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Firm Level Analysis of Trade Restrictions in the Retail Services Industry

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Abstract

This paper examines competition in the retail services industry using data from the OECD's Services Trade Restrictiveness Index (STRI) and Bureau van Dijk's Orbis database. It is part of an ongoing series in the Services Division of the Office of Industries examining firm profitability and barriers to entry in the services sector. The paper begins with an overview of the retail services industry, and describes industry structure, regulation, and competition. It then discusses how trade restrictions in the retail services industry affect international competitiveness and the profitability of firms that provide retail services. The paper provides a quantitative analysis of the relationship between these factors using the OECD STRI indicators for distribution services as a proxy for retail services, and Orbis-generated firm-level financial data for retail firms. The analysis suggests that certain types of restrictions in the retail sector lead to less competition and higher profitability among retail service firms, while other types of restrictions are associated with lower profitability, likely by raising firms' costs. The paper concludes with recommendations for future areas of research.

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Introduction

This paper examines competition and profitability in the retail services sector using data from Bureau van Dijk's Orbis, a commercial database containing financial information on firms from a large sample of countries, and the OECD's Service Trade Restrictiveness Index (STRI), which categorizes and indexes barriers to services trade by country and industry. This paper follows a series of previous USITC research papers[1] that have focused on barriers to entry for services industries. The series includes econometric analysis of the effects of non-tariff measures (NTMs) on banking, insurance, telecommunications, and port services. In port services, for example, it was found that NTMs, as measured by the OECD STRI, have a negative impact on the profitability of cargo-handling firms. Cargo-handling firms in countries with higher levels of NTMs are significantly more profitable than cargo-handling firms in countries with lower levels of NTMs. The findings suggest that trade barriers inhibit market competition by impeding the entry of foreign services providers, which may lead to higher profitability among existing domestic

[1] Khachaturian, "Services Trade Restrictions and Company Profits: Telecommunications," USITC, Office of Industries, 2015; Khachaturian and Oliver "Firm Level Analysis of Services Trade Restrictions in the Life Insurance Industry," USITC, Office of Industries, 2016; Oliver, "Do Non-Tariff Measures Make Domestic Firms More Profitable? Evidence from the Commercial Banking Sector," USITC, Office of Industries, December 2017; Chambers and Peterson. "Firm Level Analysis of Trade Restrictions in the Maritime Port Services Industry." USITC, Office of Industries, July 2019.

firms. Conversely, domestic firms may experience lower profitability when competition from foreign firms increases with the removal of trade restrictions. This paper extends previous analysis on selected services to the retail services sector by examining the relationship between retail services trade policies and firm-level profitability for foreign and domestic suppliers. The paper uses a panel of data for 48 countries from 2014–2019 (prior to the COVID-19 pandemic, which substantially disrupted the global retail industry beginning in 2020). The analysis suggests that an increase in the level of restrictions to foreign entry in the retail sector increases profitability among existing retail firms, particularly large domestic firms.

Overview of the Retail Services Industry

Retailers link producers and consumers and are the final stage in the merchandise distribution process.[2] In addition to merchandise costs, the retail price that consumers pay also includes associated distribution services such as transportation, warehousing, real estate costs, and other activities. Retailers operate via physical "brick-and-mortar" stores and/or increasingly through multiple non-store channels, such as business-to-consumer (B2C) e-commerce.[3] Increasingly retailers, particularly larger firms, provide multichannel retail services that combine in-store and online services to meet their digitized consumer's expectations.[4]

For this study we use firm-level data from 2014–19. As the COVID-19 pandemic significantly disrupted global retail trade and supply chains, with variation at the country-level due to differing infection rates and government responses (including lockdowns), we chose to end our analysis in 2019 (the World Health Organization declared COVID-19 a global pandemic in March 2020).[5] In the United States, for example, the pandemic's impact substantially weakened revenues of certain types of retailers such as mall-based department stores, but boosted revenues for others, such as big box retailers (e.g., Walmart and Home Depot), grocery stores, and especially e-commerce-based retailers such as Amazon.[6] Thus, in this paper we use data prior to 2020 to avoid the disruptive and uneven effects of the pandemic on firm profitability. The following discussion of industry statistics therefore focuses on the latest year of our sample (2019) but provides more current data where applicable to provide context and illustrate industry trends.[7]

Retail services account for a substantial share of output and employment in most countries.[8] For example, U.S. retail services revenues totaled $5.5 trillion in 2019, accounting for 26 percent of total U.S. GDP, and employment totaled 17.7 million, accounting for 11 percent of total U.S. employment.[9] Globally, retail sales totaled $25.0 trillion in 2019 or about 28.5 percent of world GDP; in 2021 (using the latest available full-year data), global retail revenues reached $26.0 trillion, roughly 27.1 percent of

[2] Retailers generally sell merchandise that has not been transformed (i.e., the retailer does not manufacture the merchandise) to the general public for personal use, but some retailers sell to non-household purchasers (businesses, government, and others). U.S. Census Bureau, North American Classification System, "2022 NAICS Definition," Retail Trade, Sector 44-45, accessed February 12, 2020.

[3] U.S. Census Bureau, North American Classification System, "2017 NAICS Definition," Retail Trade, Sector 44-45, accessed March 15, 2019; USITC, *Recent Trends in U.S. Services Trade, Annual Report 2019*, 2019.

[4] National Retail Federation, "Modern Retailers Are Meeting Multichannel Consumer Demands," March 11, 2019.

[5] Cucinotta and Vanelli, "WHO Declares COVID-19 a Pandemic," March 19, 2020.

[6] Deloitte, "2021 Retail Industry Outlook," 2021. This phenomenon occurred in many countries as the pandemic spread across the globe and particularly negatively impacted non-food consumer goods retailers resulting in the shuttering of thousands of retailers globally. Statista, "Coronavirus: Impact on the Retail Industry Worldwide - Statistics & Facts," December 10, 2021.

[7] The sample includes all firms listed as active in the Statistical Classification of Economic Activities in the European Community (NACE) 47 (Retail trade, except for motor vehicles and motorcycles) that have EBITDA data available for any year during 2014–19 for a total of 40,839 observations across 48 markets and 5 years.

[8] USITC, *Recent Trends in U.S. Services Trade, Annual Report 2019*, 2019.

[9] Author's calculation; IBISWorld, "Retail Trade in the U.S.," March 2021, 16. GDP share is calculated using data from the World Bank, "Gross Domestic Product (GDP)," DataBank: World Development Indicators (WDI) database, accessed July 5, 2022; employment share is calculated using data from Statista. In 2020, as a result of COVID-19, retail revenues fell to $4.9 trillion.

GDP.[10] Online sales (e-commerce) has accounted for an increasing share of global retail revenue in recent years and spiked at the beginning of the global pandemic rising from an estimated 13.8 percent of total retail sales in 2019 to nearly 18 percent in 2020.[11] Nonetheless, e-commerce still accounted for less than 20 percent of total global retail revenues in 2021 and its rate of growth as a share of global retail revenue (which increased substantially during 2020–21), is now slowing.[12]

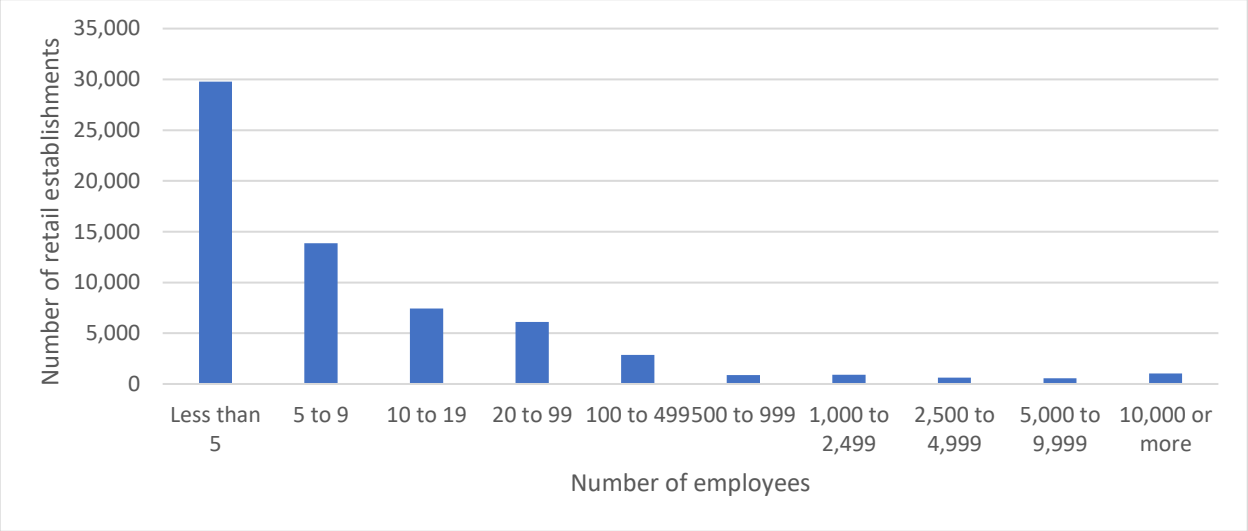
In this analysis we are not able to separate e-commerce from other forms of retail services primarily because the Orbis database does not reliably indicate whether a firm engages in e-commerce. Moreover, although the OECD STRI includes measures that specifically impact e-commerce, their overall weight in distribution (retail) services index is small. As a result, the overall STRI for distribution services likely captures the effects of NTMs on both traditional and e-commerce retailers, although specific restrictions on cross-border e-commerce may become more important as the e-commerce sector grows.[13] In addition, retailers (particularly that operate globally) increasingly serve customers both through traditional and online channels (often called omni-channel retail). However, these online channels still typically require a firm to have a physical presence in a given market (rather than serving that market entirely cross-border).

Most global retailers can be considered small firms, as measured by the number of employees. Although small firms predominate in most countries, the global retail industry is also characterized by a relatively small number of very large firms that hold significant market shares in their domestic markets, particularly in developed countries, while developing countries have relatively large numbers of very small firms, particularly in the informal sector. Large firms are also more likely to conduct operations internationally, including through affiliates operating in foreign markets.[14] While comprehensive data on the global distribution of retail firms is not readily available, the Orbis data used in this paper offers a particular window into the size of retail firms across countries (more information about firms included in the Orbis database can be found in the data section below).[15] For example, very small firms (those with

[10]Authors calculations: For 2019, based on Lipsman, "Global Ecommerce 2019," June 27, 2019; and World Bank, "Gross Domestic Product (GDP)," DataBank: World Development Indicators database, accessed July 5, 2022. For 2020, Statista, "Total Retail Sales Worldwide, 2020 to 2025," February 2022; and World Bank WDI database.
[11] Coppola, "E-commerce as Percentage of Total Retail Sales Worldwide from 2015 to 2025," February 3, 2022.
[12] The growth rate for e-commerce slowed in 2021 while other retail sales rebounded. Coppola, "E-commerce as Percentage of Total Retail Sales Worldwide from 2015 to 2025," February 3, 2022; Young, "US ecommerce grows 14.2% in 2021," February 18, 2022.
[13] The STRI for retail services contains one question about restrictions on e-commerce (regarding whether there are restrictions against foreign distributors providing direct selling services, including e-commerce), though its weight in the total score is small. The OECD also maintains a separate index (the Digital STRI) which contains more detailed measures of restrictions on e-commerce, but its other measures are not specific to the retail sector. For more information see OECD, Digital Services Trade Restrictiveness Index Simulator, https://sim.oecd.org/Default.ashx?lang=En&ds=DGSTRI.
[14] Marcotte, "A look at the 2022 Top 50 Global Retailers," March 23, 2022; McGurr, "The largest retail firms: A comparison of Asia-, Europe- and US-based retailers," March 2002; Corstjens and Lal, "Retail Doesn't Cross Borders: Here's Why and What to Do About It," April 2012; Siele, "The Informal Retailers Driving Africa's Economy," July 13, 2022.
[15] Orbis reports official company financial data which varies according to country-specific reporting requirements. As such, it likely does not capture informal retail firms. Reporting requirements vary by country; regulations in the United States and many other countries only require public financial disclosures for firms which are listed on stock markets, while some European countries require financial disclosures for both private and public firms.

5 or fewer employees) predominate in the sample used in this paper (figure 1). Small firms (defined as having 250 employees or fewer[16]) also have much lower average revenue ($5 million per year compared to $879 million for large firms).[17] There is a substantial amount of variation in revenue and other financial measurements for large firms in the sample, driven by a few extremely large retail firms which operate in multiple markets. For example, the largest 250 firms (by employment) in the sample accounted for $3 trillion in revenue in 2019. Similarly, the EBITDA margin (a measure of profitability) for small firms in the sample was 6.4, while the EBITDA margin for large firms was substantially higher at 10.1, indicating that larger firms are generally more profitable than smaller firms.[18]

Figure 1 Number of global retail establishments in Orbis sample by employee number, 2014–19



Source: Authors calculations based on data from Bureau van Dijk, Orbis Database, accessed June 26, 2020.
Note: the sample contains 40,839 observations across 48 markets and 5 years. The sample is discussed in more detail in the data section below.

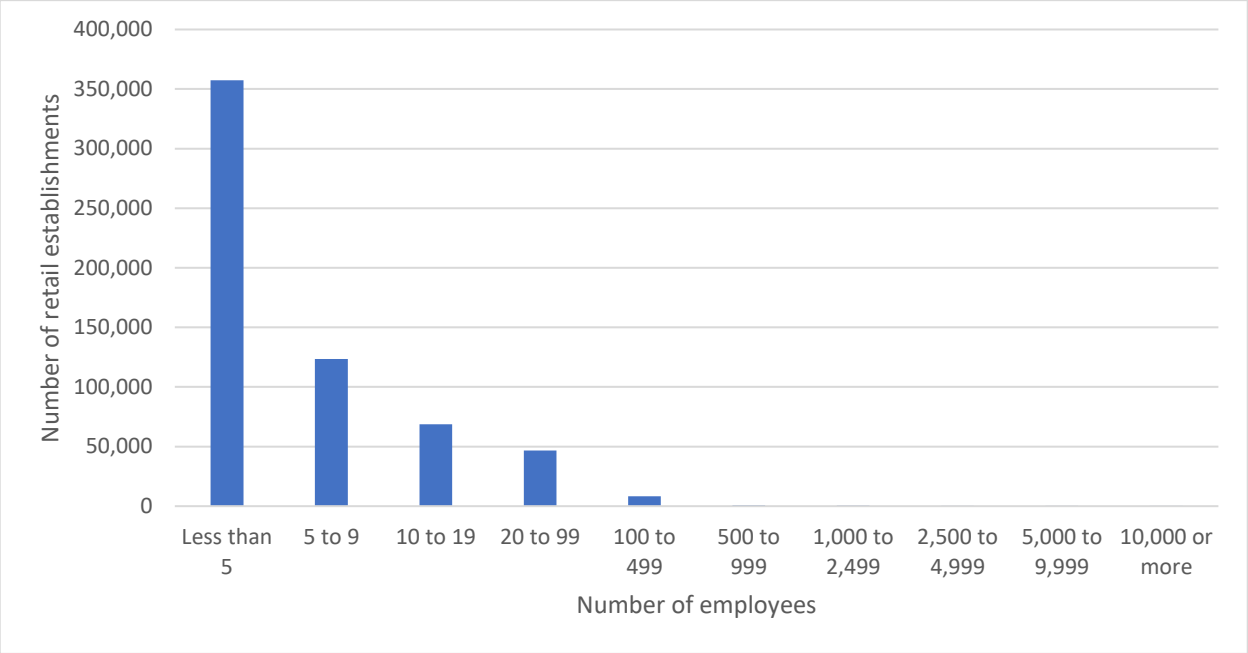
Most retailers, including the largest global retailers, derive the majority of their revenues from their domestic markets.[19] As a result, the industry is not concentrated at the global level.[20] The combined revenue of the leading 25 global retailers was $2.5 trillion in 2020, which accounted for over 10 percent of total global retail revenues. Among the largest global retailers, roughly 23 percent of revenues (on

[16] The U.S. Small Business Administration (SBA) defines small businesses in the retail sector primarily by revenue, however for similar sectors such as wholesalers the most common number of employees used to classify a business as "small" was 250. An article from the U.S. Census Department also notes that 250 employees is a useful cutoff for capturing the majority of U.S. small businesses. As more firms in the sample reported employment than revenue, and the revenue of "small" firms may vary across countries due to differences in purchasing power parity, the number of employees was the preferred measurement of firm size. U.S. SBA, "Table of Size Standards," May 2, 2022; USDOC, Census Bureau, "What is a Small Firm?" January 19, 2021.
[17] Authors calculations based on data from Bureau van Dijk, Orbis Database, accessed June 26, 2020.
[18] EBITDA measures a firm's earnings before interest, tax, depreciation, and amortization, while the EBITDA margin calculates the ratio of EBITDA to revenue.
[19] National Retail Federation, "2021 Top 50 Global Retailers," accessed May 22, 2022.
[20] IBISWorld, Retail Trade in the U.S., March 2021, 8.

average) were earned outside their home markets in 2019.[21] Of this group, European retailers not only had the largest share of revenues from foreign operations but also operated in the largest number of countries.[22] In 2019, the largest U.S. retailers also derived significant shares of revenue from foreign operations, including Walmart (24 percent), Costco (27 percent), and Amazon (37 percent).[23] In the sample used in this paper, firms' size and profitability also varied by ownership. Foreign owned firms had a smaller average number of employees (691 employees compared to 1,992 for domestic-owned firms) and lower average revenue ($133 million compared to $498 million for domestic-owned firms) but slightly higher profitability (an EBITDA margin of 7.75 compared to 7.45 for domestic-owned firms).[24] Across all countries and years in the sample, 47.5 percent of firms were foreign owned.[25] It should be noted that these statistics are affected by the distribution of retail firms in the Orbis sample, which may not be representative of all retail firms operating across the globe. The Orbis sample is somewhat skewed towards publicly-traded firms (due to country-level reporting requirements) and the countries covered in the Orbis database (only one country in Africa compared to 26 in Europe) as well as the inclusion of a few very large firms (for example, Walmart has 1.6 million employees in the United States alone and 2.3 million across all countries where it operates).[26] However, in light of these caveats, we believe the sample is representative of the retail sector in developed countries. Data on the distribution of firms by employment in the U.S. retail services industry from a separate source show a similar pattern as the Orbis sample used in this paper (figure 2).[27] Firms with 5 or fewer employees accounted for nearly 60 percent of firms by number (compared to 47 percent in the total Orbis sample), while retailers with 9 or fewer employers accounted for over three quarters of U.S. retailers in 2019 (compared with 69 percent in the total Orbis sample).

[21] National Retail Federation, "Top 50 Global Retailers 2019," accessed May 22, 2022. In the sample used in this paper, the top 25 firms accounted for $2.3 trillion in revenue in 2019.
[22] National Retail Federation, "Top 50 Global Retailers 2019," accessed May 22, 2022.
[23] National Retail Federation, "Top 50 Global Retailers 2019," accessed May 22, 2022.
[24] Foreign-owned firms are those owned by a global ultimate owner outside of the country where the firm is located. Authors calculations based on data from Bureau van Dijk, Orbis Database, accessed June 26, 2020.
[25] See appendix table A.1 for the distribution of firm size and ownership by country. The relatively high percentage of foreign-owned firms in the sample is potentially attributable to reporting requirements in certain countries, such as the United States, where only publicly traded firms are required to report data which is captured by Orbis. While foreign-owned firms in the sample are more likely to be large firms, the presence of a number of foreign-owned small firms could indicate the presence of smaller foreign affiliates operating in niche retail markets. For example, Japanese clothing retailer Muji operates a small number of outlets in several countries outside of Asia, including 1 store each in Ireland, Sweden, Poland, Portugal, Oman, and Switzerland. Muji, Store Locator, https://www.muji.com/storelocator/.
[26] Walmart, About, accessed October 21, 2022; Bureau van Dijk, Orbis Database, accessed June 26, 2020.
[27] IBISWorld, Retail Trade in the U.S., March 2021, 30.

Figure 2 Number of U.S. retail establishments by employee number, 2019



Source: Statista Research Department, "Forecast of Firms in the Retail Industry U.S. 2019-2026," February 26, 2021.

Literature Review

Recent papers focusing on the relationship between services trade barriers and firm profitability have used a single stage estimation method to assess the effects of NTMs on services trade in several industries (for example, Khachaturian and Oliver (2016), Oliver (2017), and Chambers and Peterson (2019)). Reisman and Vu (2012), Khachaturian and Oliver (2016), and Oliver (2017) provide overviews of the evolution of this methodology.[28]

Several papers have examined the effects of NTMs on firm profitability in the retail sector specifically, and much of the early literature found that NTMs, measured broadly, do not increase firm profit margins. Kalirajan (2000) created an index of trade restrictiveness for distribution services for 38 countries and using a two-stage model found that trade restrictions had a negative and significant effect on the price-cost margins of distribution firms (primarily by raising costs for distributors).[29] Conway and Nicoletti (2006) developed an indicator of regulatory restrictiveness for several sectors (including retail) and found that the retail sector is subject to numerous regulations that weaken competitive pressures, though they did not test this econometrically. Similarly, Dihel and Shephard (2007) developed an index of restrictiveness for five sectors (including distribution services) in 19 countries and used a two-stage econometric model to estimate tax equivalents by mode of supply in each sector, concluding that trade

[28] Khachaturian, "Services Trade Restrictions and Company Profits: Telecommunications," USITC, Office of Industries, 2015; Khachaturian and Oliver "Firm Level Analysis of Services Trade Restrictions in the Life Insurance Industry," USITC, Office of Industries, 2016; Oliver, "Do Non-Tariff Measures Make Domestic Firms More Profitable? Evidence from the Commercial Banking Sector," USITC, Office of Industries, December 2017.
[29] Kalirajan, "Restrictions on Trade in Distribution Services," 2000.

barriers in the aggregate in distribution services have cost-increasing effects.[30] Fontagné and Mitaritonna (2009) focused on both distribution and telecom services in 11 emerging markets using a trade restrictiveness index and found that increased restrictiveness had a negative impact on firms' price-cost margins in distribution, "suggesting that the cost-enhancing effect of the regulations dominate the anti-competitive advantages to incumbent firms."[31] Reisman and Vu (2012) developed an index of restrictiveness for the retail sector in 75 countries and using a gravity model found that increased restrictiveness on multinational retailers' foreign affiliates was associated with decreased affiliate sales. Descriptions of other work on measuring restrictions on trade and foreign investment in the distribution sector can be found in Golub (2009) and Borchert, Gootiiz, and Mattoo (2012).

Subsequent work made use of the OECD's STRI (first published in 2014). Nordås and Rouzet (2015) used both a gravity model and cross-sectional regressions to find that services trade restrictions were negatively associated with both imports and exports of distribution services, along with higher import prices for clothing and electronics.[32] Rouzet and Spinelli (2016) also examined the impact of the OECD's STRI on services trade in distribution services, among other sectors, using a single stage econometric model.[33] The paper finds that for distribution services (which includes both wholesale and retail services), the aggregate STRI score is not associated with increased profit margins. However, they also find that STRI sub-indicators for restrictions on foreign entry are positively associated with profit margins ("presumably by limiting competition"), while the sub-indicator for regulatory transparency is negatively associated with profit margins.[34]

This paper builds on the work of Rouzet and Spinelli by focusing on restrictions on foreign entry in the retail sector. In addition, this paper leverages newly available STRI data to construct a panel of retail firms across 48 countries over 5 years. In particular, the analysis is designed to evaluate differences in firm characteristics, specifically the difference between the performance of small firms (which feature heavily in the retail sector, in contrast to other sectors such as telecommunications and banking) and larger firms. Following Rouzet and Spinelli as well as other work cited above, this paper also separates the impact of NTMs on foreign- and domestic-owned firms.

[30] However, they are unable to conclude that trade barriers specific to foreign-affiliate sales have cost-increasing effects. Dihel and Shephard, "Modal Estimates of Services Barriers," 2007.
[31] Fontagné and Mitaritonna, "Assessing Barriers to Trade in the Distribution and Telecom Sectors in Emerging Countries," 2009.
[32] Nordås and Rouzet, "The Impact of Services Trade Restrictiveness on Trade Flows: First Estimates," 2015.
[33] This model also used financial data gathered from Orbis, taking the average EBITDA margin from 2012-2014 as the dependent variable.
[34] Rouzet and Spinelli, "Services Trade Restrictiveness, Mark-Ups and Competition," 2016, 9, 43.

Data

To measure profitability and productivity at the firm level in the retail sector, this paper uses data for 2014–19 from Bureau van Dijk's Orbis database.[35] The sample includes all firms listed as active in the Statistical Classification of Economic Activities in the European Community (NACE) 47 (Retail trade, except for motor vehicles and motorcycles) that have EBITDA data available for any year during 2014–19 for a total of 40,839 observations across 48 markets and 5 years.[36] Orbis reports official company financial data that is not restricted by country; however, the availability of such information varies across countries according to country-specific reporting requirements.[37] For example, U.S. regulations do not require privately held companies to report financial information, while regulations in many European countries do. Therefore, Orbis may have more detailed information on private companies for firms located in Europe than for firms in the United States. Due to the prevalence of small firms in the retail sector, this leads to a larger number of firms in the sample for European countries than other countries. Countries with more comprehensive reporting requirements are also more likely to capture smaller firms. For example, only 6 percent of U.S. retail firms in the sample have fewer than 250 employees, compared to 96 percent of Swedish firms (the country with the largest number of firms in the sample—see appendix table A.1). Because of this, the sample of firms used in this paper does not necessarily reflect the whole population of firms across the various countries included, as some countries are better represented than others. The data used in figure 2 above identified around 606,000 retail firms in the United States, while the Orbis sample used in this paper identified 1,416 U.S. retail firms with useable financial data.

Data gathered from Orbis were also cleaned manually to eliminate firms in other industries that were improperly coded as retail firms. We used text searches to confirm that ORBIS' company descriptions in English and/or in original language that indicated that the firm's primary activity is retail services. For the text search, we used keywords associated with retail such as "retail, sales, merchant" and other related terms which appeared frequently in the company descriptions of verified retail firms.[38]The text search and confirmation were performed for all firms in the sample, while manual verification via web searches were also performed for the largest 20 companies by revenue for each country depending on the country sample size.[39] In addition, the authors also validated that all firms in the sample with operating revenue greater than $5 million in 2018 (the year with the largest number of observations for

[35] The data were downloaded on April 30, 2020. Due to the disruption to the retail sector worldwide caused by COVID-19, which could affect firm profitability in a variety of ways across countries, data from 2014 (the earliest year of STRI availability) to 2019 (the last full year before the COVID-19 pandemic) were used.
[36] A total of 93,858 observations were present in the original ORBIS dataset after cleaning, however fewer than half of these (40,839) have the required financial and ownership data for use in the econometric estimations.
[37] For more information on the Orbis dataset and its use in econometric estimation, see OECD, " Coverage and representativeness of Orbis data," June 2020.
[38] For text searches, the majority of firm descriptions were available in English, however, a substantial number were in other languages. The set of retail-related keywords developed by the authors were translated in several other languages (Spanish, French, Portuguese, Dutch, German, Italian, Finnish, Swedish, Norwegian, Thai, Latvian, Hungarian, Romanian, Croatian, and Czech) using Google translate, based on the language of company description field in Orbis. These keywords were then used to conduct automated searches of text fields available from Orbis which described firms' business activities. This was done both to verify that an individual firm was engaged in retail activities, as well as to verify whether a firm was a holding company or engaged in e-commerce.
[39] Of the 48 countries in the sample pulled from Orbis, 11 countries had fewer than 20 firms across all years.

this variable) provided retail services. Note that the ORBIS sample contained some firms that are both manufacturers and retailers. Although these firms were coded in ORBIS with a retail NACE code, they are also significant manufacturers that both produce their own products and sell these products directly to consumers through their own physical stores and online, (as well as distributing through third-party retailers). Those firms whose primary activity could be confirmed as manufacturing were removed (where such firms could be identified).[40] However, the availability of detailed descriptions were inconsistent and such searches only identified a small number of non-retail firms which were excluded from the sample.[41] Orbis also contains information on firms' ownership and location. Orbis provides information on the location of a firm's global ultimate owner, which Orbis defines as a firm that owns at least 50 percent of another firm (either directly or through another subsidiary)[42] and this is used to determine whether a firm is foreign- or domestically owned.

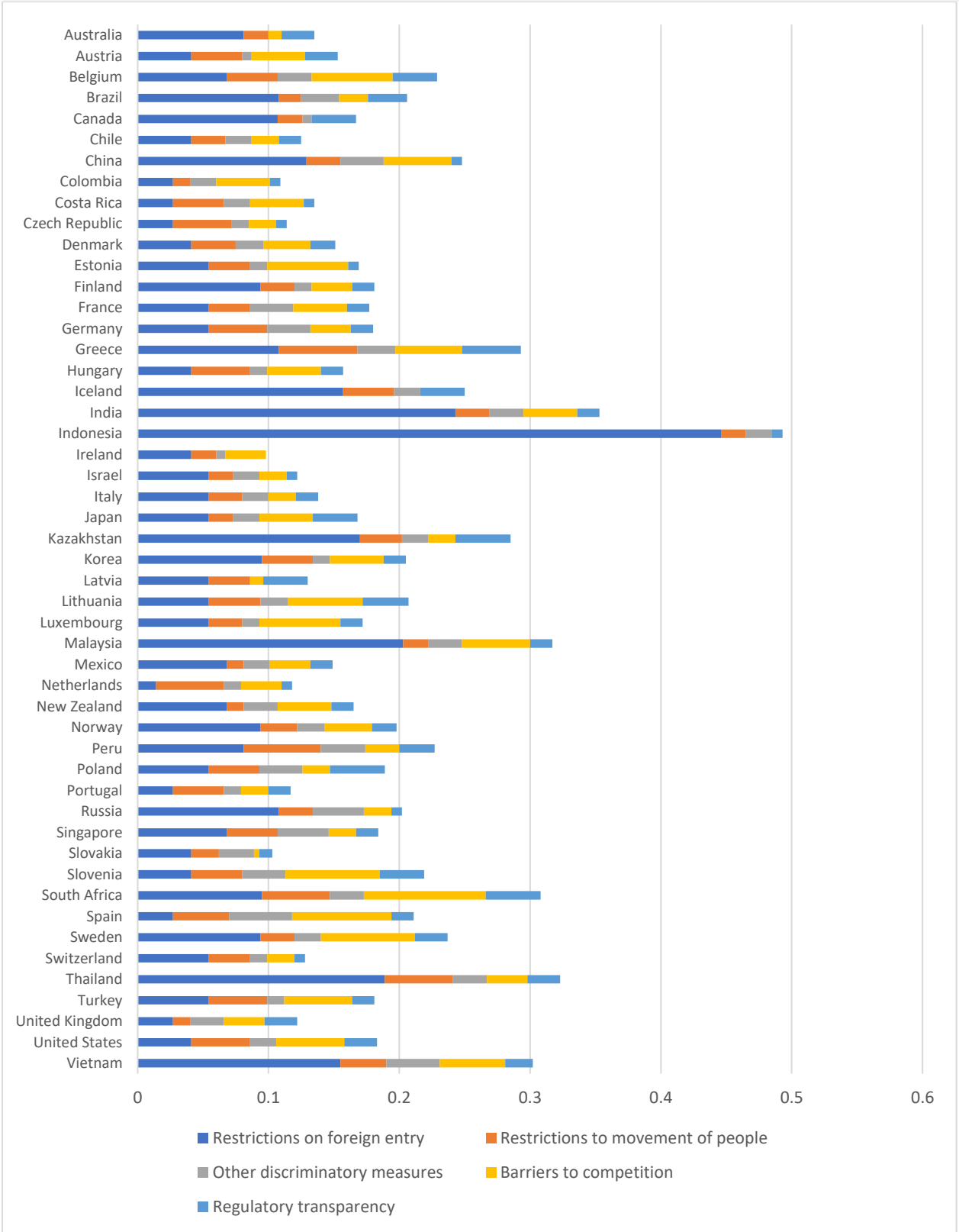
To measure the level of restrictiveness on retail services, this paper uses the OECD's services trade restrictions index (STRI) for 2014–19 for 48 countries.[43] The OECD does not publish an STRI specifically for retail services; the STRI used in this paper is for distribution services as a whole (including both wholesale and retail trade). Most of the specific policies measured by the STRI apply to exclusively retail services while others apply to both retail and wholesale trade; only a small number apply exclusively to wholesale services.[44] Measures that impact wholesale trade may also directly affects retailers. Many large firms classified as retailers may also have extensive wholesale operations (conversely, smaller firms rely on wholesalers for their products, and so are indirectly affected by restrictions on wholesalers).[45] The STRI measures the stringency of NTMs in the distribution sector in five broad categories: restrictions on foreign entry, restrictions to movement of persons, other discriminatory measures, barriers to competition, and regulatory transparency.[46] The STRI ranges from 0 to 1, with a score of 0 being the least restrictive, and 1 being the most restrictive.

Appendix table A.2 lists the policy measures that compose the STRI for distribution. Of the countries in the sample, only Indonesia had a score higher than 0.4 in 2019, with most other countries ranging from

[40] For example, both IKEA and Nike manufacture products and also maintain networks of retail outlets. Nike is primarily a manufacturer whose products are sold predominantly by other retailers and was not included in the sample because the bulk of its revenue is not derived from retail activities which could be affected by the restrictions examined in this paper. By contrast, IKEA exclusively sells its products in its own retail outlets and was included in the sample because its revenue could be directly affected by restrictions on the retail sector.
[41] As an additional exercise, an attempt was made to determine which firms provided retail e-commerce services through a text search of each firm's description as well as a search of their secondary NAICS codes for those that are related to e-commerce. This exercise produced inconsistent results, due to the lack of detailed descriptions or secondary NAICS codes for many firms, including those known to engage in e-commerce based on other sources. As a result, the quantitative approach used in this paper does not specifically examine the effects of restrictions on e-commerce, although this is an area for potential future research.
[42] Bureau van Dijk. "Ultimate Owner Identification," ORBIS User Guide, last updated February 2019, accessed April 1, 2019.
[43] A joint effort by the World Bank and the WTO recently published its own services trade restrictiveness index, an update to its earlier STRI project, that includes distribution services. However, this data only is only available for 2 years (2016 and 2019) which precludes the construction of a panel of data. For this reason, the OECD's STRI was preferred for this approach.
[44] OECD, email correspondence with USITC staff, June 3, 2019.
[45] OECD, email correspondence with USITC staff, May 20, 2021.
[46] OECD, "Services Trade Restrictiveness Index," accessed February 20, 2019.

0.2-0.3 (figure 3). For roughly half of the sample, the STRI sub-indicator restrictions on foreign entry makes up at least 40 percent of the total STRI score (and almost 70 percent in Indonesia, which has the highest overall STRI in the sample). Over time, 16 countries saw their overall scores increase from 2014–19 (and 5 countries had scores that rose by more than 10 percent), while 20 saw their overall scores decrease (though only one country saw its score decline by more than 10 percent) and 14 saw no change. Since a higher STRI indicates greater restrictiveness, the overall trend in the distribution sector is a larger number of countries either maintaining their levels of restrictions or decreasing them slightly while a smaller number of countries increased restrictions to a greater degree.

Figure 3 STRI scores for distribution, by country and STRI indicator, 2019

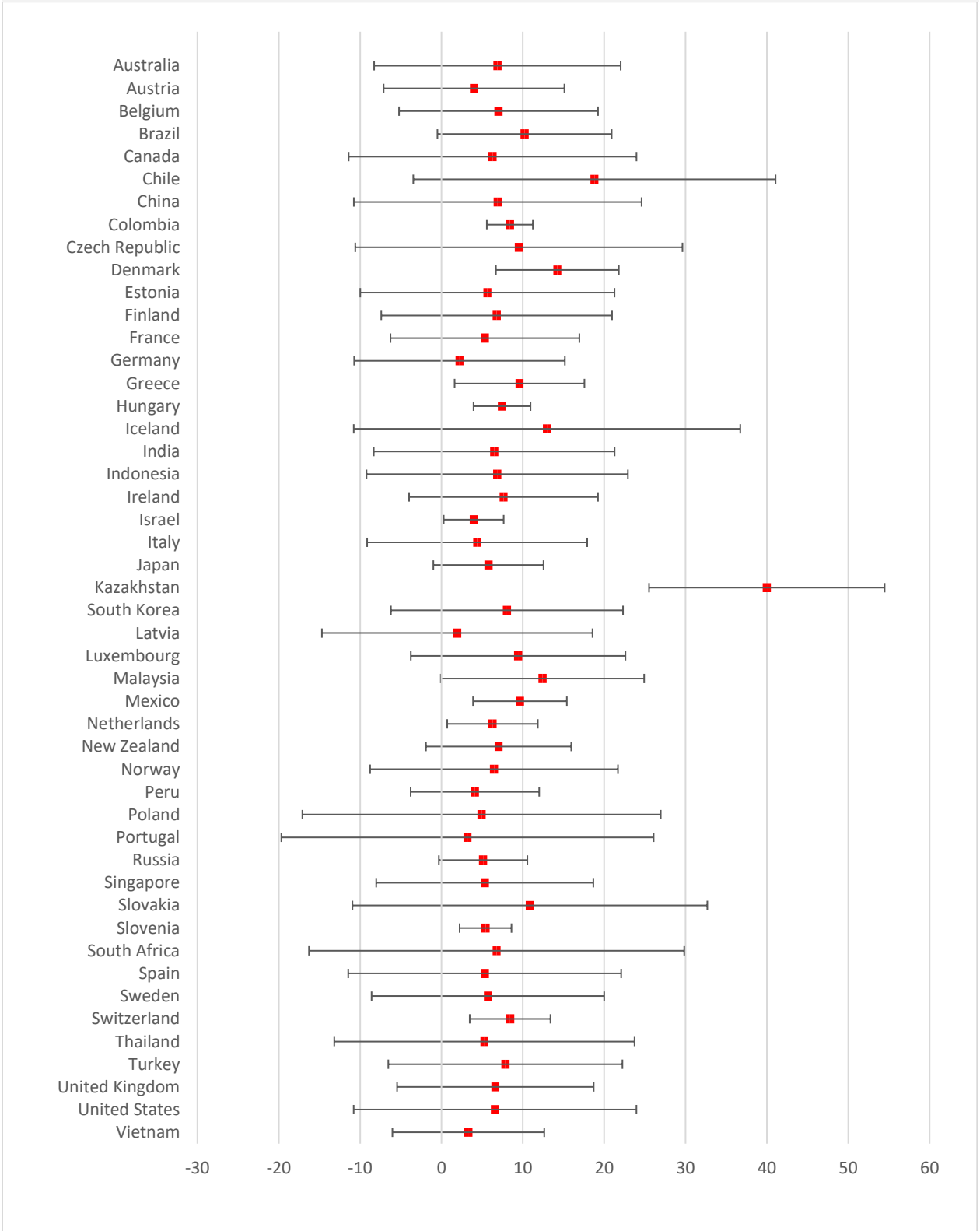


Source: OECD, "Services Trade Restrictiveness Index," accessed May 5, 2022.

Combining the STRI with the firm-level financial data from Orbis yields a panel of 40,839 observations across 48 markets and 5 years (2014–19).[47] Appendix table A.1 lists the countries in the sample and includes summary data on the financial indicators used per country. Figure 4 shows the average firm profitability by country, as measured by EBITDA margin. It is important to note that some firms are very small (fewer than 5 employees), and some have negative EBITDA margins. In particular, the presence of large numbers of small firms as well as outliers with extremely high (or negative) EBITDA margins differentiates the retail sector from other services sectors.

[47] The OECD publishes STRI measures for 50 countries, however Costa Rica and Lithuania did not appear in the Orbis sample.

Figure 4 Average EBITDA margin and standard deviation by country, 2014–19



Source: Authors calculations based on data from Bureau van Dijk, Orbis Database, accessed June 26, 2020.

Methodology

The methodological approach used in this paper relates firm-level profit margins to the STRI for distribution, along with country and firm characteristics. This study follows previous work[48] by clustering standard errors at the country level to combine firm- and country-level data in a single regression. The model also takes advantage of the OECD's recent updates to the STRI to increase the number of countries available as well as more recent data which extends the number years for which the STRI is available. This both extends the universe of firms that can be included in the analysis (as firms must be located in a country for which the OECD publishes an STRI measure) and also allows for the creation of a panel of data for use in the regression analysis outlined below, which considers variation in the STRI across countries as well as over time.

Equation 1 is the basis for empirical estimations to examine the impact of the STRI on firm profitability. The main policy variable is the OECD's STRI, and the dependent variable is firm profitability (measured by the EBITDA margin, which calculates a firm's operating profit as a percent of its revenue). The subscript *i* indicates the firm dimension, *c* the country dimension, and *t* the time dimension. Three variables are also included to control for variation in market size across countries. *Householdspend* is a measure of the final consumption expenditure by households per capita, at the country level, from the World Bank's World Development Indicators. This is used as a proxy to control for demand for retail services in a country.[49] *Laborprod* is the labor productivity of a firm, measured by the ratio of a firm's operating revenue and its total employment.[50] *Assetsrev* is the ratio of a firm's assets to its revenues, and measures a firm's efficiency at generating revenue given its assets.[51] Table 1 lists each variable, its definition, and source.

$$(1)\quad EBITDAmargin_{it} = \beta_1 + \beta_2 STRI_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

Equation 2 maintains the same structure as *Equation 1* but replaces the overall *STRI* variable with a sub-indicator for restrictions on foreign entry (*STRIfor*). *Equation 3* utilizes the STRI sub-indicator for restrictions on movement of people (*STRImovpop*) while *Equation 4* utilizes the STRI sub-indicator for

[48] For example, see Khachaturian (2015), Rouzet and Spinelli (2016), Oliver (2017), and Chambers and Peterson (2019).

[49] This measures the market value of all goods and services purchased by households on a per capita basis, using purchasing power parity in constant U.S. dollars. GDP per capita was also used in place of household expenditure to check the robustness of the results. Other controls used to check robustness but not included in the preferred specification include a country's population and a firm's cost of goods sold. These alternative specifications produced similar results to those of table 2.

[50] While Rouzet and Spinelli (2016) use total factor productivity (TFP) as a control in their model, this paper uses labor productivity (the ratio of employment to revenue for a given firm) as it minimizes the data requirements for calculation and results in a larger sample of firms and better country coverage. In a paper comparing methods for calculating productivity using Orbis data, Ahmad, Oliver, and Peters (2018) are able to calculate labor productivity for more countries than common methods of calculating TFP, while labor productivity exhibits similar patterns of variation across countries and sectors to TFP. Ahmad, Oliver, Peters, "Using Firm-level Data to Compare Productivities Across Countries and Sectors: Possibilities and Challenges," 2018.

[51] Aside from the STRI indicators and *Householdspend,* all other variables are calculated using data from Orbis.

barriers to competition (*STRIbarrcomp*), *Equation 5* utilizes the sub-indicator for regulatory transparency (*STRIregtrans*), and *Equation 6* utilizes the sub-indicator for other discriminatory measures (*STRIothdisc*).

$$(2)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRIfor_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

$$(3)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRImovpop_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

$$(4)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRIbarrcomp_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

$$(5)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRIregtrans_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

$$(6)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRIothdisc_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \varepsilon_{ict}$$

Finally, *Equation 7* adds indicator variables for whether a firm is foreign-owned, large (defined as having more than 250 employees in a given year), as well as an interaction term for large foreign-owned firms and a three-way interaction between the STRI for foreign entry and the indicator variables for large foreign-owned firms.

$$(7)\ EBITDAmargin_{it} = \beta_1 + \beta_2 STRIfor_{ct} + \beta_3 Householdspend_{ct} + \beta_4 Laborprod_{it} + \beta_5 Assetsrev_{it} + \beta_6 Foreign\_owned_{it} + \beta_7 Large\_firm_{it} + \beta_6 Large\_foreign\_owned_{it} + \beta_8 STRI\_large\_foreign\_owned_{it} + \varepsilon_{ict}$$

Table 1 Variables, definitions, and sources

Variable	Definition	Source
EBITDAmargin	EBITDA margin calculates the ratio of EBITDA (a firm's earnings before interest, tax, depreciation, and amortization) to revenue	Orbis
STRIindicator	An index of services restrictiveness in the retail sector, which ranges from 0 (least restrictive) to 1 (most restrictive)	OECD
STRIfor	The STRI sub-indicator which measures restrictions on foreign entry in the retail sector	OECD
STRImovepop	The STRI sub-indicator which measures restrictions on the movement of people in the retail sector	OECD
STRIbarrcomp	The STRI sub-indicator which measures barriers to competition in the retail sector	OECD
STRIregtrans	The STRI sub-indicator which measures the transparency of regulations in the retail sector	OECD
STRIotherdisc	The STRI sub-indicator which measures other discriminatory restrictions in the retail sector	OECD
Householdspend	A measure of the final consumption expenditure by households per capita, at the country level	World Bank, World Development Indicators
Laborprod	Labor productivity of a firm, measured by the ratio of a firm's operating revenue and its total employment	Orbis
Assetsrev	Ratio of a firm's assets to its revenues	Orbis
Largefirm	An indicator variable which equals 1 if a firm had over 250 employees in a given year	Orbis
Foreign_owned	An indicator variable which equals 1 if a firm had a foreign parent	Orbis

Source: Compiled by authors.

Results

Regression results are presented in table 2 for Equations 1–6. Column (1) shows results for specification (1) which related the level of restrictiveness to firm profitability for the overall STRI indicator as well as five STRI sub-indicators (on foreign entry, movement of people, barriers to competition, regulatory transparency, and other discriminatory measures).[52] The coefficients on the overall STRI indicator for distribution sector, as well as sub-indicators for movement of persons, barriers to competition, and regulatory transparency are all not significant (columns 1, 3, 4, and 5). However, the coefficient for the STRI sub-indicator for foreign entry (column 2) is positive and significant (at the 1 percent level), indicating that retail firm profitability (as measured by the EBITDA margin) increases as the level of restrictiveness for foreign entry increases. More concretely, the model suggests that retail firms in a country moving from STRI foreign entry score of 0.014 (the lowest score for any country in 2019, belonging to the Netherlands) to 0.446 (the highest score for any country in 2019, belonging to

[52] These sub-indicators are defined in OECD, "Services Trade Restrictiveness Index (STRI): Distribution Services," OECD Trade Policy Papers No. 173, 2014.

Indonesia) would lead to a 67 % increase in profitability.[53] Conversely, the coefficient for the STRI sub-indicator for other discriminatory measures[54] (column 6) is negative and significant (at the 1 percent level). This indicates that as the level of "other" restrictiveness increases, firm profitability decreases. One possible explanation for this result is that this measure of restrictiveness also captures policies which impact the competitiveness of domestic firms (in addition to foreign firms), which in turn affects their profitability.

Both these results are consistent with the findings of Rouzet and Spinelli (2016) and provide support for the hypothesis that increased restrictions on foreign entry in services sectors are associated with higher firm profits due to decreased competition, as well as the hypothesis that certain other restrictions may adversely affect the competitiveness and profitability of both foreign and domestic firms.[55] Other previous research summarized above which did not find a positive relationship between NTMs and profitability in this sector used undifferentiated measures of services restrictiveness which did not separate restrictions on foreign entry from other types of restrictions. This suggests that restrictions on foreign entry have a different effect on firms than other NTMs as measured by the various STRI sub-indicators.

[53] (0.446–0.014) * 1.550. This result is robust even when removing India and Indonesia from the sample (the two countries with the highest scores for both the overall distribution STRI and the foreign entry sub-indicator).
[54] Other discriminatory measures include discriminatory taxes and other forms of subsidies, discrimination in government procurement, and trademark protection, restrictions of pack sizes and labeling, lack of adoption of international standards, availability of licenses for providing consumer credit, and local sourcing requirements.
[55] While some policies contained in the "other discriminatory measures" sub-indicator specifically focus on foreign firms (such as discriminatory taxes, subsidies, and government procurement) others such as licenses to provide consumer credit (which makes it easier for consumers to finance retail purchases) or local sourcing requirements are likely to affect both foreign and domestic firms. When all STRI sub-indicators are included in the same regression, the sub-indicators maintain the signs and significance reported in table 2, but the magnitude of the individual coefficients is smaller, particularly for other discriminatory measures.

Table 2 Results by STRI sub-indicator

Dependent variable	EBITDA margin	EBITDA margin	EBITDA margin	EBITDA margin	EBITDA margin	EBITDA margin
Overall Distribution STRI	0.731					
	[1.111]					
STRI foreign entry sub-indicator		1.550***				
		[0.521]				
STRI movement of people sub-indicator			-2.014			
			[3.578]			
STRI barriers to competition sub-indicator				5.304		
				[7.637]		
STRI regulatory transparency sub-indicator					-8.190	
					[9.414]	
STRI other discriminatory measures sub-indicator						-8.218***
						[2.628]
Household spending (per capita)	0.304	0.330*	0.259	0.323*	0.308*	0.248
	[0.193]	[0.180]	[0.202]	[0.192]	[0.181]	[0.202]
Ratio of assets to revenue	0.367***	0.367***	0.367***	0.369***	0.368***	0.366***
	[0.0471]	[0.0471]	[0.0472]	[0.0472]	[0.0476]	[0.0469]
Labor productivity	0.116***	0.116***	0.116***	0.119***	0.118***	0.115***
	[0.0425]	[0.0428]	[0.0424]	[0.0432]	[0.0431]	[0.0416]
Observations	40,839	40,839	40,839	40,839	40,839	40,839
R-squared	0.019	0.019	0.019	0.019	0.019	0.019

Source: Authors' estimates.
Notes: *** p<0.01, ** p<0.05, * p<0.1. Clustered standard errors in brackets. All variables except STRI in log-linear form. Results in table 1 are similar if household spending is replaced with GDP per capita, and if the two countries in the sample with the highest STRI (India and Indonesia) are excluded.

Additional specifications are presented in table 3. These take *Equation 2* and estimate it separately for several samples. Column 1 presents the preferred specification above (using the STRI sub-indicator for foreign entry) only for foreign-owned firms in the sample, while column 2 presents the same specification for domestic-owned firms.[56] While the coefficient for the STRI variable is negative but not significant for foreign-owned firms, it is positive and significant for domestic-owned firms, indicating that higher levels of restrictiveness are associated with an increase in profitability for domestic-owned firms, consistent with the idea that the STRI for foreign entry captures restrictions that limit foreign competition and benefit domestic firms. Columns 3 and 4 present the same specification for large firms and small firms separately. Here the STRI variable is significant for both samples but has a higher

[56] This model was also estimated using trade in all sectors with an interaction between indicator variables for various firm characteristics (ownership, size, subsidiary status) and the STRI variable. The coefficient of the interaction variable was negative and significant for large firms (so that increasing restrictiveness was associated with a decrease in profitability for large firms), while positive and not significant for foreign owned firms, and negative and significant for subsidiaries (so that increasing restrictedness was associated with a decrease in profitability for subsidiaries regardless of whether they were foreign or domestic-owned). In these alternate specifications, the indicator variables for foreign-owned firms and subsidiaries were omitted from the regressions due to collinearity, so regressions are presented in table 2 for separate samples for ease of interpretation.

significance level and a larger effect size for the large firm sample compared to the small firm sample. Finally, column 5 presents *equation 7* which builds on *equation 2* by adding indicator variables for whether a firm is foreign-owned, large (defined as having more than 250 employees in a given year), as well as an interaction term for large foreign-owned firms and a three-way interaction between the STRI for foreign entry and the indicator variables for large foreign-owned firms utilizing the full sample. While the indicator variable for large foreign-owned firms is positive and significant, the three-way interaction term is negative and significant, adding further evidence that the STRI for foreign entry sub-indicator is associated with reduced profitability for large, foreign-owned firms. Taken together, this provides support for the hypothesis that increased restrictions on foreign entry are associated with higher firm profitability for domestic firms, and that larger firms also see a larger increase in profitability compared to smaller firms as restrictiveness increases.

Table 3 Results by ownership and firm size

Dependent variable	EBITDA margin (foreign-owned firms only)	EBITDA margin (domestic-owned firms only)	EBITDA margin (large firms only)	EBITDA margin (small firms only)	EBITDA margin (all firms)
STRI foreign entry sub-indicator	-0.326 [0.652]	3.081*** [0.687]	2.275** [0.931]	1.245* [0.637]	1.697*** [0.498]
Household spending (per capita)	-0.437 [0.304]	0.423** [0.194]	0.430* [0.253]	0.235 [0.275]	0.328* [0.179]
Labor productivity	-0.0250 [0.0652]	0.122** [0.0482]	0.132* [0.0727]	0.0966*** [0.0166]	0.116*** [0.0429]
Ratio of assets to revenue	0.284** [0.113]	0.368*** [0.0488]	0.434*** [0.0745]	0.283*** [0.0304]	0.367*** [0.0472]
Foreign owned					o
Large firm					-0.0734 [0.0727]
Foreign-owned large firm					0.640** [0.241]
STRI foreign entry, large foreign-owned firm					-5.565*** [1.882]
Observations	3,773	37,066	21,073	19,766	40,839
R-squared	0.017	0.019	0.025	0.012	0.019

Source: Authors' estimates.
Notes: o = omitted for collinearity. *** p<0.01, ** p<0.05, * p<0.1. Clustered standard errors in brackets. All variables except STRI in log-linear form.

Conclusion

This paper examines competition and profitability in the retail sector using data from Orbis and the OECD's STRI, extending previous analysis on ports, banking, insurance, and telecommunications services. The analysis confirms previous findings from other sectors that NTMs which restrict foreign entry, as measured by the OECD's STRI, have a positive impact on the profitability of domestic-owned firms, which is also consistent with prior literature. However, other discriminatory measures have a negative and significant effect on firm profitability, which may offset the profitability enhancing effects of restrictions on foreign entry in countries with both types of policies. When these sub-measures are aggregated into the overall STRI, their relationship to firm profitability is obscured, which highlights the important of differentiating various types of policies that impact services trade. This paper also builds on previous work by considering differences in firm size and ownership, with increased restrictiveness also associated with higher profitability of large firms relative to small firms. However, restrictions on foreign entry are also associated with decreased profitability for large, foreign-owned firms. Future research in this area may consider whether certain types of digital restrictions affect retail firms with significant e-commerce operations as e-commerce increases its share of retail sales in the post-COVID world. Future research may also consider the impact of NTMs in various industries that participate in a value chain for a product or group of products.

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Appendix

Table A.1 Foreign ownership and firm size by country in sample, 2014–19

Country	Number of small firms	Number of large firms	% Large firms	Number of domestic-owned firms	Number of foreign owned firms	% Foreign owned	Number of total firms
AT	65	43	39.8%	60	48	44.4%	108
AU	275	745	73.0%	888	132	12.9%	1,020
BE	10,423	7,511	41.9%	14,580	3,354	18.7%	17,934
BR	0	90	100.0%	78	12	13.3%	90
CA	3	219	98.6%	186	36	16.2%	222
CH	0	18	100.0%	18	18	100.0%	18
CL	4	86	95.6%	90	90	100.0%	90
CN	758	1,504	66.5%	1,686	576	25.5%	2,262
CO	0	12	100.0%	6	6	50.0%	12
CZ	420	276	39.7%	528	168	24.1%	696
DE	75	99	56.9%	144	30	17.2%	174
DK	5	19	79.2%	24	24	100.0%	24
EE	1,026	192	15.8%	60	1,158	95.1%	1,218
ES	505	83	14.1%	264	324	55.1%	588
FI	4,364	2,572	37.1%	2,442	4,494	64.8%	6,936
FR	3,754	7,352	66.2%	2,868	8,238	74.2%	11,106
GB	1,139	829	42.1%	1,416	552	28.0%	1,968
GR	23	37	61.7%	42	18	30.0%	60
HU	6		0.0%	6	6	100.0%	6
ID	18	102	85.0%	108	12	10.0%	120
IE	40	38	48.7%	30	48	61.5%	78
IL	4	44	91.7%	42	6	12.5%	48
IN	61	311	83.6%	180	192	51.6%	372
IS	129	45	25.9%	84	90	51.7%	174
IT	1,663	329	16.5%	1,512	480	24.1%	1,992
JP	248	1,156	82.3%	1,164	240	17.1%	1,404
KR	34	206	85.8%	168	72	30.0%	240
KZ	4	2	33.3%	6	6	100.0%	6
LU	5	37	88.1%	18	24	57.1%	42
LV	168	6	3.4%	126	48	27.6%	174
MX	0	78	100.0%	18	60	76.9%	78
MY	0	102	100.0%	78	24	23.5%	102
NL	24	30	55.6%	42	12	22.2%	54
NO	4,853	1,987	29.0%	5,424	1,416	20.7%	6,840
NZ	2	94	97.9%	48	48	50.0%	96
PE	0	18	100.0%	18	18	100.0%	18
PL	62	64	50.8%	84	42	33.3%	126
PT	113	49	30.2%	24	138	85.2%	162
RU	0	72	100.0%	54	18	25.0%	72
SE	17,495	655	3.6%	5,718	12,432	68.5%	18,150
SG	6	120	95.2%	108	18	14.3%	126
SI	4	8	66.7%	12	12	100.0%	12
SK	11,551	5,489	32.2%	7,512	9,528	55.9%	17,040
TH	0	126	100.0%	108	18	14.3%	126
TR	12	36	75.0%	48	48	100.0%	48

Country	Number of small firms	Number of large firms	% Large firms	Number of domestic-owned firms	Number of foreign owned firms	% Foreign owned	Number of total firms
US	86	1,330	93.9%	1,080	336	23.7%	1,416
VN	27	63	70.0%	60	30	33.3%	90
ZA	5	115	95.8%	96	24	20.0%	120
Total	59,459	34,399	36.7%	49,320	44,538	47.5%	93,858

Source: Authors calculations based on data from Bureau van Dijk, Orbis Database, accessed June 26, 2020.

Table A.2 List of Distribution services measures contained in the OECD STRI

STRI measure	Discriminatory	Non-discriminatory
Restrictions on foreign entry		
Maximum foreign equity share allowed (%) for retailers	*	
Maximum foreign equity share allowed (%) for wholesalers	*	
There are statutory or other legal limits to the number or proportion of shares that can be acquired by foreign investors in firms that are controlled by national state or provincial governments	*	
Legal form: only joint ventures are allowed	*	
Legal form: other restrictions	*	
Board of directors: majority must be nationals	*	
Board of directors: majority must be residents	*	
Board of directors: at least one must be national	*	
Board of directors: at least one must be resident	*	
Manager must be national	*	
Manager must be resident	*	
Screening: foreign investors must show net economic benefits	*	
Screening: approval unless contrary to national interest	*	
Screening: notification	*	
Conditions on subsequent transfer of capital and investments	*	
Restrictions on cross-border mergers and acquisitions	*	
Acquisition of land and real estate by foreigners is prohibited or subject to restrictions	*	
The distribution of certain products at the retail level is reserved for statutory monopolies		*
The distribution of certain products at the wholesale level is reserved for statutory monopolies		*
Wholesale licenses for the distribution of certain products are subject to quotas or economic needs tests		*
Retail licenses for the distribution of certain products are subject to quotas or economic needs tests		*
Licenses for department stores or large-store formats are subject to quotas or economic needs tests		*
Zoning regulation discriminates foreign suppliers against domestic competitors	*	
The number of sales outlets per firm is limited		*
Commercial presence is required in order to provide distribution services.	*	
A license is required for e-commerce		*
Restrictions on franchising		*
Restrictions on direct selling		*
Restrictions on the movement of people		

STRI measure	Discriminatory	Non-discriminatory
Quotas: intra-corporate transferees	*	
Quotas: contractual services suppliers	*	
Quotas: independent services suppliers	*	
Labor market tests: intra-corporate transferees	*	
Labor market tests: contractual services suppliers	*	
Labor market tests: independent services suppliers	*	
Limitation on duration of stay for intra-corporate transferees (months)	*	
Limitation on duration of stay for contractual services suppliers is limited to (months)	*	
Limitation on duration of stay for independent services suppliers is limited to (months)	*	
Other restrictions	*	
Other discriminatory measures and international standards		
Foreign suppliers are treated less favorably regarding taxes and eligibility to subsidies	*	
Foreign participation in public procurement: discrimination in the application of financial or technical criteria for project tender	*	
Do national standards for distribution services deviate from international standards?	*	
Foreign firms are discriminated against on trademark protection	*	
Local sourcing requirements	*	
The prepackaging of products is subject to mandatory nominal quantities		*
Labelling provisions go beyond information requirements		*
Consumer credit licenses are available to foreign retailers	*	
Other restrictions	*	
Barriers to competition		
When appeal procedures are available in domestic regulatory systems, they are open to affected or interested foreign parties as well	*	
Foreign firms have redress when business practices are perceived to restrict competition in a given market	*	
National, state or provincial government control at least one major firm in the sector		*
Publicly controlled firms or undertakings are subject to an exclusion or exemption, either complete or partial, from the application of the general competition law.		*
Minimum capital requirements		*
Vertical agreements: Resale price maintenance is subject to regulation		*
Vertical agreements: Territorial or customer group sales restrictions are subject to regulation		*
Laws or regulations impose restrictions on the nature or content of contracts		*
Firms are required to disclose confidential information		*
Price regulation: minimum prices		*
Large retailers are subject to specific taxes		*
Seasonal sales periods are regulated		*
Regulation imposes an upper limit on shop opening hours		*
Regulations limit the range of products a retailer may carry		*

STRI measure	Discriminatory	Non-discriminatory
Retailers or wholesalers are subject to restrictions on advertising		*
Retailers can set up their own recycling systems		*
Memo: Minimum floor space to be considered large format retail outlet (m^2)		*
Other restrictions		*
Regulatory transparency		
Regulations are published or otherwise communicated to the public prior to entry into force		*
There is a public comment procedure open to interested persons, including foreign suppliers		*
Range of visa processing time (days)		*
Construction permit: official costs associated with completing the procedures necessary to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections (in %)		*
Construction permit: all procedures that are necessary to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections		*
Time taken between the submission of an accepted customs declaration and customs clearance (days)		*
Licenses are allocated according to publicly available criteria		*
Restrictions related to the duration and renewal of licenses		*
Other restrictions		*

Source: Compiled by USITC staff from Ueno et al, "Services Trade Restrictiveness Index (STRI): Distribution Services," 2014.