the surplus generated as part of their activities would be considered tax exempt in most countries regardless of the requirements they impose. This makes the calculation of these estimated lost taxes particularly difficult.

However, these exemptions are not limited to those activities strictly related to the event such as broadcasting rights or ticket sales. It also extends to other more peripheral activities such as hotel rooms rented through FIFA.

This is important, because unlike broadcasting rights and ticket sales, the host would have been able to collect taxes on those hotel rooms in absence of the event. De Nooij, van den Berg and Koopmans (2010) state that FIFA claims approximately 60,000 rooms for itself, the media and sponsors for the duration of the event, which on its own could easily account to more than USD 25 million in foregone tax revenue.

In summary, there is no available *ex-post* evidence that demonstrates that mega-events trigger increases in tax collections. Furthermore, tax exemptions extended to supranational organizations and their partners might tilt the distributional balance of revenues further in favor of these organizations over the hosts. Lastly, given that these exemptions are not exclusively limited to event-specific activities or operational surplus, they might result in a net loss in tax revenues for hosts.

iv. Sustained long-term impact

Given the lack of substantial evidence to back-up the claim of impact on short-term direct or indirect revenues, it is unlikely that there would be evidence to substantiate sustained long-term impacts on this front. In fact, there are not many studies that tackle this question.

von Rekowsky (2013) reviewed this sparse literature on mega-events between 1990 and 2010 and found no meaningful lasting economic benefits as a by-product of hosting the event. The author posits that one potential explanation for this might be that mega-events investments do not tend to tackle the underlying binding constraints limiting growth, hence it is unlikely to significantly alter the long-term outlook of the host region.

Lastly, Billings and Holladay (2012) analyzed the long-term impact of hosting mega-events for all Summer Olympics between 1956 and 2004. The authors controlled for the self-selection of cities that host these types of events by using a difference-in-difference methodology leveraging other finalist cities as

a control group. After this, they don't find any statistically significant long-term impact on measures of real GDP per capita. In this case, the authors argue that host cities likely lose any potential long-term benefits during the competitive bidding process as the investments required to win a bid and costs associated to carry out the preparation might be larger than the purported benefits. It should be noted that even though in the aggregate these investments and expenditures seem to do away with the potential benefits, some investments associated to the event might have potential positive impact (i.e.: improved transportation). Further research on this might be beneficial for policy purposes.

While there aren't many studies on the long-term impact of mega-events, the few that are available do not provide evidence that these events have a positive long-term effect on economic activity. Furthermore, these studies tend to argue that the investments and expenditures carried out in preparation of the event tend to outweigh the benefits and do not tackle structural constraints of the economy, hence tend to be on average unproductive investments.

Summary

The vast majority of the literature on mega-events fails to find evidence between mega-events and increased economic activity, whether directly or indirectly in the short-term or long-run.

With respect to direct impact, there appears to be two major issues. First, host regions do not receive a large portion of the potential revenues, despite the fact that they are significantly burdened with capital investments in order to prepare for the event. Second, even if hosts were able to accrue the totality of the revenues generated, these might not be able to cover the expenses required to host the event, much less generate additional positive economic impact.

There are also a number of reasons to question indirect impacts. With respect to increases in event-related sales, the literature seems to signal more towards a shifting of expenditures across industries than an increase in sales overall. More so, recent trends focused on limiting ticket sales to local patrons raise concerns that the impact through this channel could in theory be negative for host regions. Similarly, there is no available *ex-post* evidence that demonstrates that mega-events trigger increases in tax collections or that these events generate lasting long-term impact.

Overall, the supposed economic benefits of hosting an event are vastly overstated in ex-ante studies. In practice, the real benefits are outweighed by the costs associated with the event preparation. This has a number of implications for revenue sharing schemes, ticketing policies, tax benefits for supranational organizations, and bidding process and requirements.

Section 2. Increased Tourist Arrivals

In light of the evidence undermining the argument that sports events have a broad positive economic impact, some argue that perhaps the impact of mega-events is more apparent in the performance of a specific industry like tourism.

More precisely, mega-events are presumed to positively influence tourist arrivals and potentially tourist spending. The mechanism through which this potential impact would occur is complementary to the one previously described as it is expected that tourists make up a significant part of the event-related expenditure.

In this case, the assumption is that tourists that otherwise wouldn't have visited the region decide to do so in order to attend the event. Furthermore, these event-related tourists would not only spend money in lodging and other leisure activities, as other tourists would do, but presumably they would also spend a sizable amount in ticketing, merchandising and memorabilia related to the event. For instance, according to surveys led by Brazil's Ministry of Tourism they estimated that foreign tourists visiting the country for the World Cup would attend on average four World Cup matches and spend around USD 2,500 during their stay in Brazil. The tourism ministry estimates that these visitors would add USD 3.03 billion to Brazil's economy. Moreover, the Minister of Tourism Vinicius Lages argued that the impact of these expenditures could "double the anticipated figure if we consider the multiplier effect of these resources in the Brazilian economy."

Additionally, the thinking is that these event-related tourists would go home and recommend the country to friends and family, hence expanding the future base of tourists. For instance, Embratur, the Brazilian tourism board, reported that over a million foreign visitors from 203 countries visited Brazil for the 2014 World Cup. According to a survey, 95% of them indicated they would return to the country for a holiday. This would facilitate Brazil's goal of doubling the yearly number of foreign visitors by 2020.

It is also expected that the substantial TV coverage around the event would expose the host's culture, natural beauty, and tourist opportunities to a worldwide audience. In theory, this would improve its reputational standing as a global destination and potentially attract new tourists for years to come. More precisely, according to FIFA, 98,087 hours of broadcast were dedicated to the 2014 FIFA World Cup across 207 territories, reaching a global in-home television audience of 3.2 billion viewers. Similarly, according to the IOC, there were 99,982 hours of global broadcast devoted to the 2012 Olympic Games across 220 territories reaching a projected 3.6 billion viewers.[37]. FIFA, the IOC, and host country tourism ministries assume that such extensive exposure to the region would motivate future travelers to visit the mega-event host.

[37] It should be noted that viewers are defined as those that saw at least one minute of coverage on television. According to the IOC 74.4% of viewers that saw one minute of coverage continued to watch for at least 15 consecutive minutes.

Finally, it is assumed that the preparation for the event would serve as a prime opportunity to invest in tourism-related capacities, such as improved airports, public transportation systems, and hotel offerings. Similarly, it would also serve as an opportunity to acquire certain management and language capabilities that could also serve as a competitive advantage vis-à-vis other potential destinations. For instance, Education First, the Brazilian Olympic Committee and the Brazilian Ministry of Education partnered in an effort to teach 1 million people English before the 2016 Rio Olympics.

There are a number of ex-post evaluations geared towards addressing the claims of positive tourism effects. For the majority of these, ex-post findings differ significantly from ex-ante predictions. There appear to be some structural limitations limit impact of this type of event on tourism activity.

2.1. Increases in the number of visitors and tourism spending

Increased tourist attraction is a common feature of ex-ante estimates of the impact of mega-events. The case of the 1992 Barcelona Summer Olympics and the reinvention of the city as a major European tourist hub is consistently touted as the primary example of leveraging mega-events for long-term tourism growth.

According to Zimbalist (2015), the growth of bed nights[38] in Barcelona between 1990 and 1994 outperformed the growth of all major European cities during that period. Furthermore, this trend has continued even after 1993. This stellar performance is commonly attributed, particularly in the sports industry, to the 1992 Summer Olympics.

However, besides the case of Barcelona, the host city or country's experience regarding tourism appears to be mixed at best. During the 2008 Olympic Games in Beijing, the number of bed nights dropped 39% on a year to year basis (ETOA 2010). Similarly, the 2012 London Olympics, the 2010 Vancouver Winter Olympics and the 2002 South Korea World Cup have been associated with a net decrease in the number of foreign visitors. Meanwhile, the Brazil 2014 World Cup and Sidney's 2000 Olympics have been associated with a gross increase of foreign visitors (Zimbalist 2015).

From these raw numbers, it is unclear if the events themselves influenced tourism growth or simply happened to correlate without major causal relations. It should be noted that many host cities are attractive tourist destinations even without mega-events, which may be pursuing long-term tourist strategies to enhance or sustain the flow of tourists independently of the mega-event. Furthermore, international travel is bound to be greatly impacted by exogenous causes (i.e. global economic cycles, terrorism concerns, health epidemics, etc.) that may confound the results. Disentangling the specific impact of mega-events from these alternative explanations is precisely the goal of ex-post evaluations.

[38] The number of tourists multiplied by the average number of nights per tourist

The majority of these evaluations have tried to outline the impact that a specific mega-event had on a specific region at a specific point in time. Others studies have tried to answer these questions in a broader fashion and have attempted to understand the average effect of these types of events across a number of different contexts. These different types of studies provide different, yet perhaps complementary insights.

i. Event-specific evaluations of the impact of mega-events on tourism

The majority of event-specific evaluations aren't optimistic. Porter and Fletcher (2008) found no statistically significant change in hotel occupancy or airport traffic during the 1996 games in Atlanta. They only found significant increases in hotel rates, many of which were not local chains and hence syphoned resources away from the host economy. Edds (2012) finds that the 1992, 1996 and 2000 Olympic Games did not have a positive impact on change in tourism GDP in states or regions where the Games took place when compared with similar regions without the events. Gruben, Moss and Moss (2012) find no statistically significant increase in American air passengers to the host cities of the Summer Olympics in 1992, 2004 and 2008 as well as the Winter Olympics in 2006. This is significant since the United States is the main media market of the Olympics and one of the largest global sources of international tourists. They do find increased travel to the host city of the 2000 Summer Olympics and the hosts of the 1992, 1994 and 2010 Winter Olympics. However, in all these cases, the impact is short-lived and is not sustained after the games have passed.

In this same vein, it appears that even when the ex-post studies do find some positive impact, these generally fail to live up to lofty pre-event expectations. Allmers and Maennig (2009) fail to find a statistically significant impact on overnight hotel stays or national tourism income during the 1998 France World Cup. For the case of the 2006 Germany World Cup, they do find a statistically significant impact on foreign hotel nights (700,000 additional nights). However, this translated to approximately 100,000 hotel tourists, which falls significantly short of the 3.3 million foreign tourists estimated by the German Hotel and Catering Association.

du Plessis and Venter (2010) estimate the impact of tourism arrivals and expenditures associated with the 2010 World Cup in South Africa to be 0.1% of GDP, which is sobering compared with estimates prepared by the consultancy group Grant Thornton. They projected the event to generate an impact equivalent to 3.6% of GDP. Similarly, Matheson, Peeters and Szymanski (2012) estimate that up to 390,000 foreign visitors traveled to South Africa in June and July of 2010 for the World Cup. Out of these, 210,000 are estimated to have originated outside of the Southern African Development Community and thus represent the type of high-spending tourist modeled in typical ex-ante studies. While impressive, even these results fall short of the Grant Thornton estimates of over 480,000 international visitors.

In general, the pre-event estimates of visitors are regularly overestimated. According to Zimbalist (2015), Athens received only 13% of the daily foreign

tourists it anticipated for the 2004 Olympic Games. South Korea only received 63% of its estimates for the 2002 World Cup and Sydney 75% of its estimates for the 2000 Olympics. What could be causing this systematic overestimation?

The literature on the subject argues that ex-ante estimates tend to underestimate displacement effects of the mega-event. It posits three possible problems with ex-ante estimates: (i) time-switching or temporal displacement, (ii) crowding out or destination displacement and (iii) pricing-out.

First, Matheson (2006) defines time-switching as the behavior of visitors that had plans to visit a destination at some point in the future (i.e.: a long-desired vacation, a business trip, etc.), but decided to switch the date of those future plans in order for their travel to coincide with the mega-event. Even though these travelers indeed scheduled their visit at the time of mega-event, it is hard to argue that these new visitors were spurred primarily due to itself since these tourists had previously planned their visit to the region. du Plessis and Maennig (2010) state that the additional visitors attending the 2004 Euro Cup in Portugal and the 2006 World Cup in the months of June and July were offset by lower number of visitors in other months. They interpret this as a sign of strategic time-switching by some visitors.

Secondly, with regards to crowding out, Matheson (2006) describes it as crowds caused by the mega-event which discourage regular or would be visitors from making a trip to the host region during the event. Matheson (2006) argues that the vast majority of destinations chosen as hosts for mega-events are on their own right tourist hotspots.

Moreover, events like the World Cup and the Summer Olympics are usually held at some point between the months of June and August, which is usually considered as a peak season for a number of travel destinations. Winter Olympics also fit this pattern since they coincide with peak travel periods to winter resort destinations. Hence, the intuition behind the crowding out hypothesis is that these events tend to occur when the host destinations are at capacity. As a result, in order to accommodate for event-specific tourists, some regular visitors might be displaced.

One concrete example of this type of behavior was mentioned above. More precisely, Leeds (2008) studied the spillover effect of the 2002 Salt Lake City Winter Olympics to the neighboring ski industry in Colorado. He found that these games added over USD 160 million in net retail sales to the economies of the sixteen Colorado counties with ski resorts. According to the author, visitors that would have traditionally gone to Salt Lake City for skiing purposes, might have chosen to avoid this destination during the Olympics and allowed Colorado to free-ride on Salt Lake City's Olympics.

Thirdly, regarding pricing-out, Porter (1999) argues that input suppliers tend to increase prices in response to higher levels of demand. This creates downward pressure on the total number of visitors. The argument is that when faced with additional tourist demand, instead of substantially expanding capacity, providers, such as hotels and airlines, instead strategically hike

prices. Higher prices allows them to extract more revenue from the visitors that do make the trip, but they also price out a number of would be visitors. This might make sense for tourism providers as these mega-events have a duration of just a few weeks that simply may not warrant a long-term expansion in capacity.

This strategic response, even though potentially worthwhile for individual economic agents, is perceived to be detrimental to the local host economy as these price hikes are not associated with "multiplier spending". In practice, the added revenue generally tends to go towards profits for transnational hotel chains and airlines and not to increased salaries, investments or intermediate demand in the local economy.

In a review of the 1996 Summer Olympics and the 2002 Winter Olympics, Porter and Fletcher (2008), argue that the majority of the increased demand spawned by the mega-events was absorbed by the hotel industry via price increases. They estimate that hotel rates in Atlanta increased by 43% and those in Salt Lake City increased by 140%.

du Plessis and Maennig (2011), also studied this phenomenon, and argue that price hikes in flights and hotels for the 2010 World Cup in South Africa had an adverse effect on tourism. The authors argue that prices for flights to South Africa during the dates of the tournament were three times higher than normal bookings made between January and March of 2010. Even after they dropped substantially later on, they remained 50% higher than normal. They find evidence for similar pricing strategies in accommodations and car rentals where rates doubled or tripled. Given the slack in the local labor market, these increased prices did not translate to increases in salaries, but rather likely translated into profits for capital owners. Overall, the authors argue that these pricing strategies, which may have been motivated on their own by overly optimistic ex-ante estimates and not even real demand, likely dampened the total tourist demand and caused South Africa to miss out on the opportunity of reaching a broader base of potential visitors. According to du Plessis and Maennig (2011), this might be construed as a self-defeating prophecy since overly optimistic ex-ante estimates lead to strategic price hiking which in turn reduces overall tourist demand and causes the host region to fall substantially short of the expected tourist inflow.

In conjunction, these three possible explanations can shed some light on the fact that even when individual events do have statistically significant impact on tourism these routinely fall way short of the preceding expectations.

ii. Cross-country evaluations of the impact of mega-events on tourism

Recently, there have been a number of cross-country studies evaluating the impact of mega-events on tourist arrivals. Unlike event-specific, ex-post evaluations, these efforts attempt to go beyond the specific circumstances of a given event and try to identify overarching trends around mega-events. The evaluations carried out so far seem to be particularly informative on two

areas: (i) temporality and the direction of the impact of mega-events on tourism and (ii) Conditions that influence the size of the impact.

Regarding the temporality and direction of the impact, Fourie and Santana-Gallego (2011) estimate the effects of six sporting events (the Summer Olympics, the World Cup, the Winter Olympics, the Cricket World Cup, the Rugby World Cup and the Lions Tour) during the period between 1995 and 2006. They address 18 mega-events in total.

They find that on average a mega-event is associated with an 8% increase in tourism in the same year of the event. However, the results for each type of event are not the same. When teasing out the results for each type of event, the picture becomes a bit murkier. For instance, on average, hosting the Olympics is associated with a 15% increase in tourism; double that of an average mega-event. This is mainly driven by a 43% increase in tourism in Australia associated with the 2000 Sydney Olympics. Meanwhile, the 1996 Atlanta Olympics had a negligible impact in tourism for the United States and the 2004 Athens Olympics was associated with a 30% decrease in tourism for Greece. Similarly, the impact associated with the three World Cups in the database is not consistent.

Therefore, even though on average the impact might be positive, there appears to be significant volatility which signals that certain context-specific variables might have a significant impact on the end-result.

With respect to temporality, Fourie and Santana-Gallego (2010) make an insightful finding that on average the "legacy" of mega-events materializes before the actual event. The authors don't find evidence for statistically significant increases the three years following a mega-event, but they do find significant increases in the three years preceding an event. According to the authors, all things being equal, predicted tourism is 4 per cent higher three years before the event, 7 per cent two years before and 16 per cent the year before the event.

Teasing out the temporality question further, Song (2010) conducted another cross-country study considering the Olympics between 1950 and 2008 and found that the tourism boost of the Olympics is short-lived. It is primarily concentrated on the four years before and after hosting the event, which is consistent with Fourie and Santana-Gallego (2011). Nonetheless, Song (2010) also found that, in the long run, this impact not only vanishes but ends up being negative, which has profound implications for the way mega-events are expected to be leveraged for tourism purposes.

With respect to the question of conditions that influence the size of the impact, Fourie and Santana-Gallego (2011) make three important contributions related to (i) the source of tourist flows, (ii) seasonality and (iii) differential economic development. First off, the authors find that the vast majority of tourist inflows come from countries participating in the event. All else being equal, the authors find an estimated gain of 24% on tourist arrivals from participating countries and no significant difference from countries not participating. This is a relevant finding as the participant countries - and their

performance in the tournament - is determined by factors completely outside the host's control. For instance, Fourie and Santana-Gallego (2015) posit that the fact that France gained a last-minute, controversy laden, classification to the 2010 World Cup had an impact equivalent to 6,200 new jobs being created in the local economy. Put differently, a relatively random occurrence, such as scoring a last-minute dubious goal, allowed France to secure a berth for the World Cup in South Africa. This seemingly innocuous event, radically altered the profile of the type of tourists that would be traveling to the 2010 South Africa World Cup, as would-be visitors from Ireland, where substituted by would-be visitors from France. Given the differences in size and spending patterns between these two countries, this generated random event ended up being associated with a significant effect on the performance of the tourism sector in South Africa, which highlights how fickle these relationships can be.

Fourie and Santana-Gallego (2011) also find that hosting an event during peak season is associated with a 6% expected reduction of tourist arrivals of , while hosting an event off-season is associated with a 16% expected increase of tourist arrivals. This finding might provide additional evidence for the previously mentioned crowding out hypothesis. It might also help explain the vast disparity of predicted results between the Athens Olympics, which were held in Greece's peak season, and the Sydney Olympics, which were held in Australia's off peak season.

Lastly, regarding differences in economic development, Fourie and Santana-Gallego (2011) find that even though both OECD and non-OECD stand to benefit, ceteris paribus, from additional tourist inflow the year of the event, this impact might be larger for non-OECD countries (15%) than for OECD countries (9%). It is worth mentioning that there might be some selection bias baked in this result as OECD are more likely to host events with less tourist impact like the Winter Olympics and are more likely to host events in peak-season. Therefore, these last findings should be interpreted with particular caution.

Overall, these cross-country studies help make sense of much of the variance present in the event-specific studies, identify some of the underlying causes behind this variance and achieve a better understanding of the long-term implications of these types of events.

Summary

The case for increased tourist visitors and subsequent spending seems to be a mixed bag. While there does appear to be some evidence for statistically significant increases on tourist arrivals on some specific events, the results tend to be substantially lower than those predicted by ex-ante studies.

It seems as if ex-ante studies consistently underestimate the effect of three distinct sources of tourist displacement: (i) time-switching, (ii) crowding out and (iii) pricing out. Failing to appropriately incorporate these phenomena into the predictions, leads to an overshooting in the estimate of net new tourists and their inherent "multiplicative effect." This may overstate the potential impact of the mega-event and turn it into a self-defeating prophecy.

Furthermore, according to the existing literature, the effect on the mega-event on tourism is short-lived. It is primarily concentrated in the four years before and after the event. In the long-run, this effect disappears and might even turn negative.

Lastly, it seems as if certain conditions have a significant influence on the increase of tourist visitors associated to a mega-event. Among others, these include: (i) the type of event, (ii) the seasonality or timing of the event and (iii) the participant countries.

2.2. Image enhancements

Another potential benefit that is routinely mentioned by mega-event promoters focuses on the international perception of the host city. Mega-events attract massive global audiences and increasingly fill up news feeds as the event grows nearer. As mentioned previously, 98,087 hours of broadcast were dedicated to the 2014 FIFA World Cup across 207 territories, reaching a global in-home television audience of 3.2 billion viewers. Similarly, 99,982 hours of global broadcast time were devoted to the 2012 Olympic Games across 220 territories, reaching a projected 3.6 billion viewers.[39]

Mega-event promoters argue that this substantial exposure can be strategically leveraged to increase awareness of the host region as a destination and improve its global brand. Hence, promoters argue that, beyond the short term flow of tourists, hosts might become more competitive tourist destinations in the long term.

Ritchie and Smith (1991) produced one of the first studies on the relationship between mega-events and image enhancements. The authors evaluated the effect that the 1988 Calgary Winter Olympics had on the image of the city in two main markets: the United States and Europe and found that there was a significant increase on the awareness of the city and an important shift the way city was perceived by potential visitors.

In this same regard, Allmers and Maennig (2009) considered the potential branding impact that the 2006 World Cup in Germany had on the "Anholt Nation Brands Index" (NBI). This index is based on a quarterly survey that classifies nations on a number of qualities such as cultural, political, commercial and human assets as well as investment potential and tourist appeal. They find that when comparing 2006 to 2005 Germany improved in all the elements of the NBI. It is interesting they find that the biggest improvement was found around the statement “This country excels in sport.” This could have been spawned either by the successful hosting experience of Germany, the performance of their national team, or both.

[39] It should be noted that viewers are defined as those that saw at least one minute of coverage on television. According to the IOC 74.4% of viewers that saw one minute of coverage continued to watch for at least 15 consecutive minutes.

However, studies also show that these good signs should also be taken with caution. Solberg and Preuss (2007) argue that the promotion effect generated by the mega-event might be short-lived and hence attracting new tourists after the events have passed might require significant investments. Similarly, Ritchie and Smith (1991) state that changes in perception and awareness tend to be ephemeral, and hosts should anticipate a high rate of image decay after the event and hence should be ready to act proactively if they wish to sustain the exposure gained during the event. Oldenboom (2006) confirmed these concerns in his study on Euro 2000 in Belgium and the Netherlands. He found that, even though the event raised awareness of the host cities in the short term, as many as 55% of survey respondents did not even remember the names of the host nations one year after the tournament. Only 10% of the respondents in key source countries, meaning countries from where tourists originate, such as France, Italy, and Spain, remembered where Euro 1996 had been hosted 5 years after.

The European Tour Operators Association (ETOA) posits that one possible explanation for this phenomenon lies on the fact that sports viewers care more about the sport itself that the location. One might argue that vast media exposure creates temporary awareness, perhaps simply because the name of the event is associated to the host region but doesn't necessarily translate into real interest towards what the host region has to offer. ETOA further argues that a similar rationale might apply to sports visitors. ETOA notes that theme parks in Los Angeles showed a decline in revenues during the Olympics and that otherwise busy tourist attractions in Sydney also saw a decline during the Olympics. These two effects actually might reinforce each other since "word of mouth" recommendations are one of the main drivers for new visitors to a destination.

Whereas previous general purpose visitors would likely focus their comments to friends and family on the traditional tourist attractions of a destination, such as natural and cultural endowments, mega-event visitors would likely relate experiences associated to the sport itself. These sports-related "word of mouth" accounts might be less informative or attractive for potential future visitors. This type of awareness might not influence the long-term perception of the host region as a destination.

An additional potential explanation for the limited image effect associated to mega-events is the conditionality of the positive perception. Allmers and Maennig (2009) hypothesize that the impact of mega-events on host regions depends significantly on how the region is able to portray itself during the event.

Some of elements that impact this portrayal are under the control of the hosts, such as a timely delivery of stadiums, a seamless visitor experience, a spot-on logistical execution and a well-thought out marketing campaign. However, if the hosts fail in these respects, the "word of mouth" mechanism might negatively influence the image of the host regions once visitors return home.

Furthermore, other exogenous elements might negatively influence the image of the event, even if there is a good logistical execution. Terrorist threats, health scares, pollution and civil unrest are some of the factors that may fall outside the scope of an event organizing committee. All of these and that might influence negatively on the image of the host region despite an adequate event preparation. More so, the significant coverage might serve to highlight some of these issues that, in lieu of the mega-event, would have flown under the radar in international media.

Summary

The literature on image enhancement shows that there is some evidence that mega-events help boost general awareness of the host region and enhance its brand. However, this impact appears to be short-lived as hosts face intense awareness and image decay once the event has passed. This puts a significant pressure on hosts to not only execute the logistics of the event and minimize the negative impact of exogenous events, but also to proactively plan and invest to sustain the perception achieved during the event in the long term.

2.3. Building tourism capacity

One final positive outcome that is mentioned by event boosters relates to tourism capacity. In theory, the mega-event serves as an opportunity to increase and enhance key tourism infrastructure, which in turn would allow the host region to excel in the long run as a tourist destination.

Some of the enhancements, according to event boosters, might focus on tourist enablers such as airport and transportation improvements. Additionally, other attractions, such as museums and historical sights, might also benefit from increased investment during the preparation period. However, as we previously mentioned it is very hard to argue that these public investments were carried out exclusively due to the mega-event. In many cases, these are part of a broader infrastructure or tourist agendas that happens to coincide or overlap with mega-event preparation.

Alternatively, other types of enhancements to tourism infrastructure might be more easily related to mega-event preparation. More precisely, the IOC and FIFA as part of the hosting agreement usually require certain levels of hotel capacity, both in terms of quantity and quality. Therefore, the literature focusing on the ex-post impact of mega-events on tourism capacity tends to focus on this specific variable.

As with the other mechanisms through which mega-events can theoretically impact tourism, the literature offers a cautionary tale. Enhancing tourism capacity only makes sense if the resulting stock of accommodations matches the future expected flow of tourists, both in terms of quantity and type of tourist.

As we have argued before, there is strong evidence to suggest that in absence of a well thought out and well executed long-term tourism promotion agenda, the tourism related impacts of mega-event are likely to be very short lived.

Therefore, making significant investments in order to meet a brief spike in demand might prove to be a risky proposition. This helps better understand two trends observed in the most recent mega-events: price-hiking behavior by established tourism providers and the rise of temporary tourism accommodations.

Nonetheless, we have also observed in many mega-events a significant increase and change in the stock of tourist accommodations. This is partly influenced by the demands of supranational organizations like FIFA and the IOC, which impose minimum requirements on the quantity and quality of accommodations that exceed many of those that are already in place in cities. More so, there is an argument to be made that ex-ante estimates of tourism arrivals have an influence the investment decisions around the stock of accommodations. As we have argued before, these ex-ante estimates tend to be highly optimistic on the number of tourists, their spending profile, and the long-term tourism prospects, Making significant investments based on these ex-ante estimates is therefore unwise.

Solberg and Preuss (2007) point out the inherent risk of over-optimism in preparation for an event. The authors argue that even when mega-events stimulate tourism, excessive optimism can lead to investments that overshoot long-term demand. Furthermore, they caution that a positive shift in supply that outweighs the positive shift in demand can make the investments made unprofitable in the long-term.

The authors argue that this kind of excessive optimism has had an impact on the tourism industry in Sydney. They state that, in the preparation period for the 2000 Summer Olympic games (1994-2000), there was a 40% increase in hotel rooms. However, in the years following the Olympics, there was a steady decline in accommodations as many of the excess capacity rooms and hotels were repurposed for residential purposes. Similarly, employment and revenue per night fell in the years after the Olympics to levels below those found in the years prior to the event. All of these signals are interpreted by the authors as evidence that the demand after the event was too low to meet the supply shift that occurred during preparation.

Solberg and Preus (2007) also reviewed the hosting experiences of Barcelona, Seoul, and Atlanta. They found that all of these host cities experienced an increase in the number of hotel rooms prior to the mega-event, but much like Sydney, they also faced a decline in the average occupancy rate both during the Olympic year and the first years after the Games. Even Barcelona, which is generally perceived as the prime example of a host with a successful legacy, faced significant reductions in tourism in the years after the Olympics as visitor growth was unable to match supply growth. Eventually, the long-term plan paid off for Barcelona as their broader tourism strategy was able to balance the oversupply in capacity several years after the event had passed, but many hosting destinations are not so fortunate.

One of the prime examples of overshooting in accommodation capacity has been the case of Lillehammer, host of the 1994 Winter Olympics. Teigland

(1999) studied this case and found the pre-event estimates of tourism growth to be exceedingly optimistic. Real growth in tourist demand associated to event was 85% below the most optimistic forecast and 55% below the estimates in the regional plans. This excessive optimism was associated with a mismatch between the supply of accommodations and actual tourism growth. After the event, the average occupancy rate in the host region fell to 40%, significantly lower than the pre-event averages. This exerted downward pressure on prices and profitability, which in turn was linked with 40% of all full-service hotels going bankrupt after the event.

Summary

The literature on increased tourism capacity as a positive byproduct of mega-events offers further caution for prospective host regions. Even though enhancing the tourism infrastructure makes sense if the resulting stock matches the expected flow of tourists, it is rather unlikely that this will be achieved solely through mega-events.

Even when mega-events provide a stimulus to visitor growth, this tends to be temporary and well below expectations. Only when enhancements in capacity are considered within a broader tourism agenda do they tend to fulfill their promise. In the absence of this broader agenda, enhances in tourism capacity, in many cases motivated by excessive optimism, can have an adverse effect in the overall profitability of the sector. Oversupply can exert downwards pressure on occupation, prices, revenue and potentially wages and employment. As the Lillehammer case demonstrates, this can have devastating impacts.

Summary

Overall, it appears that in mega-events can have a positive influence on visitor growth and on the image of the host as a tourist destination. However, this positive impact tends to be short-lived, conditional and well below ex-ante expectations.

Most of the influence on visitor growth appears to be primarily concentrated in the four years before and after the event. Moreover, there is emerging evidence of pre-event impact, rather than impact afterwards. In fact, in the long-run, the positive influence of mega-events disappears. Similarly, after a brief boost in awareness and perception, hosts face rapid image decay after the event as the media exposure moves on to other destinations. If they are primarily focused on sports, event visitors returning home often have little to share with friends and family about the natural, cultural and entertainment endowments of the host region.

Furthermore, it appears any positive tourism impact depends on a number of other variables. In the case of visitor growth the positive impact is primarily contingent on (i) the type of event, (ii) the seasonality or timing of the event and (iii) participant countries in the event. In the case of awareness and perception, it depends on the ability of hosts to not only execute logistically during the event but also to minimize the negative impact of exogenous events.

Lastly, enhancements to tourist-related capacity may be worthwhile only when considered within a broader tourism agenda.

Finally, the positive influence on tourism, especially on visitor growth, tends to ultimately be well below expectations. It appears this is driven by the fact that ex-ante estimates systematically underestimate the impact of time switching, crowding out and pricing out. These effects might lead to an overshooting in the estimate of net new tourists and their inherent "multiplicative effect." In turn, this may overstate the potential impact of the mega-event, turning it into a self-defeating prophecy with substantial consequences for the host region as a whole and the tourism sector specifically.

These considerations might have implications for some of the following policy areas: (i) minimum requirements for accommodations, (ii) temporary accommodations, (iii) accommodations pricing policy and, (iv) level of public engagement in tourism related investments around mega-events.

Chapter 1 Furthermore, in light of these types of insights it might be necessary to spark a broader discussion on the pertinence of enhancing tourism through mega-event investments in lieu of other more direct promotion schemes. Teigland (1999) explored this question in his review of the Lillehammer experience. He finds that the Winter Olympics cost on average more than 100 times the amount invested in a "focused decentralization" strategy in twenty selected destinations, but had only twice the effect on guest nights. Findings like this point to the notion that the best way to promote tourism as an end goal is to pursue direct promotion strategies rather than attempting to leverage mega-events for that purpose.

Section 3. Other Qualitative and Social Impacts

While they fall outside the scope of this chapter, it is important to note that promoters and organizers have suggested that there are additional qualitative and social impacts of mega-events. We will not explore these in detail, but we will briefly outline four commonly mentioned social "legacies" of events and comment on notable ex-post findings that tease out the validity of these claims. More specifically, we will address findings related to (i) increased international business relations, (ii) crime reduction, and (iii) feel-good effects.

With respect of potential increases in international business relations, the premise organizers put forward is that mega-events raise awareness of the host's capabilities in the eyes of potential investors and business partners around the world. The assumption here is that that hosting an event triggers three important signals to new potential business partners: (i) bidding to host an event, (ii) being chosen to host an event and (iii) successfully hosting a major event.

Promoters of events might argue that even bidding for the right to host an event could have a potential positive impact as it signals to potential partners

that the region is willing to undertake major investments and significant reform in order to gain international relevance or connect with the world. Moreover, selection as the actual host of the event validates the previous intent, confirms that these investments and reforms will take place in the following years, brings additional attention to other economic opportunities in the region and provides a qualitative "seal of approval" (at least in comparison to other bidding regions). Lastly, having successfully hosted the event signals inherent capabilities geared towards undertaking major endeavors.

Rose and Spiegel (2011) attempt to validate this claim by analyzing the effect of hosting mega-events on l exports and international trade. Reviewing Olympic Games between 1950 and 2006, they found a statistically significant and permanent, positive impact associated to hosting. More precisely, they found that trade is approximately 30% higher for Olympic hosts. Additionally, they argue that this positive effect extends to unsuccessful bids to host the event. Therefore, in their opinion, the main channel that triggers these effects on trade is not related to systemic changes spawned from hosting the event, but rather from others interpreting the willingness to host the event as a signal of future liberalization. The authors are nonetheless cautious and make clear that this finding does not necessarily mean that there is added merit for hosting a mega-event. They also don't evaluate whether this mechanism for signaling liberalization is more effective than others. Song (2010) partially confirms the results of Rose and Spiegel, adding that these effects are slow to accrue but are sustained in perpetuity.

There are, however, alternative views in the literature. Maennig and Ritcher (2012) dispute these findings by arguing that they might have been driven by selection bias. In order to address this, they control for structural differences across the studied countries, and in doing so they state that the "Olympic effect" on trade disappears. Similarly, Billings and Holladay (2012) failed to find any long-term impact on trade openness in their review of Olympics between 1950 and 2005.

Crime reduction is also included in the long list of proposed benefits touted by organizers. Security budgets for mega-events have increased steadily in the past few decades and now tend to be well above USD 1 billion. Nonetheless, some ex-post evaluations paint a different picture. For one, Baumann et al. (2012) estimate that the Olympics are associated with a 10 percent increase in crime rates in host cities. Meanwhile, Campaniello (2013) reviewed the relationship between the 1990 World Cup in Italy and crime rates at a provincial level and found that hosting the World Cup is associated with an increase in the number of property crimes and an increase in intentional personal injuries. They do not find a relationship with other violent crimes.

Lastly, event organizers often discuss "feel-good" and "happiness" effects. Orchestrating one of the most anticipated sporting events in the world, the thinking goes, might positively influence the population's outlook not only of the event, but also of a broader range of themes. Zimbalist (2015) states that, with some exceptions, surveys confirm that the mood of the population tends

to be lifted in association to the event. However, these effects tend to be temporary and disappear once the event has ended. Moreover, the exceptions to this include some rather extreme situations, as demonstrated by the significant set of protests the Brazilian government faced in the run-up to the 2014 World Cup.

These are but a few of the "legacy effects" touted by promoters and organizers. Zimbalist (2015) prepared a non-exhaustive list of potential legacy benefits as put forward by the IOC. In addition to those we've already mentioned, it includes (i) improved management practices, (ii) better coordination among government agencies, (iii) education benefits, (iv) public health benefits, (v) improved inclusion of handicapped persons, (vi) cultural preservation, (vii) more sustainable policies and standards, (viii) reduced racisms and (ix) greater social inclusion.

There are few, if any, independent studies that validate these claims. However, Zimbalist (2015) notes, even if these claims were true, it is unclear if it makes sense to pursue these goals indirectly through mega-event investments rather than to pursue them directly through targeted, better-funded, and better-planned strategies.

Summary

While there appears to be some evidence to support the case for improved trade relations as a result of hosting a mega-event, the finding is inconclusive, as it cannot be verified with an alternative specification that controls for structural differences across countries. Likewise, "feel-good" effects are grounded in survey evidence, tend to be ephemeral, and are not without exceptions. Lastly, regarding crime reduction, the reviewed ex-post evaluations go against the expected causal relation and actually point to an increase in criminal activity, most notably in property crime.

Overall, it seems to be that the broader question for policymakers is whether mega-events are most appropriate and cost-effective channel to pursue these qualitative and social goals.

Section 4. Implications for Potential Hosts of Mega-events

The findings of this chapter have important implications for a variety of stakeholders. For the purpose of this work, we will primarily focus on how these findings might shape the decision-making of potential mega-event hosts in the future.

The literature signals that potential hosts should be very suspicious of deriving any benefits from hosting major sporting events. In practice, the verifiable positive impacts associated to mega-events fall way short of the lofty expectations that are generated in the early planning stages. In handful of cases where these positive impacts do appear, they tend to be conditional on other factors and are mostly temporary in nature.

As we outlined before, ex-ante expectations tend to be overly optimistic and, in many cases, structurally flawed. If taken at face value, they can lead policymakers to believe that the benefits of hosting a mega-event are orders of magnitude larger than they likely are in reality.

From the previous review, we find that in a strict expenses versus income calculation, the math doesn't add up for potential hosts. Non-operational costs and investments associated with hosting mega-events have been increasing exponentially in the past few decades. Now, public investment dwarfs both event revenues and resources that were theoretically previously inaccessible.

Ex-ante studies might claim that this limitation is not necessarily binding since, through a multiplicative effect, the mega-event investments positively influence the broader host economy. However, these multiplicative effects are routinely overestimated. The across-the-board increases in economic activity and employment generally predicted by these ex-ante studies are not validated by ex-post evaluations.

There are, however, some positive benefits to be reaped with respect to tourism, but these are conditional on a number of factors (i.e.: peak season, type of event, participants in the event, etc.). Moreover, they are heavily concentrated in the few years before and after the event with little to no long-term effect. Furthermore, it is rather unlikely that, on their own, these temporary improvements in awareness, perception and visitor growth justify the substantial investments associated with hosting a major sporting event. Lastly, it is worth questioning if hosting mega-events is a more effective mechanism to promote tourism than direct investment in the sector.

These types of caveats are similar to, most if not all, of the purported benefits of these types of events. There is generally little evidence to substantiate them. When there is an impact, it either falls way short of expectation, is small relative to the cost, or appears less effective than alternative policy options for addressing the same goal.

This should not be taken to mean that there is absolutely no merit to hosting a mega-event. Instead, potential hosts should be mindful of the explicit and implicit costs of the event and strive to accurately compare them to the verifiable benefits. Perhaps, the best way forward is for potential hosts to determine the "right long-term price" for which hosting an event makes sense, given the limited and temporary nature of the benefits associated to it.

Investing in sports stadiums that vastly exceed local demand is not a sound investment. Neither is an infrastructure investment that connects the new stadium to an airport, but foregoes the true transport dynamics of the host region. The same can be said of enhancements to tourism capacity that fit a temporary shift in visitor profile but don't address the long-term outlook of the region. On the other hand, having a long-term infrastructure or tourism plan that is sustainable on its own right and that happens to coincide with the minimum requirements needed to host a mega-event is a different story. Making the mega-event fit the regional development strategy makes more sense than making the regional strategy fit the mega=event.

This implies that potential hosts should be both more cautious and more zealous with respect to the terms they agree to when bidding for an event. That means, for instance, host cities shouldn't agree to construct new stadiums if they do not fit the long-term needs of the host region. Similarly, it may mean no major infrastructure or capacity enhancement investments if they do not fall in line with a previously determined strategy. Lastly, it might mean a sustained push for more equitable revenue-sharing and cost-sharing schemes.

It is reasonable to presume that, given current standards, bids that are structured in this way might be perceived as less competitive. However, these types of bids will safeguard that, if a host region were to be awarded the event, the relationship between costs and benefits would be more sensible. Also, it is reasonable to suggest that the profile of regions that bid to host mega-event might shift once more, this time towards regions with existing sporting, infrastructure and tourist capacity to reasonably host a major event. Regions with lower opportunity costs for additional investments would likely also bid more frequently.

Even though in this section we are not focusing on supranational organizations (i.e.: FIFA and IOC), it is worth noting that the findings of this chapter also have implications for those organizations. These implications mirror those outlined for policymakers in potential host regions. If informed policymakers significantly alter their behavior towards mega-events, then supranational organizations will likely have to review cost-sharing schemes, revenue-sharing schemes, minimum bid requirements, and the whole bidding process in order to have sufficient bids to competitively award the event. Furthermore, this change of behavior may lead supranational organizations to consider alternative hosting schemes. Such schemes include multiple host countries for the World Cup, similar to what is being planned for the 2020 Euro Cup, or other creative arrangements.

Conclusion

We performed an extensive literature review of mega-events to better understand their verifiable impacts in terms of economic activity, tourism performance and other qualitative and social measures. In doing so, we focus on ex-post evaluations rather than ex-ante estimates.

We find that the vast majority of the literature on mega-events fails to substantiate a relationship between mega-events and increased economic activity, whether directly or indirectly in the short-term or long-run. Overall, the supposed economic benefits of hosting an event are vastly overstated in ex-ante studies. In practice, the real benefits are outweighed by the costs associated with event preparation.

With respect to tourism, it appears that mega-events can have a positive influence on visitor growth and on the image of the host as a tourist destination. However, this positive impact tends to be short-lived, conditional and well below ex-ante expectations. Most of the influence on visitor growth appears to be primarily concentrated in the four years before and after the

event, with emerging evidence of pre-event rather than post-event impact. In fact, in the long run the positive influence of mega-events disappears. Similarly, after a brief boost of awareness and perception, hosts face rapid image decay after the event. Furthermore, it appears that the positive impact of tourism tends to depend on a number of other variables..

Finally, the positive influence on tourism, especially on visitor growth, tends to come in well below expectations. It appears that this is driven by the fact that ex-ante estimates systematically underestimate the impact of (i) time switching, (ii) crowding out and (iii) pricing out. This practice might lead to an overshooting in the estimate of net new tourists and their inherent "multiplicative effect." This may overstate the potential impact of the mega-event and also turn into a self-defeating prophecy with substantial implications for the host region.

Furthermore, in light of these types of insights, it is necessary to question the pertinence of enhancing tourism through mega-event investment in lieu of other more direct promotion schemes. For instance, Teigland (1999) explored this question in his review of the Lillehammer experience, and found that the Winter Olympics cost on average more than 100 times the amount invested in a "focused decentralization" strategy in 20 selected destinations, having only twice the effect on guest nights. Findings like this point to the fact that perhaps the best way to promote tourism as an end goal is to pursue direct promotion schemes rather than attempting to leverage mega-events for that purpose.

Meanwhile, in reference to other qualitative and social impacts, there appears to be some evidence to support the case for improved trade relations as a result of hosting a mega-event. However, the finding is inconclusive, as it cannot be verified with an alternative specification that controls for structural differences across countries. Likewise, "feel-good" effects are grounded in survey evidence, tend to be ephemeral, and carry many exceptions. Lastly, regarding crime reduction, the reviewed ex-post evaluations tend to go against the expected causal relation and actually point out to an increase in criminal activity, particularly in property crime.

In general, it seems to be that the broader question in play for policymakers is whether mega-events are the appropriate channel through which the pursuit of these different policy objectives should be pursued.

Lastly, we believe that moving forward these findings should have important implications for key stakeholders. Namely, potential hosts for mega-events should be more cautious and more zealous with respect to the terms they agree to when bidding for an event. They should carefully consider the explicit and implicit costs of hosting the event and compare them to the verifiable benefits. This might mean balking at required investments in stadiums and infrastructure that do not fit the long-term outlook of the region. We believe that, if it is followed by many potential host regions, this type of more conservative approach towards event bidding would significantly impact the cost-benefit relation for mega-events. It could shape the current perspective on what is considered a competitive bid and shift the profile of the host regions

that bid for mega-events. Additionally, we believe that it might behoove supranational organizations to incorporate this conservative approach into their own decision-making process, which in turn could lead to major changes in the bidding process and foster innovate hosting schemes.

References

Allmers, Swantje and Maennig. Wolfgang .2009. "Economic Impacts of the FIFA Soccer World Cups in France 1998, Germany 2006, and Outlook for South Africa 2010." *Eastern Economic Journal* 35 (4): 500-519 DOI: 10.1057/eej.2009.30

Andranovich, Greg, Matthew J. Burbank, and Charles H. Heying. 2001"Olympic Cities: Lessons Learned from Mega-Event Politics." Journal of Urban Affairs 23, no. 2: 113-31. doi: 10.1111/0735-2166.00079

Andreff, Wladimir, and Szymanski, Stefan. 2006. *Handbook on the Economics of Sport*. Elgar Original Reference. Cheltenham, UK ; Northampton, MA: Edward Elgar.

Andreff, Wladimir. 2008. "Globalization of the sports economy." *Rivista di diritto ed economia dello sport* 4, no. 3: 13-32.

Armstrong, Jeremy, 2014. "Brazil World Cup tourism triumph as 95% of fans say they will return to samba nation for a holiday" *Mirror,* August. 31. Accessed March 25, 2016. http://www.mirror.co.uk/lifestyle/travel/usa-long-haul/brazil-world-cup-tourism-triumph-4126879

Baade, Robert A., and Matheson, Victor A. 2002. "Bidding for the Olympics: fool's gold?." In *Transatlantic Sport: The Comparative Economics of North American and European Sports.* Edited by Carlos Pestana Barros and Muradali Ibrahímo. (Cheltenham, UK: Edward Elgar Publishing), accessed Mar 28, 2016, http://www.elgaronline.com/view/9781840649475.00017.xml.

Baade, Robert A., and Matheson, Victor A., 2004. "The Quest for the Cup: Assessing the Economic Impact of the World Cup," *Regional Studies*, 38, no. 4: 341-352. DOI: 10.1080/03434002000213888

Baade, Robert A., Baumann, Robert W, and Matheson, Victor A. 2005. "Selling the Big Game: Estimating the Economic Impact of Mega-Events through Taxable Sales." *No 0510, Working Papers, College of the Holy Cross, Department of Economics.*

Baade, Robert A., Baumann, Robert W, and Matheson, Victor A. 2010 "Slippery Slope? Assessing the Economic Impact of the 2002 Winter Olympic Games in Salt Lake City, Utah." *Région Et Développement*: 81-91.

Barget, Eric, and Gouguet, Jean-Jacques. 2013. "The Importance of Foreign Spectators' Expenditure in the Tourism Impact of Mega-sporting Events." *Papeles De Europa*, no. 25: 27-50. E-ISSN: 1989-5917 ; DOI: http://dx.doi.org/10.5209/rev_PADE.2012.n25.41094

Baumann, Robert, Bryan Engelhardt, and Victor A. Matheson. 2012 "Labor Market Effects of the World Cup: A Sectoral Analysis". In *International Handbook on the Economics of Mega Sporting Events.* Edited by Wolfgang Maennig and

Andrew Zimbalist. Cheltenham, UK: Edward Elgar Publishing. DOI:10.4337/9780857930279

Baumann, Robert, Taylor Ciavarra, Bryan Englehardt, and Victor A. Matheson. 2012 "Sports franchises, events, and city livability: an examination of spectator sports and crime rates." *The Economic and Labour Relations Review* 23, no. 2: 83-97.

Billings, Stephen B., and J. Scott Holladay. 2012 "SHOULD CITIES GO FOR THE GOLD? THE LONG-TERM IMPACTS OF HOSTING THE OLYMPICS." *Economic Inquiry* 50, no. 3: 754-72. DOI: 10.1111/j.1465-7295.2011.00373.x

Burbank, Matthew J., Greg Andranovich, and Charles H. Heying. 2002. "Mega-Events, Urban Development, And Public Policy." *Review of Policy Research*19, no. 3: 179-202. DOI: 10.1111/j.1541-1338.2002.tb00301.x

Campaniello, Nadia. 2013. "Mega events in sports and crime: Evidence from the 1990 Football World Cup." Journal of Sports Economics April 14: 148-170, first published on August 25, 2011 doi:10.1177/1527002511415536

Chalip, Laurence. 2010 "Using the Olympics to optimise tourism benefits." *University lecture on the Olympics* [online article]. Barcelona : Centre d'Estudis Olímpics (UAB). International Chair in Olympism (IOC-UAB). Accessed March 25, 2016. http://olympicstudies.uab.es/2010/docs/chalip_eng.pdf

Coates, Dennis, and Brad Humphreys. 2008 "Do Economists Reach a Conclusion on Subsidies for Sports Franchises, Stadiums, and Mega-Events?" *Econ Journal Watch* 5, no. 3: 294. E-ISSN**:** 1933527X

Coates, Dennis, and Craig A Depken. 2011. "Mega-Events: Is Baylor Football to Waco What the Super Bowl Is to Houston?" *Journal of Sports Economics* 12, no. 6: 599-620. DOI**:** 10.1177/1527002510391368

COJO 76. 1978. *Games of the XXI Olympiad Montréal 1976. Official Report. Vol. I, Organization.* Otawa: COJO 76. Accessed March 25, 2016. http://library.la84.org/6oic/OfficialReports/1976/1976v1p1.pdf

Du Plessis, Stan, and Maennig, Wolfgang. 2011. "The 2010 FIFA World Cup High-frequency Data Economics: Effects on International Tourism and Awareness for South Africa." *Development Southern Africa* 28, no. 3: 349-65. DOI: 10.1080/0376835X.2011.595994

Du Plessis, Stan, and Maennig, Wolfgang. 2012 "The 2010 FIFA World Cup High-frequency Data Economics : Effects on International Tourism and Awareness for South Africa." in *International Handbook on the Economics of Mega-sporting Events*, 482-503.

Du Plessis, Stan, and Venter, Cobus. 2010. "The Home Team Scores! A First Assessment of the Economic Impact of World Cup 2010." *Working Papers No 21/2010 Stellenbosch University, Department of Economics.* Accessed March 25, 2016, https://ideas.repec.org/p/sza/wpaper/wpapers120.html.

Edds, Samantha. 2012 "Economic Impacts of the Olympic Games through State Comparison." Accessed March 25, 2016. http://www.freakonomics.com/media/Economic_Impacts_of_the_Olympic_Games.pdf

Erb, Kelly P., 2014. "World Cup Mania: Figuring Out FIFA, Soccer & Tax." *Forbes,* Jun 16. Accessed March 25, 2016.

http://www.forbes.com/sites/kellyphillipserb/2014/06/16/world-cup-mania-figuring-out-fifa-soccer-tax/

Ernst & Young. 2011. Sport events and regional development: the case of the Rio de Janeiro 2016 Olympic Games EY Brazil. Brazil: EYGM, accessed March 25, 2016, http://www.ey.com/Publication/vwLUAssets/Brazil_World_Cup_impacts_2014_TZ_priloha/$FILE/Sustainable_Brazil_2014 World Cup impactsTZ priloha_.pdf

European Tour Operators Association (EOTA), 2006. "Olympic Report." London: European Tour Operators Association. Accessed March 25, 2016. http://www.etoa.org/docs/default-source/Reports/ETOA-reports/2006-etoa-olympic-report.pdf?sfvrsn=2

European Tour Operators Association(EOTA), 2010 "Olympic Hotel Demand, ETOA Report 2010." London: European Tour Operators Association. Accessed March 25, 2016. http://www.etoa.org/docs/default-source/Reports/ETOA-reports/2010-etoa-olympic-report.pdf

Feddersen, Arne, and Maennig, Wolfgang. 2009. "Wage and Employment Effects of the Olympic Games in Atlanta 1996 Reconsidered." *Hamburg Contemporary Economic Discussions* No. 25. ISBN: 9783940369659

Feddersen, Arne, and Maennig, Wolfgang. 2010a *Sectoral Labour Market Effects of the 2006 FIFA World Cup*. Hamburg Contemporary Economic Discussions 33.

Feddersen, Arne, and Maennig, Wolfgang. 2010b. "Mega-Events and Sectoral Employment: The Case of the 1996 Olympic Games." *Hamburg Contemporary Economic Discussions* No. 35. ISBN: 9783940369857

Feddersen, Arne, André Leão Grötzinger, and Wolfgang Maennig. 2009. "Investment in Stadia and Regional Economic Development-Evidence from FIFA World Cup 2006." *International Journal of Sport Finance* 4 (4): 221-239. Accessed March 25, 2016. http://search.proquest.com/docview/229353592?accountid=11311.

FIFA. 2011. *FIFA Financial Report 2010*. Zurich: FIFA 2011, accessed March 25, 2016, http://www.fifa.com/mm/document/affederation/administration/01/39/20/45/web_fifa_fr2010_eng[1].pdf

FIFA. 2015. *FIFA Financial Report 2014*. Zurich: FIFA 2015, accessed March 25, 2016. http://www.fifa.com/mm/document/affederation/administration/02/56/80/39/fr2014weben_neutral.pdf

FIFA. 2015 "2014 FIFA World Cup™ reached 3.2 billion viewers, one billion watched final" *FIFA,* Dec. 15. Accessed March 25, 2016. http://www.fifa.com/worldcup/news/y=2015/m=12/news=2014-fifa-world-cuptm-reached-3-2-billion-viewers-one-billion-watched--2745519.html

Flyvbjerg, Bent and Allison Stewart. 2012. "Olympic Proportions: Cost and Cost Overrun at the Olympics, 1960-2012." University of Oxford, Said Business Chool Working Papers. Accessed March 29, 2016. http://eureka.sbs.ox.ac.uk/4943/1/SSRN-id2382612_(2).pdf.

Fourie, Johan, and Santana-Gallego, María. 2011. "The Impact of Mega-sport Events on Tourist Arrivals." *Tourism Management* 32, no. 6 (2011): 1364-370. doi:10.1016/j.tourman.2011.01.011

Fourie, Johan, and Santana-Gallego, María. 2015 "How the 'Hand of Henry' Benefited the South African Economy." ERSA working paper 508. Accessed March 25. 2016. http://www.econrsa.org/system/files/publications/working_papers/working_paper_508.pdf

Garcia-Navarro, Lourdes. 2015. "Brazil's World Cup Legacy Includes $550M Stadium-Turned-Parking Lot " *NPR,* May 11. Accessed March 25, 2016. http://www.npr.org/sections/parallels/2015/05/11/405955547/brazils-world-cup-legacy-includes-550m-stadium-turned-parking-lot

Goldblatt, David. 2010. "Footing South Africa's World Cup bill." *BBC News*, June 4. Accessed March 25, 2016. http://news.bbc.co.uk/2/hi/africa/8718696.stm

Gouget J. and E.Barget. 2006. "Sports externalities" in *Handbook on the Economics of Sport*, edited by Wladimir Andreff and Stefan Szymanski. Cheltenham, U.K.: Edward Elgar Publishing.

Gratton, Chris, and Preuss, Holger 2008. "Maximizing Olympic impacts by building up legacies." *The International Journal of the History of Sport* 25, no. 14: 1922-1938. DOI: 10.1080/09523360802439023

Gruben, Kathleen, Moss, Steven, and Moss, Janet. 2012 "Do the Olympics Create Sustained Increases in International Tourism?" *Journal of International Business Research* 11, no. 1 Jan: 135-50.

Haddad, Eduardo A., and Paulo R. Haddad. 2010 "Major sport events and regional development: the case of the Rio de Janeiro 2016 Olympic Games." Regional Science Policy & Practice 2, no. 1: 79-95.

Hagn, Florian, and Maennig, Wolfgang. 2008. "Employment Effects of the Football World Cup 1974 in Germany." *Labour Economics* 15, no. 5: 1062-075. doi:10.1016/j.labeco.2007.09.004

Hagn, Florian, and Maennig, Wolfgang. 2007. *Short-term to Long-term Employment Effects of the Football World Cup 1974 in Germany*. Hamburg Contemporary Economic Discussions 9. Hamburg: Univ., Fac. Economics and Social Sciences, Chair for Economic Policy.

Hagn, Florian, and Wolfgang Maennig. 2009 "Large Sport Events and Unemployment: The Case of the 2006 Soccer World Cup in Germany." *Applied Economics* 41, no. 25: 3295-302. DOI: 10.1080/00036840701604545

Heitner, Darren. 2014. "2014 FIFA World Cup Expected To Add $3.03 Billion To Brazil's Economy" *Forbes,* May 14. Accessed March 25, 2016. http://www.forbes.com/sites/darrenheitner/2014/05/14/2014-fifa-world-cup-expected-to-add-3-03-billion-to-brazils-economy/#bff11e248521

Hotchkiss, Julie L., Robert E. Moore, and Stephanie M. Zobay. 2003. "Impact of the 1996 Summer Olympic Games on Employment and Wages in Georgia."*Southern Economic Journal* 69 (3): 691-704. ISSN: 00384038

Humphreys, Brad R. and Szymon Prokopowicz. 2007 "Assessing the Impact of Sports Mega-events in Transition Economies: EURO 2012 in Poland and Ukraine." Int. J. of Sport Management and Marketing 2, no. 5/6: 496. DOI: 10.1504/IJSMM.2007.013963

Hunt, Tim. 2012. "How Tax Avoidance Schemes Now Lie at the Heart of the Modern Olympic Games," *Ethical Consumer*, July 27.

International Olympic Committee, 2012 "London 2012 Olympic Games: Global Broadcasting Report." Accessed March 25, 2016. http://www.olympic.org/Documents/IOC_Marketing/Broadcasting/London_2012_Global_%20Broadcast_Report.pdf

International Olympic Committee, 2014 *International Olympic Committee: 2014 Marketing Fact File*. Accessed March 25, 2016. http://www.olympic.org/Documents/IOC_Marketing/OLYMPIC_MARKETING_FACT_%20FILE_2014.pdf

International Olympic Committee. 2013. *Olympic legacies* (Lausanne: International Olympic Committee, March), accessed March 25, 2016, http://www.olympic.org/documents/olympism_in_action/legacy/2013_booklet_legacy.pdf

Kanter Media. 2015 "2014 FIFA World Cup Brazil. Television Audience Report." (London: FIFA Dec 14). Accessed March 25, 2016. http://resources.fifa.com/mm/document/affederation/tv/02/74/55/57/2014fwcbraziltvaudiencereport(draft5)(issuedate14.12.15)_neutral.pdf

Karly, Spronk, Siebrits Krige, and Fourie Johan. 2011 "Tourist Displacement in Two South African Sport Mega-Events." *Development Southern Africa* 28, no. 3: 319-32. DOI:10.1080/0376835X.2011.595991

Kasimati, Evangelia. 2003. "Economic aspects and the Summer Olympics: a review of related research." *International journal of tourism research* 5, no. 6: 433-444. DOI: 10.1002/jtr.449

Kesenne, Stefan. 1999 "Miscalculations and Misinterpretations in Economic Impact Analysis." in *The Economic Impact of Sports Events*. Edited by Claude Jeanrenaud, 29-39. Neuchatel, Switzerland: Centre International d'Etude du Sport.

Lapowsky, Issie. 2014 "How Brazil plans to teach a million people english before the Rio Olympics." *Wired,* Dec. 8. Accessed March 25, 2016. http://www.wired.com/2014/12/education-first-brazil/

Leeds, Michael A., 2008 "Do Good Olympics Make Good Neighbors?." *Contemporary Economic Policy, Vol. 26, Issue 3*: 460-467, July. Available at SSRN: http://ssrn.com/abstract=1157571 or http://dx.doi.org/10.1111/j.1465-7287.2007.00067.x

Levesque, K. 2001. "Il y a 25 ans les Jeux: une monstrueuse aventure financière", Le Devoir, Jul 7.

Long, Judith Grand. 2005. "Full Count : The Real Cost of Public Funding for Major League Sports Facilities." *Journal of Sports Economics* 6, no. 2: 119-43. doi: 10.1177/1527002504264614

Los Angeles Olympic Organizing Committee and Richard B. Perelman (ed). 1985. *Official Report of the Games of the XXIIIrd Olympiad, Los Angeles, 1984*. Vol. 1.

Los Angeles Olympic Organizing Committee. Accessed March 25, 2016 http://library.la84.org/6oic/OfficialReports/1984/1984v1pt2.pdf

Maennig, W. 2007. "One Year Later: A Re-Appraisal of the Economics of the 2006 Soccer World Cup. " Hamburg Working Paper Series in Economic Policv No. 10/2007.

Maennig, Wolfgang and Andrew, Zimbalist. 2012. "What is a mega sporting event?" in *International handbook on the economics of mega sporting events* edited by Maennig, Wolfgang, and Zimbalist, Andrew S. Cheltenham, UK: Edward Elgar Publishing Ltd. DOI:10.4337/9780857930279

Maennig, Wolfgang, and Du Plessis, Stan. 2007 "World Cup 2010 : South African Economic Perspectives and Policy Challenges Informed by the Experience of Germany 2006."*Contemporary Economic Policy: A Journal of Western Economic Association International* 25, no. 4: 578-90. DOI: 10.1111/j.1465-7287.2007.00074.x

Maennig, Wolfgang, and Felix Richter. 2012. "Exports and Olympic Games Is There a Signal Effect?." *Journal of Sports Economics* 13, no. 6: 635-641. doi:10.1177/1527002512454663

Magnay, Jacquelin. 2011. "London 2012 Olimpics: Athletes' village sold to investment arm of Qatari ruling family." *The Telegraph,* August 21. Accessed March 25, 2016. http://www.telegraph.co.uk/sport/olympics/8697749/London-2012-Olympics-Athletes-village-sold-to-investment-arm-of-Qatari-ruling-family.html

Marcopoto, Talia, 2014. "Brazil claims 'victory' in World Cup." *CNN,* July 16. Accessed March 25, 2016. http://www.cnn.com/2014/07/16/travel/brazil-world-cup-tourism/

Matheson, Victor A. 2009. "Economic Multipliers and Mega-event Analysis. (Report)." *International Journal of Sport Finance* 4, no. 1: 63. ISSN: 1558-6235

Matheson, Victor A., and Baade, Robert A. 2004 "Mega-sporting Events in Developing Nations Playing the Way to Prosperity?" *The South African Journal of Economics* 72, no. 5: 1084-095. doi: 10.1111/j.1813-6982.2004.tb00147.x

Matheson, Victor, Thomas Peeters, and Stefan Szymanski. 2012 "If You Host It, Where Will They Come From? Mega-Events and Tourism in South Africa." *IDEAS Working Paper Series from RePEc,* IDEAS Working Paper Series from RePEc, 2012.

Matheson, Victor. 2006. "Mega-Events: The effect of the world's biggest sporting events on local, regional, and national economies." *Economics Department Working Papers.* Paper 68. http://crossworks.holycross.edu/econ_working_papers/68

Mitchell, Heather, and Mark Fergusson Stewart. 2015 "What Should You Pay to Host a Party? An Economic Analysis of Hosting Sports Mega-events." *Applied Economics* 47, no. 15 (2015): 1550-561. DOI: 10.1080/00036846.2014.1000522

Nooij, De, M.N., Berg, Van Den, M.R., and Koopmans, C.C. 2010 "Bread or Games? Social Cost-benefit Analysis of the World Cup in the Netherlands." Accessed March 25, 2016. http://www.seo.nl/uploads/media/dp60_bread_or_games.pdf

Oldenboom, E.R. 2006. Costs and benefits of major sports events. A case study of Euro 2000. Amsterdam: MeerWaarde Onderzoeksadvies

Oldenboom, Egbert R. 2008 "The impact of the broadcasting of sports events on the image and awareness of host cities abroad." *Belgeo. Revue belge de géographie* 2: 167-180. Accessed March 25, 2015.

Porter, Philip K., 1999. "Mega-Sports Events as Municipal Investments: A Critique of Impact Analysis," in *Sports Economics: Current Research*, eds John Fizel, Elizabeth Gustafson, and Larry Hadley. Westport, CT: Praeger Press.

Porter, Philip K., and Deborah Fletcher. 2008. "The Economic Impact of the Olympic Games: Ex Ante Predictions and Ex Poste Reality." *Journal Of Sport Management* 22, no. 4: 470-86. ISSN: 0888-4773

Powell, Micheall. 2015. "Bucks' Owners Win, at Wisconsin's Expense" *The New York Times,* August 15. Accessed March 25, 2016. http://www.nytimes.com/2015/08/15/sports/bucks-new-owners-get-house-warming-gift-of-public-money.html?_r=0

Preuss, Holger. 2006 "Lasting effects of major sporting events." *Institute of Sport Science* (2006). ISSN 652-7224 http://idrottsforum.org/articles/preuss/preuss061213.pdf

Rapoza, Kenneth. 2014. "Bringing FIFA to Brazil Equals to Roughly 61% of Education Budget" *Forbes, Jun 11.* Accesed March 25, 2016, http://www.forbes.com/sites/kenrapoza/2014/06/11/bringing-fifa-to-brazil-equal-to-roughly-61-of-education-budget/#6180a81e334f

Reuters, 2010. "World Cup will create more jobs in SA – Zuma". *Reuters,* 22 June.

Ritchie, JR Brent, and Brian H. Smith. 1991. "The impact of a mega-event on host region awareness: A longitudinal study." *Journal of Travel Research* 30, no. 1s: 3-10. doi: 10.1177/004728759103000102

Rivenburgh, Nancy 2010 "The Olympic Games, media and the challenges of global image making" *University lecture on the Olympics* [online article]. Barcelona : Centre d'Estudis Olímpics (UAB). Accessed March 25, 2016. http://ceo.uab.cat/2010/docs/rivenburgh_eng.pdf

Rogers, Simon. 2012. "London Olympics 2012: where does the money come from-and where's it being spent." *The Guardian Online,* July 26. Accessed March 25, 2016. http://www.theguardian.com/sport/datablog/2012/jul/26/london-2012-olympics-money

Rose, Andrew K., and Spiegel, Mark M. "The Olympic Effect." The Economic Journal : The Journal of the Royal Economic Society 121, no. 553 (2011): 652-77. DOI: 10.1111/j.1468-0297.2010.02407.x

Seelye, Katherine, 2015. "Boston's Bid for Summer Olympics Is Terminated" *The New York Times,* July 27. Accessed March 25, 2016. http://www.nytimes.com/2015/07/28/sports/olympics/boston-2024-summer-olympics-bid-terminated.html?_r=0

Siegfried, John, and Zimbalist, Andrew. 2002 "A Note on the Local Economic Impact of Sports Expenditures." *Journal of Sports Economics* 3, no. 4: 361-66. doi: 10.1177/152700202237501

Solberg, Harry, and Holger Preuss. 2007 "Major Sport Events and Long-Term Tourism Impacts."*Journal of Sport Management* 21, no. 2: 4. Accessed March 25, 2016.

Song, Wonho. 2010. "Impacts of Olympics on exports and tourism." *Journal of economic development* 35, no. 4: 93.

Sport & Recreation Department of South Africa. 2013. *2010 FIFA World Cup Country Report.* (Sports & Recreation Departmant of South Africa 2013), accessed March 25, 2016 http://www.srsa.gov.za/MediaLib/Home/DocumentLibrary/SRSACountryReport2013-withcover.pdf

Szymanski, Stefan. 2002. "The economic impact of the World Cup." *World Economics* 3, no. 1: 169-177. Accessed March 25, 2015. https://ideas.repec.org/a/wej/wldecn/96.html

Teigland, Jon. 1999. "Mega-events and impacts on tourism; the predictions and realities of the Lillehammer Olympics." *Impact assessment and project appraisal* 17, no. 4: 305-317, DOI: 10.3152/147154699781767738

Venter, Cobus. 2010 "The Home Team Scores! A First Assessment of the Economic Impact of World Cup 2010." 21/2010. Accessed March 25, 2016. https://ideas.repec.org/p/sza/wpaper/wpapers120.html

von Rekowsky, Robert. 2013. "Are the Olympics a Golden Opportunity for Investors?" *Leadership series, Investment Insights.* Fidelity Investments, August. Accessed March 25, 2016. https://www.fidelity.com/bin-public/060_www_fidelity_com/documents/Are%20the%20Olympics%20a%20Golden%20Opportunity%20for%20Investors_Fidelity.pdf

Wade, Stephen. 2015. "FIFA returns $100M to Brasil; World Cup cost $15 billion.: USA Today, January 20. Accessed March 25, 2016. http://www.usatoday.com/story/sports/soccer/2015/01/20/fifa-returns-100m-to-brazil-world-cup-cost-15-billion/22050583/

Whaples, Robert. 2006 "Do Economists Agree on Anything? Yes!" *The Economists' Voice* 3, no. 9: November. DOI: 10.2202/1553-3832.1156

Zimbalist, Andrew. 2015 Circus Maximus : The Economic Gamble Behind Hosting the Olympics and the World Cup. Washington: Brookings Institution Press.

CHAPTER 6. CONCLUDING THOUGHTS

Sports policy decisions deserve attention for at least two reasons. First, they are often significant in size. For instance, public policies with respect to sports are often linked with major infrastructure projects, many of which are in turn related to high-profile mega-events. Second, sports policy decisions are important because they are regularly made in the face of substantial tradeoffs. There is a high opportunity cost to public funds, especially when governments have finite budget constraints. Therefore, policy choices that prioritize certain types of sports-related activities over others -- or, perhaps more poignantly, over other social and economic objectives -- are bound to have important implications.

Despite the relevance of these policy decisions, there are still major gaps in the public understanding of the sector. Data on the economic and governance dimensions of the sports sector are generally inadequate. Fundamental issues, such as the magnitude of the sector and characterization of its employment, cannot be reliably addressed with the data available which leads many policymakers to take "leaps of faith" when making tough policy choices. Furthermore, the lack of adequate data and a proper framework to interpret the data that is available makes policymakers susceptible to structurally flawed representations of the sports sector. This report attempts to contribute towards an alternative approach to the sports economy, one that is driven more by evidence and facts rather than solely by passion for competition.

The first contribution to this alternative approach focuses on understanding the diversity within what is traditionally conceived to be a monolithic sports sector. Substantial efforts have been directed at aggregating different sports-related economic activities into a broader representation of the sector. While these efforts have many laudable characteristics, they fail to account for fundamental differences in the way the different sports-related activities operate and interact with the rest of the economy. In practice, recognizing diversity in the sector can be done at two levels. First, future accounts should attempt to disentangle activities that are directly relevant for the production of sports (known as core sports) from activities that are more peripheral to sports (known as the sports periphery). Second, future accounts should acknowledge that, even within core sports activities, there is a range of different kinds of economic activity. We posit that, within each of these levels of analysis, there are substantial differences across economic activities in a number of dimensions. We argue that recognizing these distinctions has implications for how to analyze the sports economy. Furthermore, we believe that without this type of understanding it is unlikely that policy prescriptions that attempt to promote sports-related economic activities are adequately conceived.

A second contribution focuses on characterizing the type of data that is conducive to an improved understanding of the sector. Some of the relevant characteristics are the following: significant sectoral disaggregation, significant spatial disaggregation and complementarity across the relevant

databases. With the appropriate data, different types of analyzes can be carried out to further the understanding of the sports sector.

Building on this, the third contribution of this report is centered on developing an initial array of analyses that can be employed when appropriate data is available. These analyses have a dual objective. First, they attempt to tease out the previously mentioned differences across sports-related activities, in a context-relevant way. Second, they seek to provide an in-depth characterization of each economic activity across a number of key variables. Some of these analyses include, but are not limited to, the following: skills-based analyses, magnitude analyses, employment characterizations, geographic distribution analyses, and calculations of the intensity of sports activities. It should be noted that the analyses presented in this report are demonstrative in nature. They could be easily expanded to include other type of analyses, additional sources of data, and further breakdowns, both in terms of activity and geography. They could also be enhanced by including more years of data. Additionally, it should be noted that in general these types of findings are context-specific and their external validity might be limited.

The fourth contribution of the report is concerned with the diversity of places that are intensive on sports-related activities. While we don't directly address the "readiness" of different geographies to undertake sports-related endeavors, we do identify geographies that are particularly intensive in sports. We find in Chapter 2. and Chapter 3. that different geographies are intensive in different sports-related activities. We also find that different geographies might be intensive in a similar sporting activity for a different reason. Lastly, we posit that intensity in a given variable, such as employment, might not necessarily imply intensity in another variable such as value added, given the particularities of each sports-related activity. This insight paves the way for a different approach at sports policy development, one in which certain geographies might be best suited by focusing their efforts on a given sub-set of activities.

The fifth contribution of the report precisely follows this logic. We begin to translate the economic dimensions of the sports economy into framework for policymakers in national, regional, and local governments. In this light, we pose that, when analyzing governance, the ability to effectively achieve ends must lead one to think about the forms or means governments should take. The ends-means approach to governance leads us to ask three questions related to the governance of *development through sport*. First, what are the ends that motivate governments when pursuing development through sport? Second, what are the means that governments use when pursuing these ends? Third, can we develop an evidence-based view of a development through sport policy regime in order to assess its governance quality? We propose the construction of governance "dashboards" as a demonstrative framework for reflecting on the ends and means of a development through sports agenda.

The final contribution of the report is centered on the pertinence of certain policy tools for the pursuit of a given set of objectives. We specifically focus on one-off mega-events like the FIFA World Cup and the Summer Olympics as one

of the most prominent "means" of sports governance. We find that these events generally fail to meet the ex-ante expectations set forth in preparation of the events. We show that there is little ex-post evidence to substantiate ex-ante claims, which casts doubts on the effectiveness of the mechanisms through which the "means" (mega-events) can facilitate the "ends" (increased economic activity). While specific to mega events, this report raises questions with respect to the way in which they are awarded and the organizing process. When considering mega-events and broader sports policies, the report signals the importance of adequately identifying appropriate "means" for the pursuit of targeted "ends" in a context-relevant way.

Furthermore, it appears that mega-event promoters in general and perhaps supranational rights holders in particular, fail to keep in mind the best interests of host locations. These stakeholders impose significant demands upon hosts that lead to many investments with high opportunity costs and little long-term socio economic return. These demands are imposed either implicitly, through the way the bidding process is set up, or explicitly through norms, agreements and regulations. More so, rights holders generally take the majority of the revenue associated directly with the event whilst promising long-term "spillover" benefits to host locations that in reality are generally limited, heavily conditional, short-lived and associated with major long-term costs.

Overall, the report doesn't intend to become a stand-alone handbook on the economic and governance dimensions of sports, but rather a collection of insights and demonstrative analyses. We hope, that taken together, these insights could conceivably influence the way statistical agencies, policymakers and industry leaders make decisions with regards to the sector.

APPENDIXES

APPENDIX 1.A. CORE SPORTS AND SPORTS PERIPHERY ACTIVITIES IN THE NETHERLANDS

Table 1.0.1. Core sports activities in the Netherlands

Standaard Bedrijfsindeling 1993 Five-digit Industry Code*	Industry
92611	Operation of sports facilities
92612	Operation of swimming pools
92613	Operation of sports halls
92614	Operation of sports fields
92621	Operation of other sports
92622	Football
92623	Field sports (other than football)
92624	Athletics
92625	Tennis
92626	Equestrian (including riding schools)
92627	Cycling
92628	Motorsports
92629	Winter sports
92631	Other outdoor sports
92632	Sports halls for individual sports
92634	Sports halls for team sports
92635	Martial arts
92635	Bowling, billiards, and similar sports
92636	Puzzles
92641	Swimming
92642	Boating, canoeing, and sailing
92643	Sailing and surfing schools
92644	Marinas
92651	Professional sportsmen

Standaard Bedrijfsindeling 1993 Five-digit Industry Code*	Industry
92652	Sports instructors
92653	Gyms
92654	Sports fans and supporters associations
92655	Organizers of sports events
92656	Sports umbrella, cooperation, and advisory bodies

Table 1.0.2. Selected sports periphery activities**

Standaard Bedrijfsindeling 1993 Four-digit Industry Code*	Industry
3640	Manufacture of sports goods
3512	Building and repairing of pleasure and sporting boats
4523	Construction of highways, roads, airfields, and sport facilities
5147	Wholesale of other household goods
5248	Other retail sale in specialized stores
5511	Hotels and motels, with restaurants
5512	Hotels and motels, without restaurants
9220	Radio and television activities
9271	Gambling and betting activities
9272	Other recreational activities n.e.c.

**Standaard Bedrijfsindeling (SBI) is the Dutch industry classification system. The first four-digits of SBI 1993 correspond to NACE revision 1.*

***The table here isn't necessarily a comprehensive list of all sports periphery activities. It is instead a list of selected sports periphery activity chosen from the Vilnius Definition. Because they are selected from the Vilnius Definition, the codes listed here are four-digit codes corresponding exactly to those in NACE revision 1 rather than the five-digit codes listed for core sports activities. Since nodes in* Figure 1.5 *represent industries at the five-digit level in SBI 1993, there are more nodes highlighted in* Figure 1.5 *than four-digit codes listed here.*

APPENDIX 1.B. NODE COLORS IN FIGURE 1.4. NETHERLANDS INDUSTRY SPACE COLORED AT THE NACE REV. 1 TWO-DIGIT LEVEL

Color		Standaard Bedrijfsindeling 1993 Two-digit Industry Codes*^	Industry
	Bright Blue	05	Fishing
	Gray	10-14	Mining and quarrying
	Yellow/Green	15-16	Manufacturing of food products, beverages, and tobacco products
	Orange/Yellow	17-22	Manufacture of textiles, textile products, wood and wood products
	Light Blue	23-26	Manufacture of petroleum, chemicals, rubber, and non-metallic minerals
	Dark Blue	27-37	Manufacture of basic metals, fabricated metal products, machinery, furniture, and other equipment
	Peach	40-41	Electricity, gas, and water supply
	Dirty Yellow	45	Construction
	Aqua	50-52	Wholesale and retail trade
	Pink	55	Hotels and restaurants
	Brown	60-64	Transport, storage, and communication
	Orange	65-67	Financial intermediation
	Dark Green	70-74	Real estate, renting, and business activities
	Black	75	Public administration
	Dark Blue	80	Education
	Purple	85	Health and social work
	Aqua/Green	90-93 (excluding 926 industries)**	Other community, social, and personal service activities

**Standaard Bedrijfsindeling (SBI) is the Dutch industry classification system. Ranges of codes are listed here to capture broader groups of related industries.*

*** 926 industry nodes are excluded because they are colored red as core sports activities.*

^Note that agriculture, hunting, and forestry activities are excluded from the labor survey data.

APPENDIX 2.A. DETAILED PRESENTATION OF THE MAGNITUDE OF SPORTS-RELATED ACTIVITIES

The following tables present the relevance of each sports-related economic activity in Mexico as a share of total value added, employment, and wages in the Mexican Economy. In addition, the tables identify whether an activity belongs to the core sports or the sports periphery sector, as well as the percentile rank of the activity in terms of its share.

Table 2.A.1. Share of national added value represented by sports-related economic activities.

Share(%)	Core	Periphery	Percentile	Economic Activity
0.00011%	1	0	3	Professional athletes
0.00074%	0	1	7	Other civil engineering construction
0.00135%	0	1	10	Independent artists, writers and technicians
0.00169%	0	1	12	Agents and managers for artists, athletes and similar figures
0.00178%	1	0	13	Recreational activities regulatory associations
0.00247%	1	0	15	Amateur clubs or leagues
0.00280%	0	1	17	Supervision of other civil engineering construction works
0.00305%	1	0	18	Bowling centers
0.00407%	0	1	21	Rubber footwear manufacturing
0.00412%	0	1	21	Promoters of performing arts, sports and similar events without facilities
0.00413%	1	0	21	Tourist marinas
0.00531%	0	1	25	Manufacturing of sandals and footwear from other materials
0.00680%	0	1	28	Television programs production
0.00787%	1	0	30	Other recreational services, private sector
0.00941%	1	0	33	Professional associations and organizations
0.01111%	0	1	36	Fabric upper footwear manufacturing
0.01121%	0	1	36	Wholesale trade of sporting goods
0.01295%	1	0	38	Billiard rooms and parlors
0.01355%	1	0	39	Sports schools, private sector
0.01376%	0	1	40	Sporting goods manufacturing
0.01424%	0	1	41	Public relations agencies
0.01455%	0	1	41	Promoters of performing arts, sports & similar events with facilities
0.01943%	0	1	47	Plastic footwear manufacturing
0.02299%	1	0	50	Golf courses
0.02578%	1	0	52	Fitness centers, private sector
0.03192%	0	1	58	Retail trade of sporting goods
0.03181%	1	0	58	Professional sports teams
0.05595%	1	0	69	Sports clubs, private sector

Share(%)	Core	Periphery	Percentile	Economic Activity
0.08433%	0	1	77	Sale of lottery tickets, sports bets and other games of chance tickets.
0.08759%	0	1	78	Cut and sew uniforms manufacturing, mass production
0.12644%	0	1	84	Advertising agencies
0.15696%	0	1	86	Leather upper footwear manufacturing
0.36035%	0	1	95	Commercial and service building construction, except construction supervision

Source: Mexican Economic Census, own calculations.

Table 2.A.2. Share of national employment represented by sports-related economic activities.

Share(%)	Core	Periphery	Percentile	Economic Activity
0.00010%	1	0	1	Professional athletes
0.00110%	0	1	4	Other civil engineering construction
0.00240%	0	1	7	Agents and managers for artists, athletes and similar figures
0.00430%	1	0	14	Tourist marinas
0.00630%	0	1	17	Wholesale trade of sporting goods
0.00660%	0	1	18	Supervision of other civil engineering construction works
0.00700%	1	0	18	Recreational activities regulatory associations
0.00800%	0	1	20	Independent artists, writers and technicians
0.00880%	1	0	20	Bowling centers
0.01140%	0	1	24	Promoters of performing arts, sports and similar events without facilities
0.01240%	0	1	26	Television programs production
0.01440%	1	0	29	Professional associations and organizations
0.01780%	0	1	34	Rubber footwear manufacturing
0.01860%	1	0	35	Professional sports teams
0.01950%	1	0	36	Amateur clubs or leagues
0.02800%	0	1	44	Promoters of performing arts, sports and similar events with facilities
0.02840%	1	0	44	Other recreational services, private sector
0.02950%	0	1	45	Manufacturing of sandals and footwear from other materials
0.03050%	0	1	46	Fabric upper footwear manufacturing
0.03380%	0	1	48	Public relations agencies
0.03630%	1	0	50	Golf courses
0.03690%	0	1	51	Sporting goods manufacturing
0.06220%	1	0	64	Billiard rooms and parlors
0.07160%	0	1	68	Plastic footwear manufacturing
0.07540%	0	1	69	Sale of lottery tickets, sports bets and other games of chance tickets.
0.08650%	0	1	72	Retail trade of sporting goods

Share(%)	Core	Periphery	Percentile	Economic Activity
0.09600%	1	0	74	Sports schools, private sector
0.14280%	1	0	82	Fitness centers, private sector
0.14710%	1	0	83	Sports clubs, private sector
0.19910%	0	1	88	Cut and sew uniforms manufacturing, mass production
0.22040%	0	1	89	Advertising agencies
0.41100%	0	1	95	Leather upper footwear manufacturing
0.69900%	0	1	98	Commercial & service building construction, except construction supervision

Source: Mexican Economic Census, own calculations.

Table 2.A.3. Share of national total wages represented by sports-related economic activities.

Share(%)	Core	Periphery	Percentile	Economic Activity
0.00030%	1	0	2	Professional athletes
0.00120%	0	1	5	Other civil engineering construction
0.00210%	0	1	9	Independent artists, writers and technicians
0.00230%	0	1	10	Agents and managers for artists, athletes and similar figures
0.00530%	1	0	18	Amateur clubs or leagues
0.00600%	0	1	19	Wholesale trade of sporting goods
0.00660%	0	1	21	Supervision of other civil engineering construction works
0.00660%	0	1	21	Television programs production
0.00650%	0	1	21	Promoters of performing arts, sports and similar events without facilities
0.00650%	1	0	21	Tourist marinas
0.00810%	1	0	24	Bowling centers
0.01000%	0	1	27	Manufacturing of sandals and footwear from other materials
0.01090%	0	1	29	Rubber footwear manufacturing
0.01160%	0	1	30	Promoters of performing arts, sports and similar events with facilities
0.01520%	1	0	35	Recreational activities regulatory associations
0.01610%	1	0	36	Billiard rooms and parlors
0.02390%	0	1	43	Sporting goods manufacturing
0.02350%	1	0	43	Other recreational services, private sector
0.02360%	1	0	43	Professional associations and organizations
0.02610%	0	1	46	Retail trade of sporting goods
0.02690%	1	0	47	Sports schools, private sector
0.02800%	0	1	48	Fabric upper footwear manufacturing
0.04610%	0	1	59	Plastic footwear manufacturing
0.04800%	1	0	60	Fitness centers, private sector
0.05100%	0	1	62	Public relations agencies

Share(%)	Core	Periphery	Percentile	Economic Activity
0.05090%	1	0	62	Golf courses
0.07900%	0	1	72	Sale of lottery tickets, sports bets and other games of chance tickets.
0.08150%	1	0	73	Professional sports teams
0.14040%	1	0	83	Sports clubs, private sector
0.14950%	0	1	84	Cut and sew uniforms manufacturing, mass production
0.23710%	0	1	90	Advertising agencies
0.35910%	0	1	94	Leather upper footwear manufacturing
0.63570%	0	1	97	Commercial & service building construction, except construction supervision

Source: Mexican Economic Census, own calculations.

APPENDIX 2.B. REGRESSION ANALYSIS OF THE INTENSITY IN CORE SPORTS SECTOR IN MEXICO

List of variables used for regression analysis:

Gini coefficient for inequality at the municipal level
(log10) Municipality Size by emp
(log10) Municipality wage (by effective worker)
Minimum distance (in Km) to an airport
Minimum distance (in Km) to a border
Minimum distance (in Km) to a port
Minimum distance (in Km) to a locality of more than 100
Minimum distance (in hrs) to an airport
Minimum distance (in hrs) to a border
Minimum distance (in hrs) to a port
Minimum distance (in hrs) to a locality of more than 100
% of population in Rural Localities
Education years, average by municipality
Average distance to paved road within municipality
Average homicides rate per municipality
Average total deaths by municipality
Average total deaths by execution by municipality
Average total deaths by confrontations by municipality
Average total deaths by aggressions by municipality
Municipality average elevation (mt)
Metropolitan Statistical Area (MSA)
Rank of Economic Complexity of Industry
% Indigenous population by Municipality
Minimum distance to paved road by municipality
Max distance to paved road by municipality
Average distance to paved road by municipality
Std of distance to paved road by municipality
Average age of establishments by municipality
Average age of employees by municipality
Average slope (degrees) by municipality
Mean income by municipality (2000 Pop Census)

Table 2.B..: Regression analysis between intensity in core sports by employment at the municipal level and municipal-level characteristics

	(1)	(2)	(3)
	Intensive in core sports (by employment)	Intensive in core sports (by employment)	Intensive in core sports (by employment)
Gini coefficient at the municipal level	0.587***	0.587***	0.778*
(log10) Municipality Size by emp	0.381***	0.380***	0.754**
(log10) Municipality wage (by effective worker)	-0.431***	-0.430***	-0.792***
Minimum distance (in Km) to airport	-0.001***	-0.001***	-0.00015
Minimum distance (in Km) to border	0.0002***	0.0002***	0.00171*
Education years, average by municipality	0.0281***	0.0282***	0.0455***
Avg distance to paved road within municipality	0.0483***	0.0474***	0.140**
Average homicides rate per municipality	-0.0003***	-0.0003***	-0.0004
Municipality average elevation (mt)	0.00006***	0.00006***	-0.0001
Metropolitan Statistical Area (MSA)		-0.00522	0
Constant	1.258***	1.255***	0.856
N	3539	3539	1202
r2	0.107	0.107	0.266
municipality FE	NO	NO	YES

Note: Specification (2) adds "MSA" as an explanatory variable to specification (1) while specification (3) incorporates MSA fixed effects to specification (2).

Table 2.B. Regression analysis between intensity in core sports by production at the municipal level and municipal-level characteristics

	(1)	(2)	(3)
	Intensive in core sports (by production)	Intensive in core sports (by production)	Intensive in core sports (by production)
Gini coefficient at the municipal level	0.537**	0.537**	
(log10) Municipality Size by emp	0.972***	0.972***	1.519***
(log10) Municipality wage (by effective worker)	-0.905***	-0.905***	-1.271***
Minimum distance (in Km) to airport	-0.0005**	-0.0005**	0.000514
Minimum distance (in Km) to border	0.0002***	0.0002***	0.00203**
Education years, average by municipality	0.0236***	0.0236***	0.0543***
Avg distance to paved road within municipality	-0.0226*	-0.022	
Average homicides rate per municipality	0.000247***	0.00025***	-0.000887**
Municipality average elevation (mt)			
Metropolitan Statistical Area (MSA)		0.00387	0
Rank of Economic Complexity of Industry	-0.0000006	-0.0000006	-0.000004**
% Indigeneous population by Municipality			
Min distance to paved road within municipality			
Average age of establishments by municipality	-0.05***	-0.05***	
Average age of employees by municipality			
Average slope (degrees) by municipality	0.03***	0.03***	
Constant	2.341***	2.337***	1.464*
N	3526	3526	1296
r2	0.0688	0.0688	0.229
municipality FE	NO	NO	YES

Note: Specification (2) adds "MSA" as an explanatory variable to specification (1) while specification (3) incorporates MSA fixed effects to specification (2).

APPENDIX 3.A. RESULTS AND DATA SOURCES

This appendix provides more details on the data used in Chapter 3. . It also includes the supporting data tables with the results for the cross-country and sub-national analyses.

A.1. Data Collection

A.1.1. Employment data

Employment data was collected from a variety of sources: business registries, business surveys, social security data, tax payments data, labor force surveys and censuses. The largest constraint in terms of data collection was obtaining data that allows one to disentangle the sports sector from other economic activities. Following regulations set forth by the European Commission, European countries use the NACE industry classification – or a national classification derived from it —to record their economic activities. These systems consist of four levels: sections (an alphabetical code), divisions (two numerical digits), groups (three numerical digits) and classes (four numerical digits). Most countries register the economic activity code at the four-digit class level when storing industry-related information, but publicly-available data is usually only at the more aggregated section or division level. Only at the three-digit group level is it possible to identify sports activities as a sector separate from the amusement and recreation activities included in the larger two-digit division. To characterize different dimensions of the sports industry -- such as the operation of sports facilities from fitness facilities, for example -- the data needs to be fully disaggregated at the four-digit class level.

The second constraint we encountered during data collection was obtaining data disaggregated geographically, which is required to determine the relative size of the sports sector within a country. For the most part, data derived from administrative sources are not available with high disaggregation on both the industry and regional level since such disaggregation means it might be possible to identify specific businesses or individuals. On the other hand, data obtained through surveys might not be representative or meaningful at very high levels of disaggregation such as municipality level. They might be subject to reporting errors such as the industry classification of the individual's workplace.

For comparability purposes, the cross-country analysis is based on labor force survey data on sports employment, compiled and published by Eurostat. Given that the sample size in labor force surveys may be very small within a country, we prioritized obtaining employment data from business registries or other employee administrative data for the sub-national calculations.

The tables bellow present the data used for each country, its main characteristics, and how it was obtained. In general, most of the business registries or business survey data was found online in the country's statistical

office's website and downloaded directly. For social security data, tax administrative data, or labor force surveys that supply microdata (records at the individual level), user agreements were signed between the relevant office and CID. The table also provides details on additional data sources that were consulted, but were ultimately not used in the final version of this document. These sources could serve as reference for future work.

Table 3.0.1. Employment data sources

Country	Geographic Level	Data Source	Institution	User Agreement	website
European Union	Country	Eurostat, Labor Force Survey ([sprt_emp_sex] and [lfsa_egan] tables)	Eurostat	Online	http://ec.europa.eu/eurostat/web/sport/overview
Austria	NUTS 2	Wage Tax Statistics	Statistiks Austria	user agreement	http://www.statistik.at/web_en/statistics/Economy/Public_finance_taxes/tax_statistics/index.html
Belgium	NUTS 3	Social Security Payments Data	National Social Security Office	user agreement	http://www.onssrszlss.fgov.be/en
Czech Republic	NUTS 4	Labor Force Survey	Czech Statistical Office	user agreement	https://www.czso.cz/csu/czso/labour_and_earnings_ekon
Switzerland	NUTS 3	Statistique structurelle des entreprises STATENT, Statistiques Suisse	Federal Statistics Office	Online	http://www.bfs.admin.ch/bfs/portal/fr/index/infothek/erhebungen__quellen/blank/blank/statent/01.html
Spain	NUTS 3	Muestra de Vidas Laborales	Ministerio de Empleo y Seguridad Social	user agreement	http://www.seg-social.es/Internet_1/Estadistica/Est/Muestra_Continua_de_Vidas_Laborales/index.htm
Portugal	NUTS 3	Integrated business accounts system	Statistics Portugal	Online	http://www.ine.pt
Germany	NUTS 3	Sozialversicherungspflichtig Beschäftigte nach (Social Insurance Contributions)	Statistik der Bundesagentur für Arbeit	user agreement	http://statistik.arbeitsagentur.de
Netherlands	NUTS 3	LISA, Workplace Registry	LISA Association	user agreement	http://lisa.nl/homepage
Finland	NUTS 3	Employment Statistics	Statistiks Finland	online	http://www.stat.fi/meta/til/tyokay_en.html
France	NUTS 3	Connaissance locale de l'appareil productif (CLAP)	INSEE	user agreement	http://www.insee.fr/fr/methodes/default.asp?page=sources/ope-adm-clap.htm
Italy	NUTS 2	The informative system on employment – ASIA-employment (Business Registry)	INSTAT	online	http://dati.istat.it/
Other sources consulted					
Italy	NUTS 3	Longitudinal Labour Source Survey	INSTAT	user agreement	http://www.istat.it/en/archive/36385
Portugal	NUTS 3	Census/ Public Use File	Statistics Portugal	user agreement	https://www.ine.pt/xportal/xmain?xpgid=ine_main&xpid=INE
Great Britain	Country	The Business Register and Employment Survey (BRES)	ONS	online	http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-391230
Denmark	Country	Register Based Labour Force Statistics	Statistics Denmark	online	http://www.statbank.dk/RAS300
Sweden	Country	Structural Business Statistics	Sweden	online	http://www.scb.se/en_/Finding-statistics/Statistics-by-subject-area/Business-activities/Structure-of-the-business-sector/Structural-business-statistics/

Country	Geographic Level	Data Source	Institution	User Agreement	website
France	Country	ALISE, DADS	INSEE	online	http://www.alisse2.insee.fr/SelectionMesureT1.jsp?p=1942168385

Table 3.0.2. Employment data characteristics

Country	Year	Industry Level	Classification	Industry Codes	Data Type
European Union[1]	2014	Group	NACE 2	931	Labor Force Survey
Austria	2011	Subclass	NACE 2	93111, 93119, 93120, 93130, 93190	Administrative Data (Tax)
Belgium	2007	Subclass	NACE Bel Rev 1.1	92611, 92612, 92613, 92621, 92622, 92623	Administrative Data (Social Security)
Czech Republic	2014	Class	CZ_NACE 2	9311, 9312, 9313, 9319	Labor Force Survey
Switzerland[2]	2013	Subclass	NOGA (based on NACE 2)	93110, 93120, 93130, 93190	Administrative data
Spain[3]	2013	Group	CNAE 09 (based NACE Rev 2)	931	Administrative Data (Social Security)
Portugal	2011	Class	CAE Rev 3 (based on NACE 2)	9311, 8312, 9313, 9319	Business Register
Germany	2013	Group	WZ 2008 (baed on NACE 2)	931	Administrative Data (Social Security)
Netherlands	2008	Subclass	SBI 93 (based on NACE rev 1.1)	92611-4, 92621-9, 92631-6, 92641-4, 92651-6	Administrative Data (Social Security)
Finland[4]	2012	Class	NACE 2	9311, 8312, 9313, 9319	Administrative data
France[5]	2012	Subclass	APET (based on NACE 2)	9311Z, 9312Z, 9313Z, 9319Z	Administrative data
Italy[6]	2013	Group	ATECO 2007 (based on NACE 2)	931	Business Register

Notes: 1.Eurostat publishes employment in sports activities derived from the EU-LFS. Asides from NACE 93.1 it also includes sports related occupations (ISCO 342) outside the sports sector.
2. Data is based on social security data (AVS), business registry, and also business surveys (Profiling, Profiling light, ERST, BESTA, STRU)
3. The data is a random sample consisting of 4% of those who were affiliated or received Social Security payments.
4. Based on several administrative data, including business, social security and tax registers
5. Data is obtained from several administrative sources including business register and social security data.
6. Register based on various legal, administrative and tax data. Does not include enterprises under Sections A, O, T and U, and private non-profit bodies.

A.1.2. Population and NUTS concordances

Population data for the RPOP measure were obtained from the statistical institutes of each country. In some cases, it was necessary to download

geographical concordance tables to match local administrative units used in each country to the NUTS classification. These concordances can be downloaded from Eurostat's website[40].

Table 3.0.3. Population data sources

Country	Source	Website
European Union	Eurostat Population	http://ec.europa.eu/eurostat/en/web/products-datasets/-/DEMO_PJAN
Austria	Statistiik Austria	http://www.statistik.at/web_en/statistics/PeopleSociety/population/population_censuses_register_based_census_register_based_labour_market_statistics/index.html
Belgium	Statistics Belgium	http://statbel.fgov.be/nl/modules/publications/statistiques/bevolking/population_-_cijfers_bevolking_1990-2009.jsp
Czech Republic	Czech Statistical Office	https://www.czso.cz/documents/10180/20555783/13006215q314.pdf/335f34db-bca8-48e2-8238-a9f38093d4ac?version=1.0
Switzerland	Federal Statistics Office	http://www.bfs.admin.ch/bfs/portal/en/index/themen/01/02/blank/key/bevoelkerungsstand.html
Spain	National Statistics Office	http://www.ine.es/jaxi/menu.do?L=1&type=pcaxis&path=%2Ft20%2Fe260&file=inebase
Portugal	National Statistics Office	https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_indicadores&indOcorrCod=0006350&contexto=bd&selTab=tab2
Germany	Federal Statistical Office and the statistical Offices of the Lander	http://www.statistik-portal.de/Statistik-Portal/en/en_inhalt01.asp
Netherlands	Statistics Netherlands	http://www.cbs.nl/nl-NL/menu/themas/bevolking/nieuws/default.htm
Finland	Statistics Finland	http://www.stat.fi/til/vrm_en.html
France	Insee	http://www.insee.fr/fr/themes/detail.asp?reg_id=99&ref_id=estim-pop
Italy	I.Stat	http://dati.istat.it/Index.aspx?lang=en&SubSessionId=4febddf5-6a79-4ecf-b3a2-0c83c65a21cb&themetreeid=21#

[40] http://ec.europa.eu/eurostat/web/nuts/correspondence-tables/postcodes-and-nuts

A.2 Result Tables

Table 3.0.4. Sports activities' RCA and RPOP in Europe

Country	RCA	RPOP	Country	RCA	RPOP
Belgium	0.63	0.59	Hungary	0.49	0.47
Bulgaria	0.44	0.43	Malta	0.79	0.76
Czech Republic	0.81	0.89	Netherlands	**1.24**	**1.30**
Denmark	**1.44**	**1.62**	Austria	0.93	**1.06**
Germany	0.76	0.88	Poland	0.51	0.50
Estonia	**1.40**	**1.55**	Portugal	0.99	**1.00**
Ireland	**1.31**	**1.25**	Romania (u)	0.17	0.18
Greece	0.56	0.42	Slovenia	0.63	0.65
Spain	**1.50**	**1.31**	Slovakia	0.74	0.75
France	0.89	0.80	Finland	**1.76**	**1.83**
Croatia (u)	0.54	0.47	Sweden	**2.14**	**2.45**
Italy	0.75	0.64	United Kingdom	**1.81**	**1.99**
Cyprus	0.81	0.79	Iceland	**2.72**	**3.39**
Latvia	0.92	0.94	Norway	**1.26**	**1.52**
Lithuania (u)	0.63	0.65	Switzerland	**1.29**	**1.63**
Luxembourg	0.68	0.71	FYR Macedonia (u)	0.39	0.30
			Turkey	0.36	0.28

Source: CID staff calculation based on Eurostat [sprt_emp_sex] ,[demo_pjan], and [lfsa_egan] tables.
Note: u- unreliable data due to small sample size

Table 3.0.5. Sports activities' RCA and RPOP in Austria, NUTS 1 and 2 (2008)

NUTS_ID	Name	Population	RCA	RPOP
AT	**ÖSTERREICH**	**8,341,324**	**0.93**	**1.06**
AT1	OSTÖSTERREICH	3,567,521	0.95	0.93
AT11	Burgenland	282,765	1.49	1.49
AT12	Niederösterreich	1,603,707	0.84	0.84
AT13	Wien	1,681,049	0.96	0.92
AT2	SÜDÖSTERREICH	1,766,757	0.99	0.97
AT21	Kärnten	560,262	1.01	0.96
AT22	Steiermark	1,206,495	0.98	0.98
AT3	WESTÖSTERREICH	3,007,046	1.07	1.10
AT31	Oberösterreich	1,409,445	0.79	0.82
AT32	Salzburg	528,536	1.49	1.56
AT33	Tirol	702,299	1.29	1.33
AT34	Vorarlberg	366,766	1.08	1.04

Source: Staff calculation based on EU-LFS (for country level) and data from Statistics Austria

Table 3.0.6. Sports activities' RCA and RPOP in Belgium, NUTS 1, 2 and 3 (2007)

NUTS_ID	Name	Population	RCA	RPOP
BE	**BELGIQUE-BELGIË**	**10,584,534**	**0.63**	**0.59**
BE1	RÉGION DE BRUXELLES-CAPITALE	1,031,215	0.80	1.36
BE10	Région de Bruxelles-Capitale	1,031,215	0.80	1.36
BE100	Arr. de Bruxelles-Capitale	1,031,215	0.80	1.36
BE2	VLAAMS GEWEST	6,117,440	1.04	1.03
BE21	Prov. Antwerpen	1,700,570	1.08	1.18
BE211	Arr. Antwerpen	961,131	1.07	1.24
BE212	Arr. Mechelen	316,224	1.00	1.04
BE213	Arr. Turnhout	423,215	1.18	1.17
BE22	Prov. Limburg (BE)	820,272	1.15	1.07
BE221	Arr. Hasselt	398,055	1.08	1.23
BE222	Arr. Maaseik	228,034	1.38	1.12
BE223	Arr. Tongeren	194,183	1.06	0.69
BE23	Prov. Oost-Vlaanderen	1,398,253	1.10	1.01
BE231	Arr. Aalst	267,274	1.10	0.75
BE232	Arr. Dendermonde	189,638	0.97	0.67
BE233	Arr. Eeklo	80,547	0.73	0.52
BE234	Arr. Gent	512,407	1.10	1.30
BE235	Arr. Oudenaarde	117,125	0.99	0.80
BE236	Arr. Sint-Niklaas	231,262	1.37	1.22
BE24	Prov. Vlaams-Brabant	1,052,467	0.79	0.76
BE241	Arr. Halle-Vilvoorde	580,407	0.78	0.81
BE242	Arr. Leuven	472,060	0.80	0.69
BE25	Prov. West-Vlaanderen	1,145,878	1.05	1.04
BE251	Arr. Brugge	274,772	1.13	1.18
BE252	Arr. Diksmuide	48,570	0.87	0.58
BE253	Arr. Ieper	104,798	1.06	0.93
BE254	Arr. Kortrijk	278,160	1.00	1.15
BE255	Arr. Oostende	148,325	1.16	0.88
BE256	Arr. Roeselare	142,776	0.73	0.83
BE257	Arr. Tielt	89,178	0.90	0.89
BE258	Arr. Veurne	59,299	1.97	1.63
BE3	RÉGION WALLONNE	3,435,879	1.04	0.84
BE31	Prov. Brabant Wallon	370,460	1.18	0.99
BE310	Arr. Nivelles	370,460	1.18	0.99
BE32	Prov. Hainaut	1,294,844	1.01	0.79
BE321	Arr. Ath	81,825	0.63	0.39
BE322	Arr. Charleroi	422,598	0.99	0.86
BE323	Arr. Mons	249,878	0.73	0.56
BE324	Arr. Mouscron	70,718	2.86	2.86
BE325	Arr. Soignies	180,154	0.88	0.59
BE326	Arr. Thuin	147,475	0.68	0.35
BE327	Arr. Tournai	142,196	0.98	0.88
BE33	Prov. Liège	1,047,414	1.13	0.95
BE331	Arr. Huy	104,756	1.00	0.67
BE332	Arr. Liège	594,579	1.04	0.97
BE334	Arr. Waremme	73,106	1.44	0.70
BE335	Arr. Verviers (including BE336)	274,973	1.35	1.09
BE34	Prov. Luxembourg (BE)	261,178	0.74	0.59

NUTS_ID	Name	Population	RCA	RPOP
BE341	Arr. Arlon	55,593	0.38	0.36
BE342	Arr. Bastogne	43,444	1.23	0.86
BE343	Arr. Marche-en-Famenne	53,123	1.02	0.89
BE344	Arr. Neufchâteau	58,151	0.28	0.25
BE345	Arr. Virton	50,867	1.28	0.67
BE35	Prov. Namur	461,983	0.97	0.76
BE351	Arr. Dinant	104,017	1.00	0.66
BE352	Arr. Namur	294,320	0.97	0.86
BE353	Arr. Philippeville	63,646	0.89	0.48

Source: Staff calculation based on EU-LFS (for country level) and data from Statistics Belgium and ONSS

Table 3.0.7. Sports activities' RCA and RPOP in Czech Republic, NUTS 1,2 and 3 (2014)

NUTS_ID	Name	Population	RCA	RPOP
CZ	**ČESKÁ REPUBLIKA**	**10,538,275**	0.81	0.89
CZ0	ČESKÁ REPUBLIKA	10,538,275	1.00	1.00
CZ01	Praha	1,259,079	1.79	1.95
CZ010	Hlavní město Praha	1,259,079	1.79	1.95
CZ02	Střední Čechy	1,315,299	0.80	0.81
CZ020	Středočeský kraj	1,315,299	0.80	0.81
CZ03	Jihozápad	1,212,423	0.61	0.62
CZ031	Jihočeský kraj	637,300	0.73	0.73
CZ032	Plzeňský kraj	575,123	0.48	0.49
CZ04	Severozápad	1,123,265	1.19	1.13
CZ041	Karlovarský kraj	299,293	1.26	1.25
CZ042	Ústecký kraj	823,972	1.16	1.09
CZ05	Severovýchod	1,506,813	1.26	1.24
CZ051	Liberecký kraj	438,851	1.22	1.19
CZ052	Královéhradecký kraj	551,590	1.74	1.71
CZ053	Pardubický kraj	516,372	0.78	0.79
CZ06	Jihovýchod	1,682,748	0.44	0.45
CZ063	Kraj Vysočina	509,895	0.27	0.27
CZ064	Jihomoravský kraj	1,172,853	0.52	0.52
CZ07	Střední Morava	1,220,972	1.04	1.00
CZ071	Olomoucký kraj	635,711	1.02	0.96
CZ072	Zlínský kraj	585,261	1.05	1.04
CZ08	Moravskoslezsko	1,217,676	0.99	0.95
CZ080	Moravskoslezský kraj	1,217,676	0.99	0.95

Source: Staff calculation based on EU-LFS (for country level) and data from the Czech Statistical Office

Table 3.0.8. Sports activities' RCA and RPOP in Finland, NUTS 1, 2 and 3 (2012)

NUTS_ID	Name	Population	RCA	RPOP
FI	**SUOMI / FINLAND**	**5,486,616**	**1.00**	**1.00**
FI1	MANNER-SUOMI	5,457,624	1.00	1.00
FI19	Länsi-Suomi	1,378,955	0.91	0.88
FI193	Keski-Suomi	275,722	1.25	1.15
FI194	Etelä-Pohjanmaa	192,580	0.65	0.62
FI195	Pohjanmaa	181,635	0.58	0.60
FI196	Satakunta	222,920	1.03	0.99
FI197	Pirkanmaa	506,098	0.92	0.89
FI1B	Helsinki-Uusimaa	1,620,163	1.21	1.38
FI1B1	Helsinki-Uusimaa	1,620,163	1.21	1.38
FI1C	Etelä-Suomi	1,160,166	0.96	0.90
FI1C1	Varsinais-Suomi	474,164	0.84	0.82
FI1C2	Kanta-Häme	174,682	0.87	0.80
FI1C3	Päijät-Häme	201,532	1.24	1.13
FI1C4	Kymenlaakso	178,675	0.92	0.82
FI1C5	Etelä-Karjala	131,113	1.20	1.11
FI1D	Pohjois- ja Itä-Suomi	1,298,340	0.80	0.73
FI1D1	Etelä-Savo	150,292	0.81	0.73
FI1D2	Pohjois-Savo	248,112	0.92	0.86
FI1D3	Pohjois-Karjala	164,744	0.97	0.86
FI1D4	Kainuu	78,388	1.01	0.89
FI1D5	Keski-Pohjanmaa	68,990	0.81	0.78
FI1D6	Pohjois-Pohjanmaa	406,966	0.73	0.66
FI1D7	Lappi	180,848	0.54	0.49
FI2	ÅLAND	28,992	1.09	1.36
FI20	Åland	28,992	1.09	1.36
FI200	Åland	28,992	1.09	1.36

Source: Staff calculation based on EU-LFS (for country level) and data from Statistics Finland

Table 3.0.9. Sports activities' RCA and RPOP in France, NUTS 1 and 2 (2012)[41]

NUTS_ID	Name	Population	RCA	RPOP
FR	**FRANCE**	**65,241,241**	**0.89**	**0.80**
FR1	ÎLE DE FRANCE	11,898,502	1.18	1.51
FR10	Île de France	11,898,502	1.18	1.54
FR2	BASSIN PARISIEN	10,800,000	0.98	0.87
FR21	Champagne-Ardenne	1,339,270	0.67	0.61
FR22	Picardie	1,922,342	1.11	0.93
FR23	Haute-Normandie	1,845,547	1.00	0.94
FR24	Centre	2,563,586	1.00	0.91
FR25	Basse-Normandie	1,477,209	1.13	1.03
FR26	Bourgogne	1,641,130	0.90	0.84
FR3	NORD - PAS-DE-CALAIS	4,050,756	0.76	0.69
FR30	Nord - Pas-de-Calais	4,050,756	0.76	0.71
FR4	EST	5,385,369	0.60	0.54
FR41	Lorraine	2,349,816	0.64	0.55
FR42	Alsace	1,859,869	0.43	0.44
FR43	Franche-Comté	1,175,684	0.81	0.72
FR5	OUEST	8,653,702	0.93	0.87
FR51	Pays de la Loire	3,632,614	0.97	0.96
FR52	Bretagne	3,237,097	0.97	0.90
FR53	Poitou-Charentes	1,783,991	0.78	0.70
FR6	SUD-OUEST	6,951,195	1.05	0.97
FR61	Aquitaine	3,285,970	1.22	1.14
FR62	Midi-Pyrénées	2,926,592	0.91	0.88
FR63	Limousin	738,633	0.86	0.77
FR7	CENTRE-EST	7,695,264	1.00	0.99
FR71	Rhône-Alpes	6,341,160	1.01	1.04
FR72	Auvergne	1,354,104	0.95	0.87
FR8	MÉDITERRANÉE	6,579,576	1.11	1.18
FR81	Languedoc-Roussillon	2,700,266	1.16	0.95
FR82	Provence-Alpes-Côte d'Azur	4,935,576	1.07	1.02
FR83	Corse	316,257	1.28	1.17
FR9	DÉPARTEMENTS D'OUTRE-MER	1,865,270	0.88	0.65
FR91	Guadeloupe	388,364	0.72	0.60
FR92	Martinique	388,364	0.90	0.77
FR93	Guyane	239,648	0.70	0.43
FR94	La Réunion	833,944	1.00	0.73

Source: Calculations based on EU-LFS (for country level) and data from INSEE

[41] Data for France at the NUTS 3 (district) level is available upon request

Table 3.0.10 Sports activities RCA and RPOP in Germany, NUTS 1 and 2 (2013)[42]

NUTS_ID	Name	Population	RCA	RPOP
DE	**DEUTSCHLAND**	**80,767,464**	**0.76**	**0.88**
DE1	BADEN-WÜRTTEMBERG	10,631,278	0.91	0.86
DE11	Stuttgart	3,972,881	1.04	0.86
DE12	Karlsruhe	2,702,831	0.95	0.92
DE13	Freiburg	2,174,500	0.82	0.84
DE14	Tübingen	1,781,066	0.73	0.80
DE2	BAYERN	12,604,244	0.79	0.92
DE21	Oberbayern	4,469,342	1.33	1.25
DE22	Niederbayern	1,189,153	0.46	0.62
DE23	Oberpfalz	1,077,991	0.52	0.67
DE24	Oberfranken	1,056,365	0.44	0.64
DE25	Mittelfranken	1,707,376	0.76	0.85
DE26	Unterfranken	1,297,992	0.44	0.59
DE27	Schwaben	1,806,025	0.72	0.88
DE3	BERLIN	3,421,829	2.67	1.32
DE30	Berlin	3,421,829	2.67	1.32
DE4	BRANDENBURG	2,449,193	0.88	1.14
DE40	Brandenburg	2,449,193	0.88	1.14
DE5	BREMEN	657,391	1.77	1.45
DE50	Bremen	657,391	1.77	1.45
DE6	HAMBURG	1,746,342	3.29	1.64
DE60	Hamburg	1,746,342	3.29	1.64
DE7	HESSEN	6,045,425	1.00	0.97
DE71	Darmstadt	3,822,479	1.32	1.17
DE72	Gießen	1,023,150	0.53	0.57
DE73	Kassel	1,199,796	0.60	0.69
DE8	MECKLENBURG-VORPOMMERN	1,596,505	0.86	1.00
DE80	Mecklenburg-Vorpommern	1,596,505	0.86	1.00
DE9	NIEDERSACHSEN	7,790,559	1.00	1.05
DE91	Braunschweig	1,574,936	1.24	1.34
DE92	Hannover	2,099,079	1.54	1.26
DE93	Lüneburg	1,670,199	0.74	0.86
DE94	Weser-Ems	2,446,345	0.70	0.82
DEA	NORDRHEIN-WESTFALEN	17,571,856	1.17	0.99
DEA1	Düsseldorf	5,088,748	1.48	1.22
DEA2	Köln	4,333,015	1.35	1.05
DEA3	Münster	2,574,148	0.94	0.81
DEA4	Detmold	2,024,392	0.90	0.86
DEA5	Arnsberg	3,551,553	0.90	0.78
DEB	RHEINLAND-PFALZ	3,994,366	0.80	0.94
DEB1	Koblenz	1,474,378	0.69	0.86
DEB2	Trier	519,136	0.48	0.64
DEB3	Rheinhessen-Pfalz	2,000,852	0.99	1.08
DEC	SAARLAND	990,718	0.91	0.98
DEC0	Saarland	990,718	0.91	0.98

[42] Data for Germany at the NUTS 3 (district) level is available upon request

NUTS_ID	Name	Population	RCA	RPOP
DEC3	Neunkirchen	133,222	0.38	0.47
DED	SACHSEN	4,046,385	1.03	1.06
DED2	Dresden	1,590,927	1.17	1.13
DED4	Chemnitz	1,468,954	0.87	0.97
DED5	Leipzig	986,504	1.07	1.06
DEE	SACHSEN-ANHALT	2,244,577	0.73	0.92
DEE0	Sachsen-Anhalt	2,244,577	0.73	0.92
DEF	SCHLESWIG-HOLSTEIN	2,815,955	0.96	1.10
DEF0	Schleswig-Holstein	2,815,955	0.96	1.10
DEG	THÜRINGEN	2,160,840	0.57	0.82
DEG0	Thüringen	2,160,840	0.57	0.82

Source: Staff calculation based on EU-LFS (for country level) and data from Federal Statistical Office and the statistical Offices of the Länder

Table 3.0.11 Sports activities' RCA and RPOP in Italy, NUTS 1 and 2 (2013)

NUTS_ID	Name	Population	RCA	RPOP
IT	**ITALIA**	**59,685,227**	**0.75**	**0.64**
ITC	NORD-OVEST	15,861,548	0.92	1.23
ITC1	Piemonte	4,374,052	1.00	1.09
ITC2	Valle d'Aosta/Vallée d'Aoste	127,844	2.13	1.94
ITC3	Liguria	1,565,127	1.35	1.18
ITC4	Lombardia	9,794,525	0.85	1.30
ITF	SUD	13,980,833	1.08	0.60
ITF1	Abruzzo	1,312,507	1.37	1.06
ITF2	Molise	313,341	0.45	0.22
ITF3	Campania	5,769,750	1.12	0.62
ITF4	Puglia	4,050,803	0.94	0.53
ITF5	Basilicata	576,194	0.94	0.50
ITF6	Calabria	1,958,238	1.16	0.45
ITG	ISOLE	6,640,311	1.13	0.55
ITG1	Sicilia	4,999,932	1.16	0.53
ITG2	Sardegna	1,640,379	1.05	0.61
ITH	NORD-EST	11,521,037	1.08	1.34
ITH1	Provincia Autonoma di Bolzano/Bozen	509,626	1.58	2.08
ITH2	Provincia Autonoma di Trento	530,308	1.18	1.32
ITH3	Veneto	4,881,756	1.03	1.26
ITH4	Friuli-Venezia Giulia	1,221,860	0.67	0.73
ITH5	Emilia-Romagna	4,377,487	1.16	1.51
ITI	CENTRO (IT)	11,681,498	0.95	1.09
ITI1	Toscana	3,692,828	1.22	1.21
ITI2	Umbria	886,239	1.35	1.24
ITI3	Marche	1,545,155	0.85	0.84
ITI4	Lazio	5,557,276	0.80	1.05

Source: Staff calculation based on EU-LFS (for country level) and data from IStat

Table 3.0.12. Sports activities' RCA and RPOP in the Netherlands, NUTS 1, 2 and 3 (2008)

NUTS_ID	Name	Population	RCA	RPOP
NL	**NEDERLAND**	**16,485,787**	**1.24**	**1.30**
NL1	NOORD-NEDERLAND	1,708,821	1.12	1.00
NL11	Groningen	574,092	0.85	0.86
NL111	Oost-Groningen	152,172	1.06	0.59
NL112	Delfzijl en omgeving	49,401	0.99	0.81
NL113	Overig Groningen	372,519	0.79	0.92
NL12	Friesland (NL)	644,811	1.53	1.29
NL121	Noord-Friesland	331,455	1.58	1.42
NL122	Zuidwest-Friesland	105,802	2.48	0.43
NL123	Zuidoost-Friesland	207,554	1.37	1.33
NL13	Drenthe	489,918	0.98	0.97
NL131	Noord-Drenthe	188,915	1.02	0.92
NL132	Zuidoost-Drenthe	171,479	1.05	0.96
NL133	Zuidwest-Drenthe	129,524	0.85	0.87
NL2	OOST-NEDERLAND	3,499,946	1.01	1.06
NL21	Overijssel	1,125,435	0.89	0.97
NL211	Noord-Overijssel	351,878	0.83	0.91
NL212	Zuidwest-Overijssel	152,265	1.18	1.13
NL213	Twente	621,292	0.87	0.88
NL22	Gelderland	1,991,062	1.07	1.21
NL221	Veluwe	650,922	1.10	1.24
NL224	Zuidwest-Gelderland	402,200	0.87	0.50
NL225	Achterhoek	703,792	1.02	0.58
NL226	Arnhem/Nijmegen	234,148	1.12	3.69
NL23	Flevoland	1,210,869	1.06	0.34
NL230	Flevoland	368,174	1.06	1.07
NL3	WEST-NEDERLAND	7,719,856	1.03	1.00
NL31	Utrecht	1,210,869	1.01	1.24
NL310	Utrecht	1,210,869	1.01	1.18
NL32	Noord-Holland	2,646,445	1.09	1.28
NL321	Kop van Noord-Holland	368,174	1.30	0.87
NL322	Alkmaar en omgeving	229,879	1.66	1.58
NL323	IJmond	191,470	1.83	1.72
NL324	Agglomeratie Haarlem	217,977	1.61	1.46
NL325	Zaanstreek	159,955	0.94	0.83
NL326	Groot-Amsterdam	1,235,514	0.84	1.18
NL327	Het Gooi en Vechtstreek	243,476	1.20	1.24
NL33	Zuid-Holland	3,481,558	1.03	0.85
NL332	Agglomeratie 's-Gravenhage	391,986	1.57	1.24
NL333	Delft en Westland	794,009	1.21	0.37
NL337	Agglomeratie Leiden en Bollenstreek	213,551	0.98	1.55
NL338	Oost-Zuid-Holland	322,240	0.98	0.69
NL339	Groot-Rijnmond	1,367,012	0.98	0.91
NL33A	Zuidoost-Zuid-Holland	392,760	0.69	0.62
NL34	Zeeland	380,984	0.58	0.60
NL341	Zeeuwsch-Vlaanderen	107,191	0.45	0.45
NL342	Overig Zeeland	273,793	0.63	0.62
NL4	ZUID-NEDERLAND	3,557,164	0.89	0.94
NL41	Noord-Brabant	2,434,560	0.92	1.07

NUTS_ID	Name	Population	RCA	RPOP
NL411	West-Noord-Brabant	612,073	0.93	1.00
NL412	Midden-Noord-Brabant	456,033	1.29	1.31
NL413	Noordoost-Noord-Brabant	633,723	0.85	0.97
NL414	Zuidoost-Noord-Brabant	732,731	0.76	0.89
NL42	Limburg (NL)	1,122,604	0.81	0.81
NL421	Noord-Limburg	279,355	0.58	0.49
NL422	Midden-Limburg	234,364	1.10	1.09
NL423	Zuid-Limburg	608,885	0.79	0.78

Source: Staff calculation based on EU-LFS (for country level) and data from Statistics Netherlands and LISA

Table 3.0.13. Sports activities' RCA and RPOP in Portugal, NUTS 1,2 and 3 (2011)

NUTS_ID	Name	Population	RCA	RPOP
PT	**PORTUGAL**	**10562178**	**0.99**	**1.00**
PT1	*CONTINENTE*	*10047621*	*0.98*	*1.00*
PT11	Norte	3689682	0.70	0.66
PT111	Alto Minho	244,836	0.73	0.49
PT112	Cávado	410,169	0.49	0.46
PT113	Ave	511,737	0.48	0.54
PT114	Grande Porto	1287282	1.04	1.16
PT115	Tâmega	550,516	0.54	0.48
PT116	Entre Douro e Vouga	274,859	0.26	0.26
PT117	Douro	205,902	0.11	0.05
PT118	Alto Trás-os-Montes	204,381	0.27	0.11
PT15	Algarve	451,006	3.66	3.33
PT150	Algarve	451,006	3.66	3.33
PT16	Centro (PT)	2327755	0.72	0.54
PT161	Baixo Vouga	390,822	0.49	0.42
PT162	Baixo Mondego	332,326	0.41	0.30
PT163	Pinhal Litoral	260,942	0.91	1.01
PT164	Pinhal Interior Norte	131,468	0.15	0.09
PT165	Dão-Lafões	277,240	0.68	0.46
PT166	Pinhal Interior Sul	40,705	0.22	0.11
PT167	Serra da Estrela	43,737	0.17	0.07
PT168	Beira Interior Norte	104,417	2.67	1.27
PT169	Beira Interior Sul	75,028	0.05	0.02
PT16A	Cova da Beira	87,869	0.25	0.13
PT16B	Oeste	362,540	0.80	0.63
PT16C	Médio Tejo	220,661	1.41	0.92
PT17	Área Metropolitana de Lisboa	2821876	1.17	1.70
PT171	Grande Lisboa	2042477	1.17	2.05
PT172	Península de Setúbal	779,399	1.19	0.78
PT18	Alentejo	757,302	-	-
PT181	Alentejo Litoral	97,925	-	-

NUTS_ID	Name	Population	RCA	RPOP
PT182	Alto Alentejo	118,410	-	-
PT183	Alentejo Central	166,822	-	-
PT184	Baixo Alentejo	126,692	-	-
PT185	Lezíria do Tejo	247,453	-	-
PT2	*REGIÃO AUTÓNOMA DOS AÇORES*	246,772	0.74	0.48
PT20	Região Autónoma dos Açores	246,772	0.74	0.48
PT200	Região Autónoma dos Açores	246,772	0.74	0.48
PT3	*REGIÃO AUTÓNOMA DA MADEIRA*	267,785	2.15	1.65
PT30	Região Autónoma da Madeira	267,785	2.15	1.65
PT300	Região Autónoma da Madeira	267,785	2.15	1.65

Source: Calculations based on EU-LFS (for country level) and data from INE

Table 3.0.14. Sports activities' RCA and RPOP in Spain, NUTS 1 and 2 (2013) [43]

NUTS_ID	Name	Population	RCA	RPOP
ES	**ESPAÑA**	**47,129,784**	**1.50**	**1.31**
ES1	NOROESTE	4,425,993	0.91	0.88
ES11	Galicia	2,765,940	0.84	0.81
ES12	Principado de Asturias	1,068,165	0.92	0.86
ES13	Cantabria	591,888	1.23	1.23
ES2	NORESTE	4,505,336	1.27	1.38
ES21	País Vasco	2,191,682	1.20	1.32
ES22	Comunidad Foral de Navarra	644,477	1.82	2.00
ES23	La Rioja	322,027	1.12	1.17
ES24	Aragón	1,347,150	1.17	1.21
ES3	COMUNIDAD DE MADRID	6,495,551	1.04	1.15
ES30	Comunidad de Madrid	6,495,551	1.04	1.15
ES4	CENTRO (ES)	5,724,877	0.73	0.70
ES41	Castilla y León	2,519,875	0.83	0.81
ES42	Castilla-La Mancha	2,100,998	0.71	0.67
ES43	Extremadura	1,104,004	0.53	0.48
ES5	ESTE	13,779,139	1.13	1.15
ES51	Cataluña	7,553,650	1.16	1.26
ES52	Comunidad Valenciana	5,113,815	0.96	0.89
ES53	Illes Balears	1,111,674	1.52	1.59
ES6	SUR	10,080,208	0.82	0.75
ES61	Andalucía	8,440,300	0.81	0.74
ES62	Región de Murcia	1,472,049	0.81	0.77
ES63	Ciudad Autónoma de Ceuta	84,180	1.35	0.99
ES64	Ciudad Autónoma de Melilla	83,679	2.07	1.54
ES7	CANARIAS	2,118,679	1.03	0.99
ES70	Canarias	2,118,679	1.03	0.99

Source: *Calculations based on EU-LFS (for country level) and data from Ministerio Ministerio de Empleo y Seguridad Social de España*

[43] Data for Germany at the NUTS 3 (district) level is available upon request

Table 3.0.15. Sports activities' RCA and RPOP in Switzerland, NUTS 1, 2 and 3 (2011)

NUTS_ID	Name	Population	RCA	RPOP
CH	**CONFÉDÉRATION SUISSE**	**8,035,391**	**1.29**	**1.63**
CH0	CONFÉDÉRATION SUISSE	8,035,391	1.29	1.63
CH01	Lémanic	1,523,811	0.98	0.96
CH011	Vaud	734,604	1.12	1.03
CH012	Valais / Wallis	324,843	1.05	0.89
CH013	Genève	464,364	0.78	0.91
CH02	Espace Mittelland	1,783,851	1.06	1.02
CH021	Bern / Berne	992,782	1.22	1.25
CH022	Fribourg / Freiburg	287,066	0.77	0.62
CH023	Solothurn	258,733	0.91	0.78
CH024	Neuchâtel	174,373	0.86	0.82
CH025	Jura	70,897	0.67	0.64
CH03	Nordwestschweiz	1,089,565	0.88	0.87
CH031	Basel-Stadt	189,365	0.83	1.32
CH032	Basel-Landschaft	277,014	0.87	0.74
CH033	Aargau	623,186	0.92	0.78
CH04	Zürich	1,405,140	1.08	1.22
CH040	Zürich	1,405,140	1.08	1.22
CH05	Ostschweiz	1,129,694	0.95	0.88
CH051	Glarus	39,834	1.07	0.96
CH052	Schaffhausen	77,999	0.99	0.93
CH053	Appenzell Ausserrhoden	53,566	0.85	0.67
CH054	Appenzell Innerrhoden	15,794	0.81	0.71
CH055	St. Gallen	486,380	0.91	0.88
CH056	Graubünden / Grigioni / Grischun	201,796	1.16	1.19
CH057	Thurgau	254,325	0.81	0.67
CH06	Zentralschweiz	764,051	0.94	0.96
CH061	Luzern	384,665	0.90	0.90
CH062	Uri	35,775	0.99	0.82
CH063	Schwyz	149,244	1.04	0.88
CH064	Obwalden	36,323	1.29	1.27
CH065	Nidwalden	41,609	1.15	1.02
CH066	Zug	116,435	0.83	1.22
CH07	Ticino	339,279	1.08	1.11
CH070	Ticino	339,279	1.08	1.11

Source: Staff calculation based on EU-LFS (for country level) and data from Swiss Statistics