

Characteristics of Firms Exporting Skilled Labor: The Football Case of Germany, China, and Brazil

February 2017

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Abstract:

In the two decades since Bernard and Jensen (1995) first disaggregated traditional country-level analysis to conclude that only the most productive U.S. manufacturing firms export, little is yet known about whether this summary also applies to services firms.² To help fill this gap, we study the level of competitiveness of Mode 4 services suppliers (football teams) in Brazil, China, and Germany, as compared to the non-exporters in their sector, and then use descriptive statistics to assess the impact of the regulatory barriers designed to limit the number and nationality of workers traded to a given firm. Unlike with manufacturers, for which only the exceptional firms export, the paper finds that the average football-player exporting firm in those countries often has a similar market value to the average market value of all other professional football firms in a given country. This means that even a country's smaller teams overcome a variety of foreign trade barriers in order to compete in highly competitive global markets, which is notable as there is some evidence that firms can improve their productivity when they engage in exports.

Bio:

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¹ This article is the result of ongoing professional research of ITC Staff and is solely meant to represent the opinions and professional research of the authors. It is not meant to represent in any way the views of the U.S. International Trade Commission or any of its individual Commissioners. We are grateful to Paul Kaiser for useful comments and suggestions. Please address correspondence to jeremy.streatfeild@usitc.gov.

I gratefully acknowledge comments from Art Chambers, Alex Hammer and Sarah Oliver. All errors are my own.

² Jansen and Piermartini (2009) define immigrant temporary workers, through programs like the German green card program or the US H1B visa, as “foreigners authorized to perform non-permanent, fixed-term labour services and their employment and residency authorization is legally contingent.”

Introduction

In the two decades since Bernard and Jensen (1995) first disaggregated traditional country-level analysis to conclude that only the most productive U.S. manufacturing firms export, little is yet known about whether this summary also applies to services firms.³ This is because services trade is conducted over four modes of supply, each of which are notoriously difficult to quantify. However, the share of firms that export in a particular sector can indicate, or even affect, the sector's long-term success so this gap in the literature warrants treatment. For example, Hamilton and Whalley (1984) estimated that sufficiently freeing movement of labor to equalize global wages would result in a 150 percent increase in global incomes. Martin (2006) adds that a three percent increase in migrant workers to the OECD workforce, for example, would improve global GDP by up to \$350 billion. In other words, the movement of labor has large economic impacts at the national level, we study what this means for the firms that export that labor.

Limited by data availability on services firms, this paper analyzes firms engaged in the fourth mode of supply—the temporary movement of natural persons by using a dataset on transfers in the global trade of football players (labor) by teams (firms) in 47 countries. The policy implications of exporter-productivity is particularly pertinent⁴--as developments in recent months have seen Brexit negotiations consider restricting the migration of skilled workers into

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⁴ Magdeleine and Maurer (2008, p. 4) summarize that “Mode 4, presence of natural persons, occurs when an individual is present in the territory of an economy other than his own to provide a commercial service. GATS defines mode 4 as the supply of a service by “a service supplier of one Member, through presence of natural persons of a Member in the territory of any other Member.”

the United Kingdom⁵ and the United States weighs applying similar measures to a select group of countries.⁶ Consequently, the subject of regulation on global labor flows is timely as many countries rely on services for as much as 80 percent of their workforce but little is known about the role, for the domestic economy, of services firms that export skilled labor—such as law firms and consultancies.

We study the level of competitiveness of those services firms, as compared to the non-exporters in their sector, and then use descriptive statistics to assess the impact of the regulatory barriers designed to limit the number and nationality of workers traded to a given firm. Unlike with manufacturers, for which only the exceptional firms export, the paper finds that the average football-player exporting firm often has a similar market value to the average market value of all other professional football firms in a given country. This means that even a country's smaller teams overcome a variety of foreign trade barriers in order to compete in highly competitive global markets, which is notable as there is some evidence that firms can improve their productivity when they engage in exports. By comparison, trade impediments restrict manufacturing exports to only the most productive firms who have the capacity of scale to surmount foreign barriers—many of those firms which do not export soon exit the market.

Finally, we incorporate both direct and indirect impacts of exporting to motivate our analysis of football firms. For the former, the ability of a firm to export signals that it has sufficient productivity with which to overcome foreign obstacles to trade (e.g. regulatory barriers and information asymmetries). For the latter, the process of exporting offers firms a larger

⁵ <http://www.dailymail.co.uk/news/article-3839154/EU-workers-visa-skilled-job.html> (accessed on January 31, 2017).

⁶ https://www.washingtonpost.com/news/powerpost/wp/2017/01/29/trapped-by-executive-order-foreign-students-and-high-skilled-workers-had-long-been-targets-of-trump-team/?utm_term=.e028bb4ce8a4 (accessed on January 31, 2017).

market for their products and services which may, in turn, increase their productivity and improve wages for their workers. Much of the existing empirical literature, therefore, concludes that only a select few firms in a country-sector actually export. This can be characterized as a policy problem. This paper's findings that a more diverse array of firms exported successfully could offer both theoretical insights and policy guidance on how to raise a sector's overall competitiveness. However, policy is beyond the ambition of this paper, we similarly intend to highlight areas for further study.

Country Cases

In order to unpack the general findings we use three case studies of temporary exports of labor by football firms in Germany, Brazil, and China. Germany was selected because its football firms are traditionally strong performers and have seen their profitably grow in recent years which makes it a useful counterpoint through which to view the other two cases. Brazil's league is considerably smaller than Germany's but Brazilian players are widely seen as some of the most skilled in the world. This may explain why Brazil is the largest global supplier of foreign football players despite a struggling domestic league.⁷ Finally, China has a small football sector which has made newspaper headlines for its recent wave of imports of expensive players. Less well known is that the league also exports. These last two cases offer interesting insights into the export capacity of small firms in small leagues, as well as through their contrast with the larger exporting German sector.

⁷ Some analysts see a causal link between these two factors.

Although much of the paper focuses on descriptive statistics of exporter-firm size, there is some room for qualitative inferences about the cause of these smaller-firm successes. For example, there may be brand-awareness that drives foreign firms to collect more information about players in even small Brazilian teams. However, China's teams still have very little brand awareness but a wide array of its firms still manage to export. This points to one potential explanation for the greater levels of export-competitiveness of small football firms⁸ is the availability of extensive worker-level data that can mitigate the impact of information asymmetries and inform teams about the attributes and skill of any player with a seeming 24-hour supply of football on television and data about those players on websites so that smaller firms can get out information about the skillset of their players to foreign teams. We even find that smaller firms in smaller leagues of China and Brazil, export in a greater proportion than do smaller firms in Germany's larger league.

Competitiveness of Exporting firms

The literature on manufacturing firms contends that those which export stand out on various metrics such that the higher the share of firms that export the greater the overall competitiveness of that sector. Only a few manufacturing firms in a sector export (Bernard et al 2012) and those that do are larger, more productive, and more capital-intensive (Bernard, Jensen and Lawrence 1995, 71). Furthermore, Bernard, Jensen and Lawrence (1995, 71) estimate that exporting manufacturers pay 14 percent higher wages. In sum, workers earn higher wages and enjoy better employment opportunities for the future through the faster growth and better

⁸ Loosely defined, competitiveness is the ability to produce quality players that are valued for export. As football grows, this is no easy feat and many teams are looking to develop academies for this purpose (cite).

productivity of exporting firms. This holds for a summary of subsequent analyses of exporting firms in 33 countries which confirms that exporters are more productive and enjoy higher productivity growth (Wagner 2005, 10).

Firm-level exports are largely a sign of sector-performance, but little is known about services trade. To date, empirical studies of firm-level trade consists mostly of manufactures, with just a few equivalent studies of services (Love and Mansury 2009). This may be because services trade is intangible making it difficult to measure (Siedschlag et al 2011) and despite the importance of the service sector in many countries, very little is known about determinants of services trade at the firm level. Consequently, much of the analysis is inferred from the literature on trade for manufacturing firms (Vogel 2011).

However, the available research does find similar characteristics between manufacturing and services exporters. Vogel (2011) concludes that exporting firms in the German business services sector are more productive and pay higher wages than their non-exporting counterparts. He does suggest that these exporters may have a harder time with market barriers and the associated fixed costs to export than do manufacturing firms. In a subsequent study of business services in France, Germany and the United Kingdom, Temouri et al (2013) concur that exporters in each country pay higher wages and are more productive but also find self-selection by firms that pay higher wages and are more productive then are more inclined to enter export markets from the UK and France.

In services, Love and Mansury (2009) find some support for a positive, causal relationship between exporting and productivity. Exporting firms may learn from exporting to foreign consumers and competitors which may then bring about performance improvements

more quickly than those firms selling only on the domestic market. However, a cross-country sample does not conclusively show a positive effect from exporting (Wagner 2005, p. 2, 10), perhaps because of the data limitations associated with services trade.

This export-productivity assumption should apply to labor trade, too. Where market forces can better determine the distribution or flow of labor, wages will be higher—offering a greater benefit to those firms which export that skilled labor. With respect to wages and the marginal productivity of skilled workers, Grossman (2004) contends that “the most talented individuals would be led by market forces to undertake those jobs with the greatest social return to talent.” For example, good, skillful Brazilian players leave their domestic league team for more lucrative markets, Damo (2009) explains, because they are often paid lower wages at home due to currency devaluation and economic difficulties. In short, more productive teams can afford to pay higher wages, so they attract better players and they also export more such that the three measures—productivity, wage level, and export level—are closely related.

Although there is little firm-level analysis of services trade and none for that matter, on Mode 4 supply of services there is research at the country-level. For example, Walmsley and Winters (2005) measure the magnitude of Mode 4 barriers—they calculated that increasing the inflows of foreign workers by three percent of the domestic workforce could improve global trade costs by more than \$150 billion as liberalizing labor flows should result in a more efficient allocation of this factor. Genc et al. (2011) summarize a meta-analysis of 48 studies, to conclude that a 10 percent increase in immigrants can increase bilateral trade by up to 1.5 percent. Higher skilled migrants can more effectively improve productivity to trade in that foreign market. Hatigeorgiou (2010) explain that emigrants and immigrants can help to increase trade volumes and Jansen and Piermartini (2009, 740) add that exporters benefit from foreign migrants who

lower transaction costs by assisting with knowledge of external markets and the culture and the language there.

Not only are exporters more productive than their counterparts but the act of exporting may also be beneficial to firms. Lindic (2015) explains one channel through which trade increases firm productivity is by driving a more efficient allocation of its production factors. For example, a team with an excess of good goalkeepers could export one for the best price on foreign markets and use the funds to fill in its gap at forward making both firms better off as they can better specialize. Along those lines, entering export markets increases economies of scale (Melitz and Redding 2012) and firms that export are more likely to survive and see employment growth, although productivity and wages increase more slowly (Bernard and Jensen 1999, 3). In manufacturing, Bernard, Jensen and Lawrence (1995, 71) find that firms that start to export see significant gains in employment and wages while firms that stop exporting fare worse in the short and long term.

Barriers to Mode 4

Whether in manufactures or services, firms need to be more productive if they are to have the means to overcome regulatory and information barriers when accessing foreign markets. Consequently, exporters may self-select into exporting if they are better equipped to absorb additional costs associated with transport, distribution, and marketing requirements that this may incur (Wagner 2005, p. 2-3). In sum, information barriers impose a fixed cost to exporters, which can consist of market research on the foreign market, acquiring knowledge to set up or access new distribution networks in that market, and modifications to product range to appeal to

consumers that market. These additional costs can best be borne by productive firms with low marginal costs (Love and Mansury 2009). This very act of exporting, therefore, signifies that a firm is sufficiently productive to sell into foreign markets.

Even though exporting may be desirable, barriers present an often-insurmountable hurdle. Love and Mansury (2009) summarize that sunk costs of exporting are a frequent explanation for self-selection, whereby only large firms can afford to enter export markets. They add that this should be less relevant to services, for which scale economies are less pertinent. However, in Mode 4 Winters (n.d.) summarize that foreign workers are restricted in almost all countries and that visa regulations frequently limit only those who can provide necessary skills for the local economy. Furthermore, this means that decreasing trade costs will place more emphasis on transport and information costs and the latter may hold greater relevance to services trade. However, little firm-level analysis exists on this topic as Chanda (2001) notes “there are no direct quantitative measures on the movement of natural persons specifically engaged in overseas delivery of services”.

Making the football case

The case of trade in highly-skilled,⁹ professional football players can shed light on how firms operate in Mode 4 while controlling for information costs. Football firms make a useful sectoral case because they act much like firms in other professional services. For example, some teams are listed on stock exchanges¹⁰ and most leagues are highly competitive, with television

⁹ Martin (2006) notes that 70 percent of Mode 4 proposals in the GATS related to highly-skilled workers, such as managers and specialists.

¹⁰ <http://www.therichest.com/sports/-sports/5-football-clubs-listed-on-the-stock-exchange/>

rights amounting to billions of dollars.¹¹ The relegation/promotion systems means that less-productive teams may have to exit the sector in any given year. In addition, Ferguson et al (1991) note that teams work to maximize profit or, as Garcia-del-Barrio, Pedro, and Stefan Szymanski (2009) explain, they also maximize productivity (“wins”) and, like country-sectors in other services, leagues may set labor-market restrictions as well product market restrictions that limit geographic markets or team salary levels. Furthermore, this industry has a broad international presence.

In football and in other services, there are numerous Mode 4 restrictions that can limit exports to more productive firms with the capacity to overcome them. Winters (2009) points to the extensive trade-restrictive regulations affecting worker mobility and Neumayer (2011) quantify that a visa on nationals from one other country can lower bilateral trade by up to 19 percent and FDI by up to 25 percent. In football, the international regulatory body, FIFA, has tried to require that leagues impose quotas on foreign players (Economist 2012) and many leagues have done this or employed import restrictions. In the case of China, the league recently lowered the quota on foreign players to three foreign players per team in response to “irrational” transfer spending on imports in the Super League (AP 2017).

Football has one distinction as information costs for foreign markets are almost uniquely low. Firms can watch almost any potential hire work, whether from a stadium or on television, before making a decision to acquire him.¹² In sum, the football player trade offers a unique opportunity to test this question of temporary exports of highly-skilled labor, as Lawrence (2000)

¹¹ <http://www.forbes.com/sites/bobbymcmahon/2015/02/15/an-apples-to-apples-comparison-of-tv-rights-fees-paid-to-big-european-soccer-leagues/#2076c6333630>

¹² Similarly, online recruiting tools like LinkedIn permit employers to “shorten hiring times through an increase in information flow” as well as lowered recruitment costs that permit hiring both from the local and global market (Broughton et al 2013).

explains, “[t]here is no research setting other than sports where we know the name, face, and life history of every production worker and supervisor in the industry. . . . creating interesting natural experiments that offer opportunities for analysis.” To that end, this paper uses *transfermarkt.com*’s¹³ international global dataset which calculates the market values for football players, as a function of a player’s wage rate, to proxy the marginal productivity of individual workers.

Our data cover 47 countries and information is also pervasive in this sector as market values of labor¹⁴, firms, and country-sectors are publicly available. Ruijg and Ophem (2014) argue that players’ salaries should be closely correlated with their productivity and that they are specifically hired in order to add value to a new team. The salary should then reflect the incremental value provided by the player, although there is risk associated with this. Idson and Oi (1999) counter that salary is an imperfect measure of productivity. However, we argue that football transfers and market values data do a good enough job and go further than the available data from other sectors engaging in the Mode 4 supply.

Case Studies

In football, players move between teams in various ways but are rarely traded for other players. One well-known method to trade a player, therefore, is through transfer fees which are a

¹³ These data are widely used. For example, see: <http://time.com/2826581/world-cup-most-valuable-teams/>; https://www.diw.de/documents/publikationen/73/diw_01.c.357201.de/m36.pdf; <http://cep.lse.ac.uk/pubs/download/dp0948.pdf>

¹⁴ Market value of labor is calculated as a function of future wage earnings of individual players over the life of their contract. This is aggregated to the firm level as a summation of the market values of the individual players and, to the country-sector level, as a summation of the market value of all the firms.

sum of cash paid in exchange for signing a new contract with a player from another team. Ruijg and van Ophem (2015) indicate that the amount of the fee is widely used as a measure of the productivity of individual football players because official wage data is often unavailable. The *transfermarkt.com* dataset also includes estimates of market values of players who move to another team without a recorded transfer fee, such as by going out loan, and the additional observations expand the dataset from 819 transfers, to 3489 transactions.¹⁵ These player-level statistics are also aggregated to compute market values for teams, and entire leagues in order to calculate the market value or productivity as the sum of the market value of the players in the respective group.¹⁶

In making the case that a country's football sector can shed light on its wider services sector, Graph 1 shows the correlation between these two measures through a scatterplot. The x-axis reflects the logged value of the value added of the services sector in each country while the y-axis provides the logged value of the total market value for the football sector, in the dataset. The two measures identify a close, positive relationship between the two. The graph also highlight the merits of selecting China and Germany as country cases.

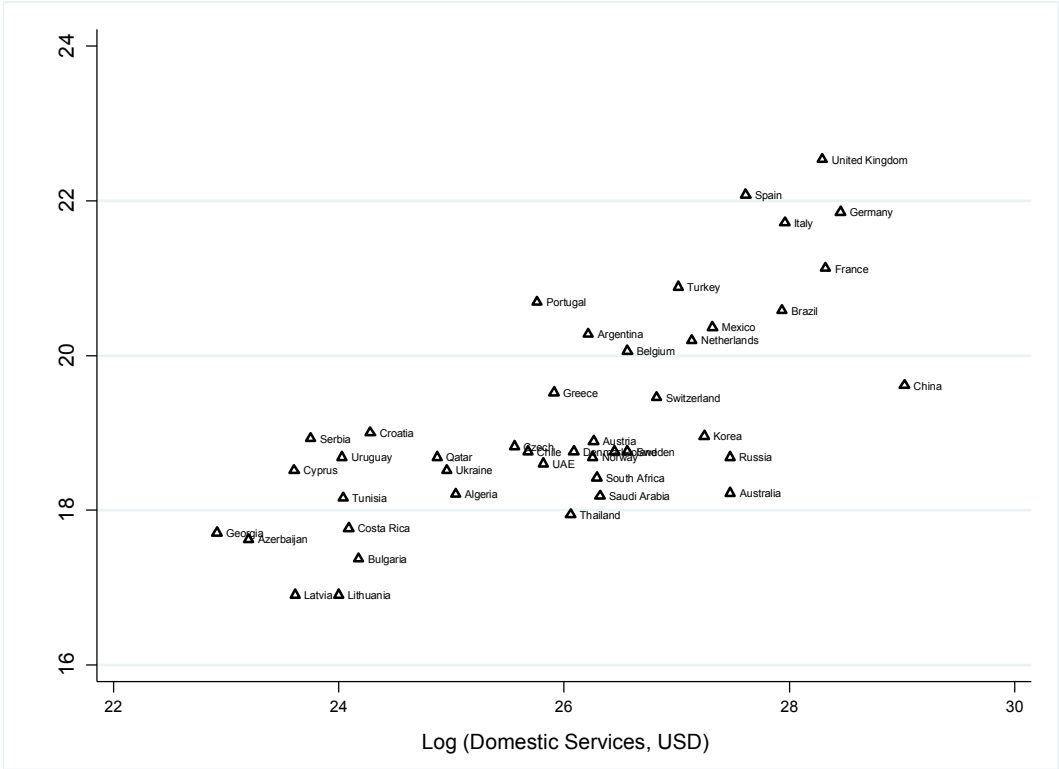
First, Germany is one of the largest sectors on both the x and the y-axes so it offers a case of a useful positive outlier where search costs might be low for those established firms. Germany was selected because its firms are traditionally strong performers and have seen profitably grow in recent years which makes it a useful counterpoint through which to compare the other two cases. Brazil is an important sector to study because its players are widely seen as some of the

¹⁵ As a signal of how well the *transfermarkt.com* data approximate the full number of players who crossed international borders to play on new teams, in 2016, there is a 0.91 Pearson coefficient between these two variables. However, the full number of foreign transactions totaled 4679 that year.

¹⁶ For a discussion of how the football transfer system works, see ECA, "Study on the Transfer System in Europe" (nd).

most skilled in the world. This may explain why Brazil is the largest global supplier of foreign football players even as its domestic league has seen struggles and some analysts anticipate a causal link between these two factors. Finally, China is a positive outlier on the x-axis as it has the largest services sector in this sample but it also rests around the middle of the y-axis. Its football sector is comparatively less developed and less well-known but growing quickly—offering interesting insights into the export capacity of small firms in small leagues.

Graph 1. Services v Football Market Value



Source: Author’s calculations with data from *transfermarkt.com*.

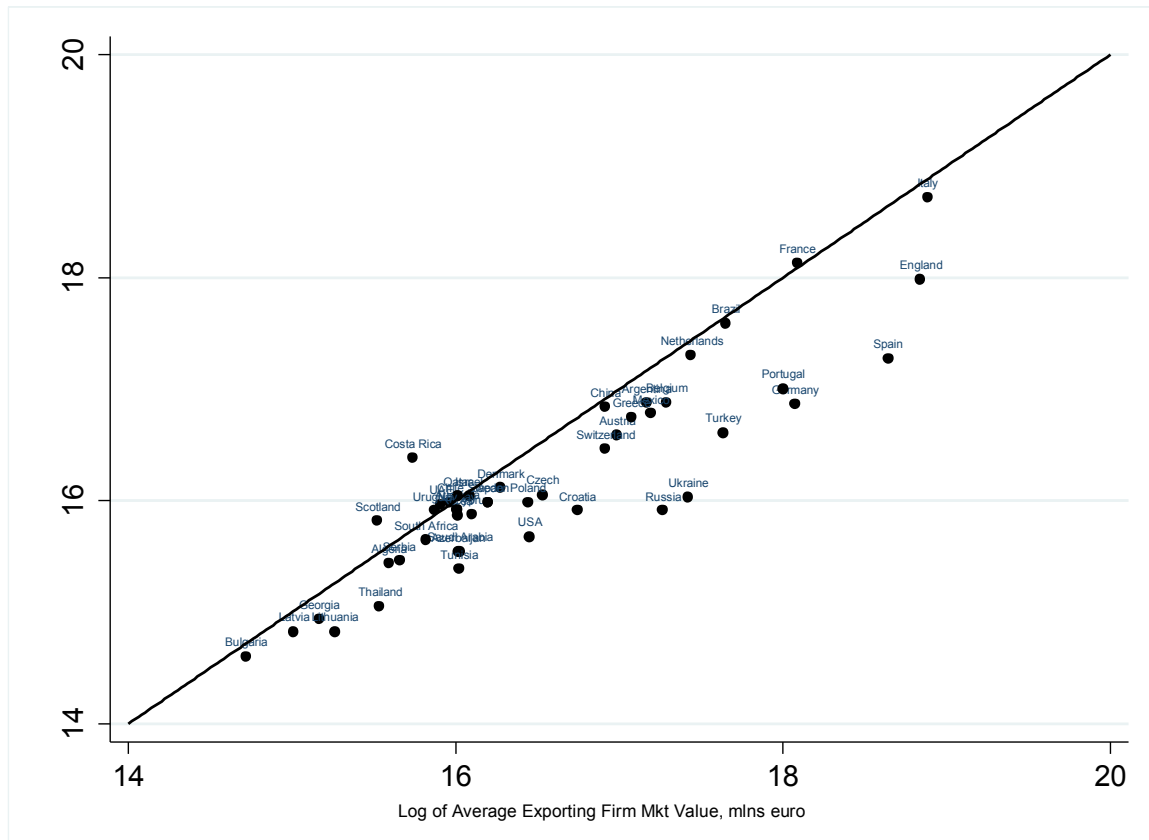
Market Value and Export

Next, we can reach some broad inferences about the representative firm which export, in the dataset, in order to compare these to the empirical findings of manufacturing and services

firms. Graph 2 plots the average market value of the exporting firm on the y-axis, the average size of all firms in the country on the x-axis, along with a diagonal, solid line to represent where the value of the X-axis would equal the value of the Y-axis ($Y=X$). To interpret this line, countries above (below) it indicate their average exporters are larger (smaller) than the average firm.

Most countries are on or close to the $y=x$ line, suggesting that the average exporting firm is about the same size as the average sized firm in each country, by market value, rather than being significantly larger. For example, larger sectors are those higher up on the Y-axis (e.g. Italy, France, Brazil, and the Netherlands) and are also further out to the right on the X-axis such that they sit right on the line. However, a few other large European sectors (e.g. England, Spain, and Turkey) rest below the 45 degree line—such that their average export transaction was conducted by a firm larger than the country-sector average firm which is more fitting of the existing literature. Notably, all of these countries experience wide variation in exporter-firm size so that many are also smaller than the country-sector average which is not the case for empirical studies of manufacturers or services firms, to date.

Graph 2: Market Productivity of Exporting Firms, 2016



Source: Author’s calculations with data from *transfermarkt.com*.

Germany

The rest of this section delves into these country-cases in the data to better understand the firms in the relevant sector, as well as the nature of its exporters. The dataset covers 147 professional football teams in Germany with a total market value of €3.1 billion and an average firm size of €21.1 million--although the size of the average exporter is more than three times that

amount, at €70.5 million.¹⁷ All told, German football teams exported €368 million in transfers to foreign teams in 2016 and those firms that were below the average market value for the league exported 10 percent of the total value—meaning that unlike with manufacturing, smaller firms did export even if they were overshadowed by their larger competitors.

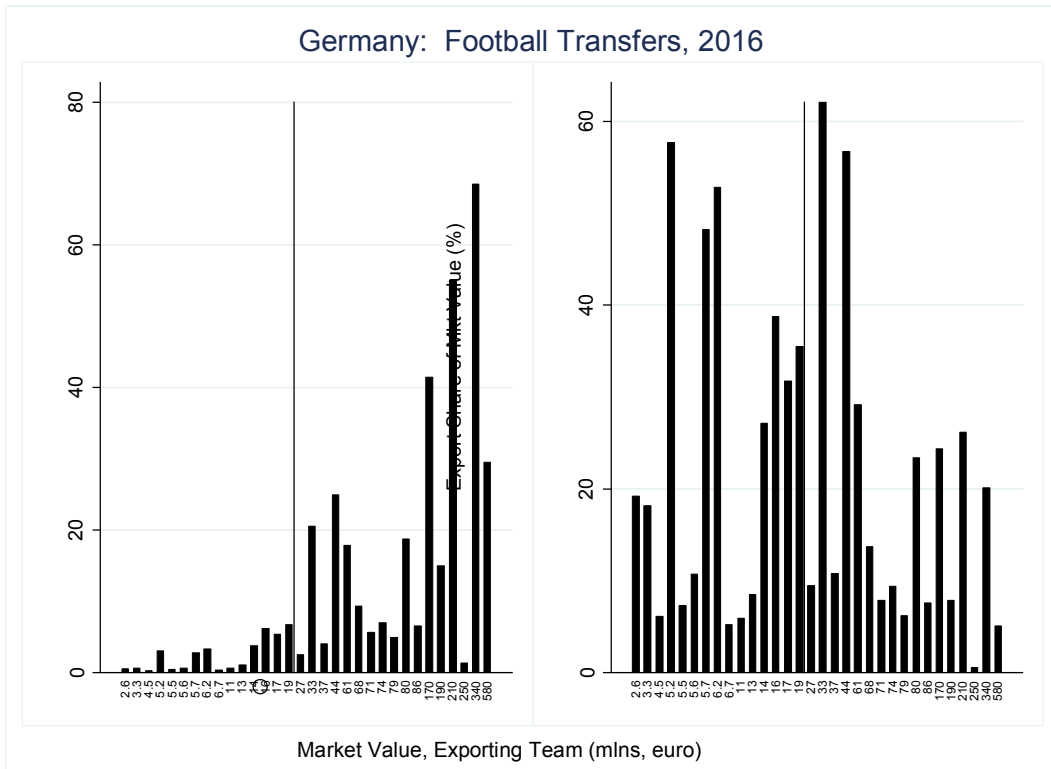
To unpack these findings further, Graph 3 provides a distribution of labor exports, by value of the exporting team in Germany.¹⁸ For example, a team worth €44 million in 2016 exported about €25 million of labor, while a team worth €240 million exported about €70 million. The vertical line that intercepts the X-axis at about €20 million reflects the market value of the average German football team. In the panel on the left, the distribution is strongly left-skewed with high market-value firms (those with the highest wage bill) exporting the most value. While this is illustrative rather than causal, the data fit with the argument that search and labor-regulation costs effects appear to be low for German firms as firms across the sector export a relatively even share of their market value—even small firms engage a large share of their market value.¹⁹

¹⁷ Although transfermarkt.com data only include the market value of the players, McKinsey (2015) estimates that the top two divisions of professional German football grew by 50 percent between the 2007/08 season to the 2013/14 season, expanding to €7.9 billion--a rate faster than the country's GDP growth.

¹⁸ The x axis reflects the market value of the exporting team and the y-axis reflects the total value of exported players, in millions of Euro.

¹⁹ Explain

Graph 3



Source: Author's calculations with data from *transfermarkt.com*.

The scatterplot in Graph 4a and 4b confirms this result, finding almost no correlation between, on the y-axes²⁰:

1. STRI²¹ of the importing country (Graph 4a); or
2. the number of foreign players on an importing team (Graph 4b).

and, on the x-axis:

3. the market value of the exporting team.

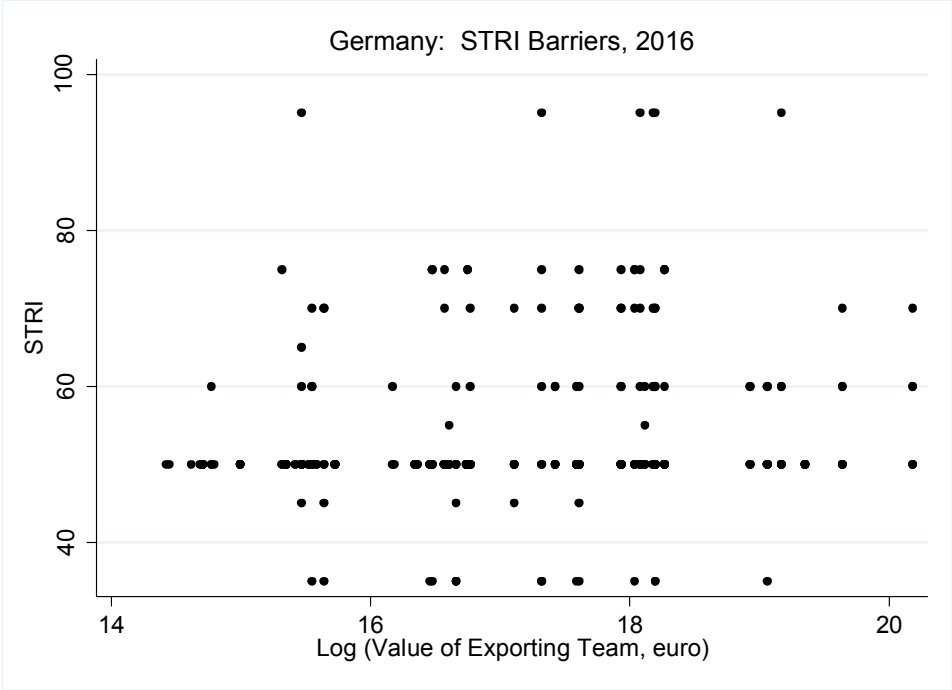
Trade costs and regulating restrictions do not appear to affect the number or value of labor foreign exports. This would fit with the previous finding that firms of average productivity do a

²⁰ Both 1 and 2 are used as a proxy for how open that firm is to foreign trade.

²¹ <http://iresearch.worldbank.org/servicetrade/aboutData.htm>

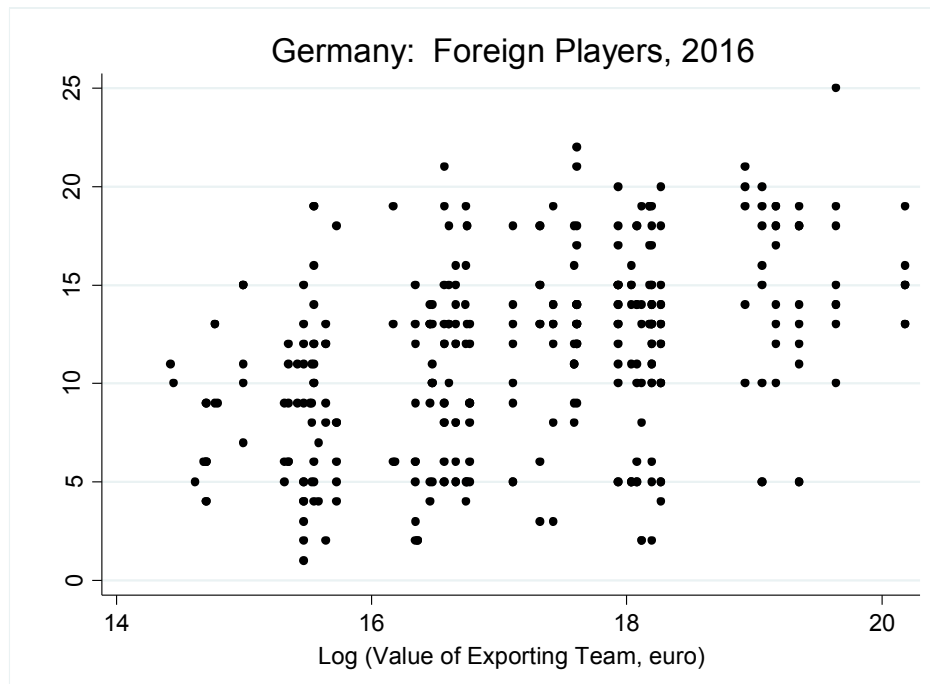
good deal of the trading in this sector, unlike with manufacturing, as fixed costs to trade do not force German football firms from the market.

Graph 4a.



Source: Author’s calculations with data from *transfermarkt.com* and the World Bank.

Graph 4b



Source: Author's calculations with data from *transfermarkt.com*.

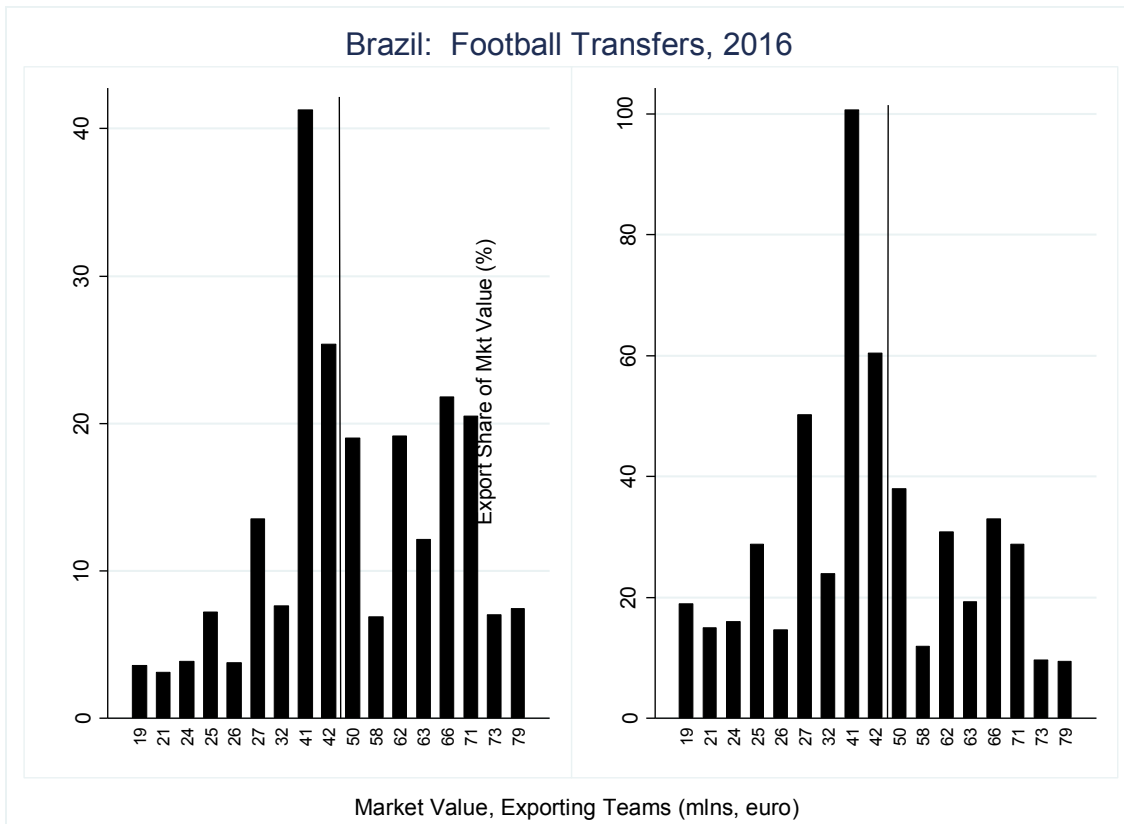
Brazil

According to Magdaleine and Maurer (2008), China and Brazil enjoying high global rankings for “arrivals for business and professional purposes” which suggests. However, these two developing economies may be particularly open to imports of Mode 4 service supply but very little is discussed about the direction of exports from those two countries. This study examines those outflows, starting with Brazilian data which covers just 20 professional teams. They hold a combined market value of €870 million and an average firm size of €43.5 million, and an average exporter size of €46.2 million.

Graph 5 provides the distribution of exports, by value of team in Brazil. As with the previous graph of German firms, the x axis reflects the market value of the exporting team and

the y-axis reflects the total value of exported players, in millions of Euro. For example, a team worth €50 million in 2016 exported €18 million of labor, while a team worth €41 million exported €42 million. The vertical line that intercepts the X-axis at €43 million reflects the market value of the average Brazilian football team. All told, Brazilian football teams exported €223.5 million in transfers to foreign teams in 2016. Those Brazilian firms that were below the average size for the league exported 49 percent of the total value—marking an even starker distinction than German football firms when compared to manufactures. Furthermore, firms at the average level of productivity are the most likely to export but they also export the greatest share of their market value. It is not clear why but not only do small firms export less, large firms also export both less value and a smaller share of their market value.

Graph 5.



Source: Author's calculations with data from *transfermarkt.com*.

At the national team level, Brazil, like Germany, has enjoyed a great deal of success, famously winning five World Cups. Domestically, there is some concern that the country now has the most players working abroad with 1784 players employed in foreign leagues—almost double the number of Argentine players abroad, at 929 (Poli, Ravenel, and Besson 2015). Early (2014) argues that many of those players are considered “unfinished or semi-finished” when they leave as they have just a few years of experience with their Brazilian team before moving abroad. This may have helped to spur the narrative that exporting players has been detrimental to the domestic league. For example, one argument points out that Fluminense had won the domestic title in 1984 but saw six of its players transferred to foreign leagues in 2005. The team suffered in the standings while Corinthians won the league and did not transfer any players (Alvito 2007, 531). Perhaps more notably, ESPN reported that the two best players in the Brazilian league—Diego Tardelli and Ricardo Goulart—left their teams to play in China for Shandong Luneng and Guangzhou Evergrande, respectively, in 2015 (Young 2015).

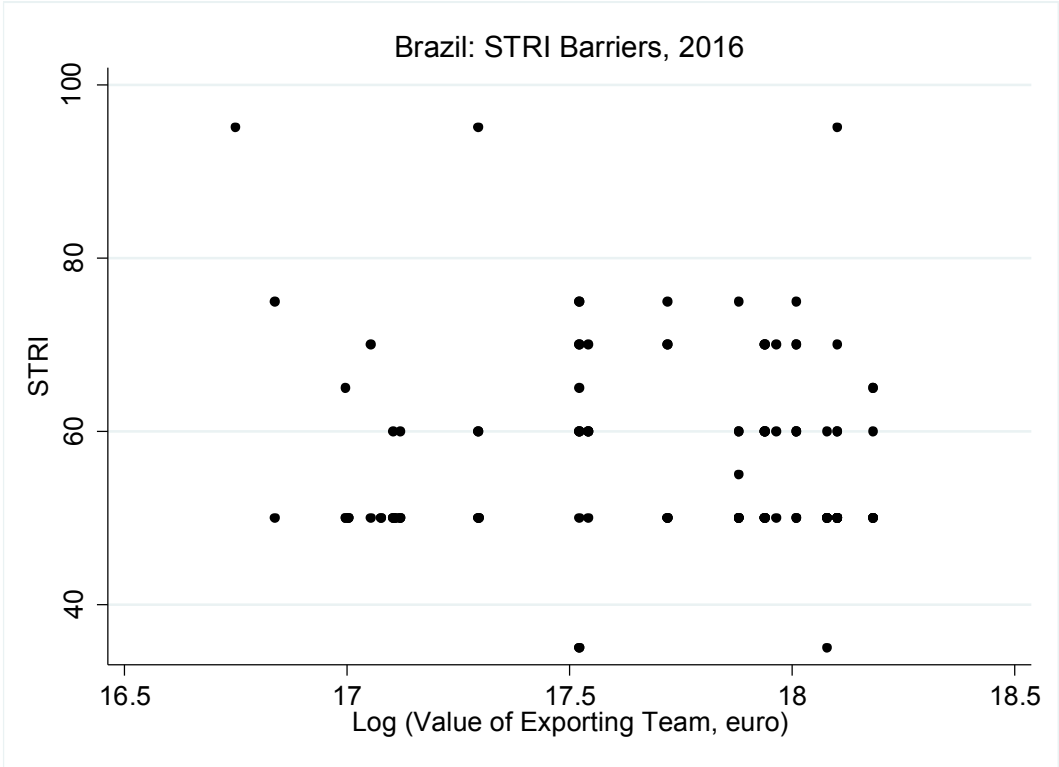
Domestic players have been transferring to foreign leagues in growing numbers, with 132 leaving in 1989, rising to 857 in 2004 (Alvito 2007, 530). However, teams like Internacional and Gremio, in Brazil's top division, now see transfers as their main source of revenue, contributing more than the revenue from television rights even though the press portrays these exports as a loss, much like a football “brain drain” (Rial 2008).²² FIFA (2009) noted that the “most gifted creative player” on the top teams in the league were foreign, clarifying that there 119 foreign players playing in Brazil, a boon attributed to the stronger currency, at that time.

²² Alvito (2007) argues that Brazilian teams may be motivated to export players due to the mounting debt that many clubs have accrued. A transfer could help them balance their budget. Transfer fees can be effective way for teams to raise money and increase their financial competitiveness (Mourao 2016).

Consequently, transfers may not be entirely the cause of any decline. They may even be the one thing working in the league's favor as structural factors come to the fore. In short, the causal relationship between team success and its transfer record is complex. The well-catalogued decline of Brazil's football teams has also been attributed to a combination of a domestic recession, rising unemployment and hyperinflation a few decades ago, along with mismanagement in the domestic league. Seto and Pereira (2012) note that Brazil's football teams are "losing" players because of the declining currency, which means that teams cannot compete with salaries in foreign leagues. Furthermore, Brazil has been exporting football players ever since the World Cup in the 1930s (Rial 2008) although this is a trend that has increased into recent years.

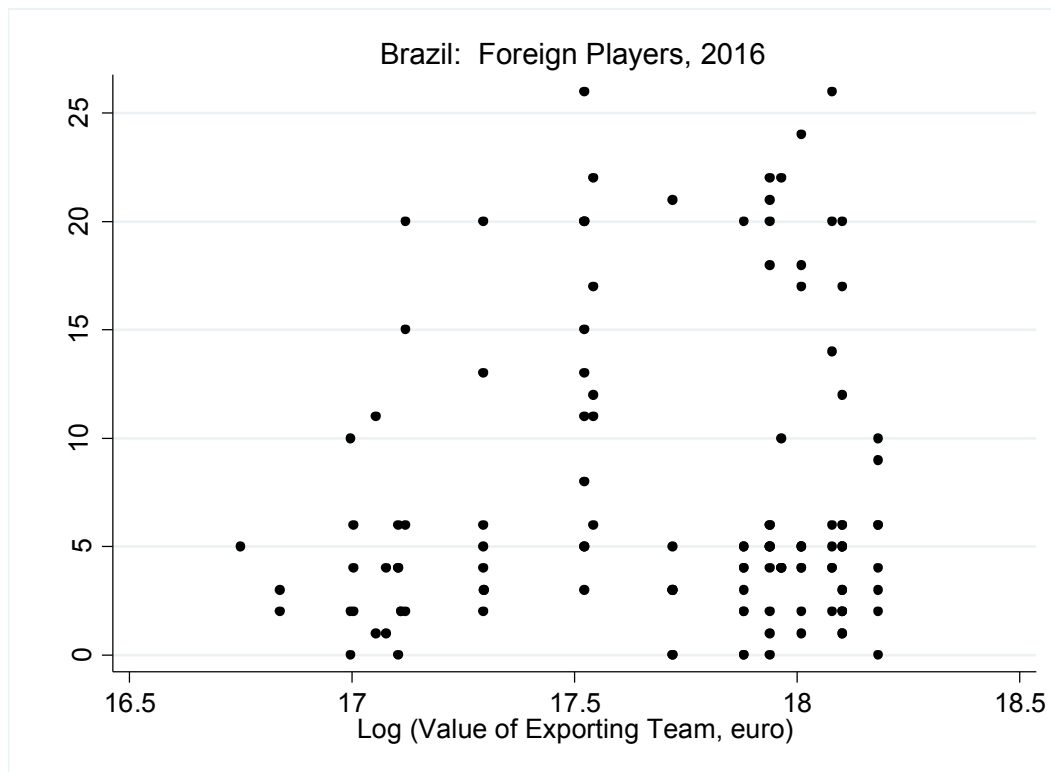
We test the impact of export restrictiveness more broadly with two graphs. As with Germany, Figure 6a looks at the level of legal restrictions affecting the import-side for each foreign player transaction (using the number of foreign players on importing teams) and 6b considers at the actual restrictiveness of the sector for each of those trades (using the number of foreign players on importing teams). It finds that most players are exported to countries that score about a 60, which means somewhere between 1. there are "major restrictions" and 2. professional services are "virtually closed with limited opportunities to enter and operate" in Mode 4. In short, not only are a lot of players departing for more restrictive markets, they are doing so from both small as well as large teams.

Graph 6a.



Source: Author's calculations with data from *transfermarkt.com* and the World Bank.

Graph 6b.



Source: Author's calculations with data from *transfermarkt.com*.

China

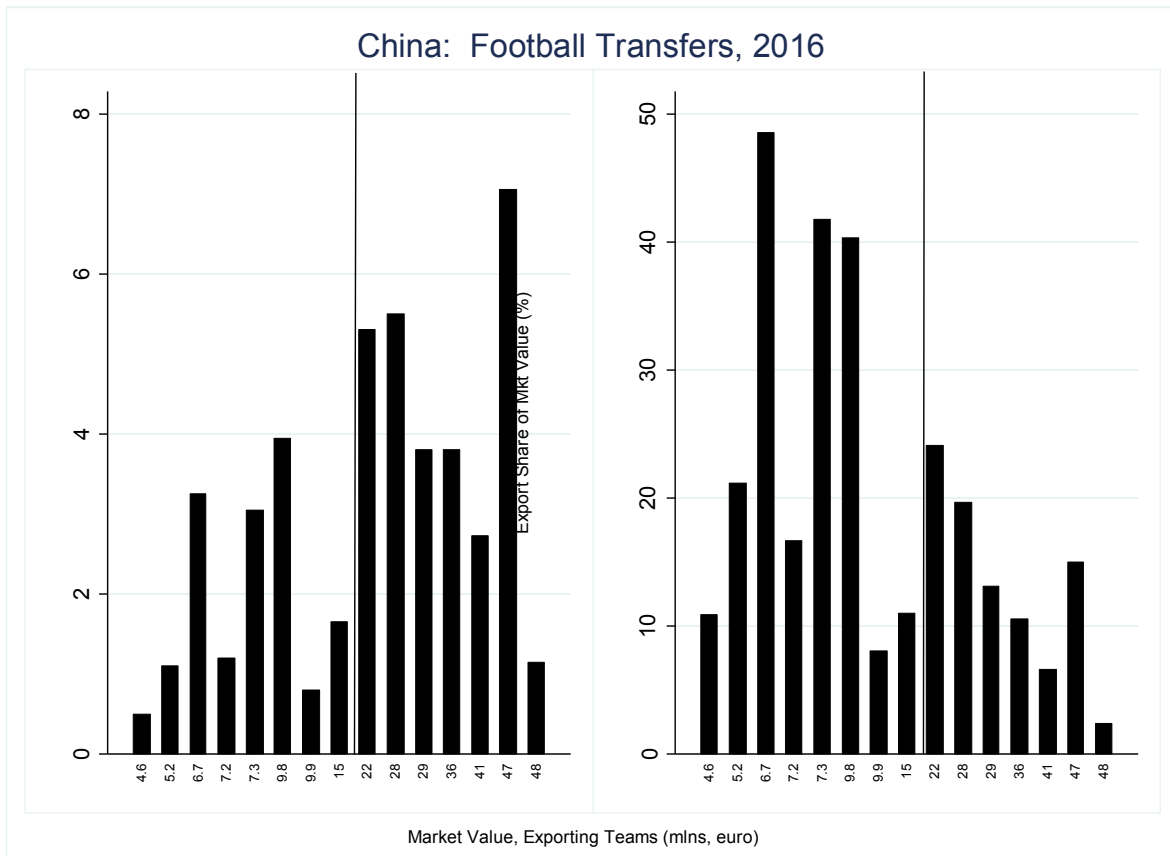
For background, China has 16 teams included in the dataset, with a combined market value of €330 million. The average firm has a market value of €20.6 million while the size of the average exporter is €22.1 million. In addition, China's football league is a timely case as its import of expensive foreign players garner much of the press attention—as it imported \$280 million of foreign players in the January 2016 transfer window, more than any other global league (Bland 2016). However, Chinese teams are also exporting labor to foreign firms, many of them in Brazil. All told, Chinese football teams exported €45 million in transfers to foreign teams in 2016. Graph 7 provides the distribution of those exports, by team value in China and

the vertical line that intercepts the X-axis at about €21 million reflects the market value of the average Chinese football team. The data show that Chinese firms that were below the average size for the league exported 35 percent of the total value.²³ Further, large firms export very little compared to their market value, meaning that they are comparatively less productive. For example, a team worth about €48 million in 2016 exported €1 million of labor, while a team worth €47 million exported €7 million. In addition, there are three firms that export more than 40 percent of their market value which places them on par with Brazil and Germany (which also has three firms and one firm slightly less than that level). In other words, controlling for firm size

Unlike Germany's or Brazil's World Cup success, however, China has only even qualified for one World Cup, in 2002. However, China's top division, the Super League, has been attracting a lot of government attention as President Xi stated a desire for the country to host a World Cup. This may be motivating clubs to increase their imports of talented foreign players (AFP Kuwait 2017). The league is state-run but with plans to commercialize operations (EIU 2009, 18) which have seen some success as Evergrande Real Estate Group purchased Guangzhou Football Club for \$16 million and the hired foreign players and coaches. In 2011, the team paid \$10 million in transfer fees, which they more than doubled in the following year, to \$23.7 million. For example, Guangzhou Evergrande Taobao exported three players in 2016--two of them went to Brazilian teams—while 11 other teams in the CSL also sent at least one player to Brazil. Alibaba later purchased a 50 percent share of the Evergrande team for \$192 million, changing the team name to Guangzhou Evergrande Taobao (Yaojuan n.d., 11-2).

²³ The x axis reflects the market value of the exporting team and the y-axis reflects the total value of exported players, in millions of Euro.

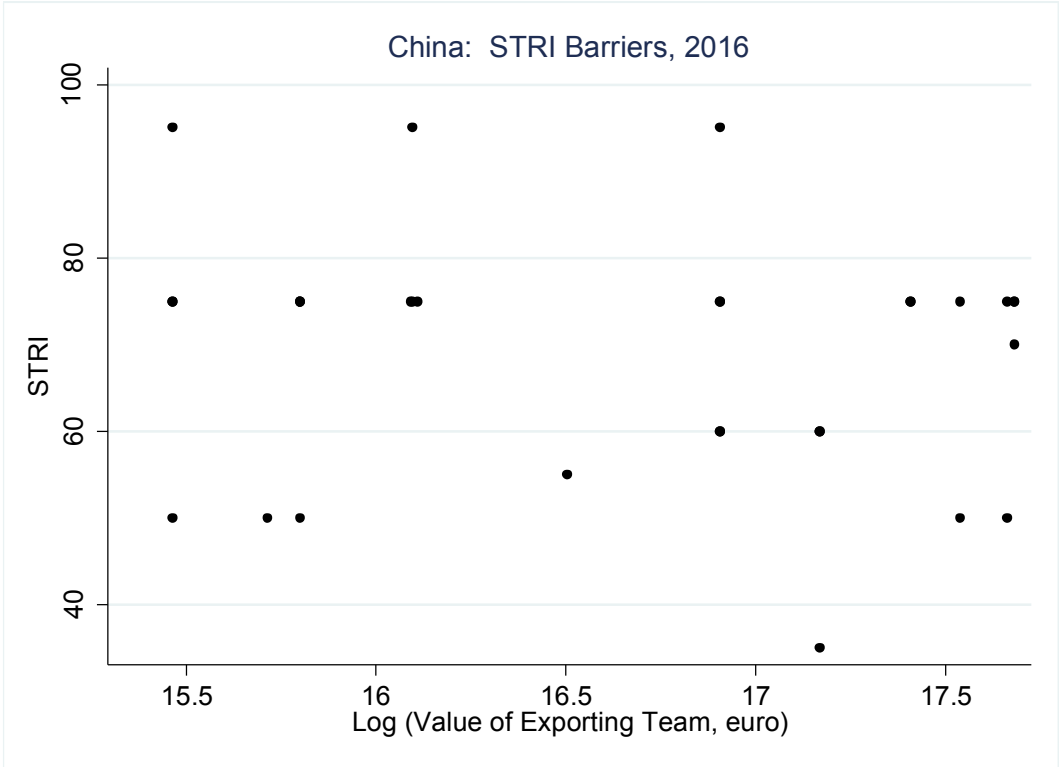
Graph 7.



Source: Author’s calculations with data from *transfermarkt.com*.

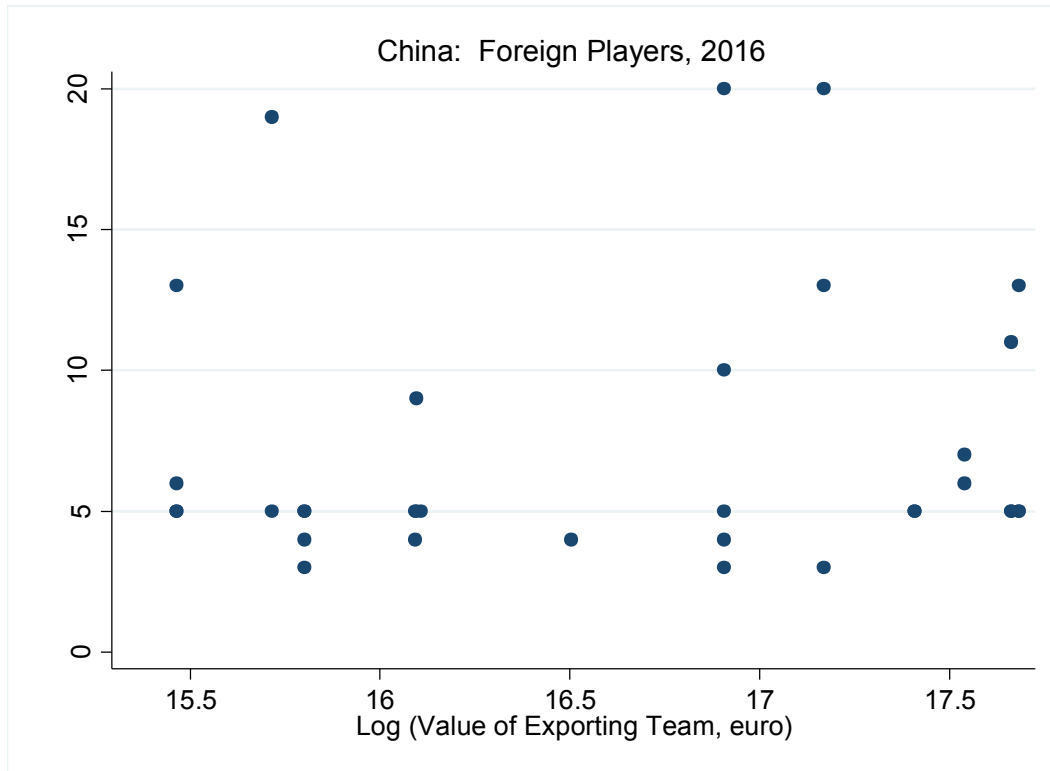
Furthermore, China’s transfer market is subject to strict regulations and only 5 foreign players are permitted on a team (EIU 2009), a number that was reduced to three players in 2017 (BBC 2017). On the export side, Chinese firms—small and large—are exporting to countries with high STRI scores on Mode 4 (see Graph 8a), as well as teams with few foreign players (see Graph 8b). This suggests that despite the league’s less established profile on global markets, firms of all sizes are overcoming regulatory and information asymmetry barriers to export from China.

Graph 8a



Source: Author's calculations with data from *transfermarkt.com* and the World Bank.

Graph 8b



Source: Author's calculations with data from *transfermarkt.com*.

Conclusion

Compared to the empirical conclusions for manufacturing and services, more generally, those firms that engage in Mode 4 export of football services are small. When firms export they have access to a larger market than if they just sold to the domestic market which can promote their productivity and market value. In Brazil, almost half of football exports in 2016 were conducted by firms that were less than half the average firm size in terms of market value while in China, firms that are below average in market value seem to export a greater share of their market value than larger firms. By contrast, Germany's larger firms export considerably more,

in value terms, but controlling for market value evens out the distribution. All told, exports are not a rare event for small firms, whether in China's small sector, Brazil's well-known leagues, or Germany's more established sector.

The comparative success of small firms to export suggests that they are managing to overcome foreign barriers and information asymmetries that would preclude smaller manufacturers and other service providers. In each of the countries in this analysis, players are being exported to teams that have few foreign players and into countries with sizable import restrictions on Mode 4. This signals that these barriers can be mitigated in some way, allowing a wider array of firms to export and raising overall sector productivity.

These are several possible explanations for why football firms diverge from goods trade as this is a sector and industry that is less susceptible to information asymmetry challenge or foreign trade transaction costs. For example, 80,000 spectators can watch football workers live on any given Saturday and if one of those workers reveals a distinguishing skillset—that individual can have their contract bought, with the trade transaction cost amounting to little more than the price of an airplane ticket to the new team. Furthermore, there are troves of performance data that track and assess a player's abilities. This research may hold applicability to other sectors than football as firms increasingly face regulatory barriers when they look to foreign sources of talent while websites like LinkedIn and Facebook provide ever more detailed information about the individual skillsets that may help to mitigate the impact of those restrictions.

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