



Trade in Business Services' booms: The case of Ghana[☆]

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ABSTRACT

This paper analyzes the growth of trade in Business Services with a particular focus on Ghana. This country experienced the fastest and most important increase in Business Services exports recorded in recent years. This spectacular growth has led Ghana to export as much as a developed country and improved its economy. The main factor underneath this growth is the improved capacity to export Business Services, which is likely to be accounted by an impressive inflow of foreign companies attracted by the economic and political conditions, together as the establishment of the secretariat of the African Continental Free Trade Area. These results are not specific to Ghana. In other African and non-African countries supply-side determinants show to be the main propellant of Business Services trade growth.

1. Introduction

Trade in services has been the fastest component of world trade over the past thirty years (World Trade Organization, 2019; UNCTAD, 2021) and it is considered a potential source of growth and development for developing countries (e.g., Francois and Hoekman, 2010; Hoekman, 2018; Nayyar et al., 2021).¹ However, there is not yet evidence that these countries are actually seizing this opportunity (e.g., Ariu and Ogliari, 2023).

In this paper, we use novel data on trade in services to show that at least one developing country is actually experiencing a spectacular boom in trade in services. Since 2015, Ghana's exports of Business Services, one of the most skill-intensive service sectors and a key driver of wage growth in developed economies (Eckert et al., 2019), have surged sixteenfold. Ghanaian exports of Business Services averaged about 300 million dollars per year in the period 2000–2014, but they soared to about 5,000 million dollars per year in the period 2015–2022. Remarkably, this figure is comparable to Business Services exports of developed countries such as Portugal, Finland, and the Czech Republic. The main driver of this growth appears to be a supply shock, likely stemming from the entry of multinational firms in Ghana, rather than an incremental improvement in the capabilities of domestic firms. Additionally, this export boom is associated with improvements in GDP, GDP per capita, increased outward FDI flows, and an amelioration of the current account balance. While it is too early to draw definite conclusions about whether this export surge will lead to sustained development, Ghana's experience provides the first evidence that high-skilled services can also become an export driver for developing countries.

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¹ Services offer growth opportunities for developing countries for three main reasons: first, services have an intangible nature that makes them more easily traded online (e.g., Borchert and Mattoo, 2010; Francois and Hoekman, 2010); second, they require lower capital investments (e.g., Breinlich and Criscuolo, 2011; Ariu, 2016); third, they are less sensitive to economies of scale (e.g., Nayyar et al., 2021).

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One of the main challenges in analyzing trade in services in developing countries is the lack of reliable data. For most developing economies, trade in services is often estimated due to a lack of official statistics. The only dataset that is able to report actual export and import data for trade in services for all countries is [Loungani et al. \(2017\)](#). However, the temporal coverage is limited to 2014, making it difficult to study recent trends. Starting from the IMF Balance of Payments Dataset, which represents the main source of data also for [Loungani et al. \(2017\)](#), we reconstructed the same data adding information up to 2022. The only difference with respect to [Loungani et al. \(2017\)](#) is that publicly available data allows us to track services only at the 2-digit EBOPS level. However, this is sufficient to isolate information on Business Services, the focus of our study. We concentrate on this particular service category because it is the most skill-intensive segment of trade in services and has been the primary driver of global trade growth in this sector ([World Trade Organization, 2019](#)).

Focusing on Ghana, we find compelling evidence that this country experienced an extraordinary expansion in its exports of services, reaching levels comparable to those of developed economies. This growth was not merely the result of trade diversion. Most African countries actually increased their services exports, though at a lower pace than Ghana. Using BATIS data for the period 2005–2021, we trace Ghana's Business Services exports geographically. Most of the new Ghanaian exports of Business Services were absorbed by the Asian markets, while the European one grew more slowly, losing market shares. More specifically, Europe lost 20 percentage points of its share (from 58% to 36%) in favor of Asia (from 15% to 30%).

To explore the drivers of this export boom, we employ a structural gravity model, regressing bilateral log exports on origin-year, destination-year, origin–destination fixed effects and on dummies capturing the presence of trade agreements that involve goods, services, or both. Taking the estimated fixed effects for Ghana, we find that only the origin-year one is responsible for the growth of Business Services growth. This means that the main determinant of export growth is represented by a supply shock that caused an improvement in the capability of selling Business Services abroad. To understand whether this is an exception or a common pattern, we performed the same exercise also for Algeria, Mauritius, Morocco, South Africa, and Seychelles, which are countries that also experienced an increase in Business Services exports. Indeed, also in these cases supply is the main determinant of export growth. On the contrary, supply shows to be less important for the growth of other types of services. Therefore, supply plays a crucial role for Business Services.

Given the sudden nature of the increase in Business Services growth, it is unlikely that existing Ghanaian firms improved their capability of serving foreign markets. A possible cause is represented by the entry of multinational firms around 2015. These major players have the size and capabilities to make such a big difference. Checking the press releases of some of these companies, it is clear that they chose Ghana for its good institutions, good investments in ICT infrastructure, but also the presence of the Secretariat of the African Continental Free Trade Area. Finally, the export growth was accompanied by increases in GDP, GDP per capita, outward FDI flows, and an improvement in the Current Account. Therefore, there are the first signs that this export growth could be leading to development.

This paper is mostly related to the papers that analyze trade in services in the context of developing countries (e.g., [Ariu and Ogliari, 2023](#); [Socrates et al., 2023](#)). We make two main innovations with respect to these studies. First, we can rely on more up-to-date data, thus giving a glance of recent trends. Second, we are the first to document and analyze the explosion of trade in Business Services in Ghana, and thus the possibility to exploit this channel of growth in the context of a developing country.

More broadly, this paper contributes to the literature on trade in services. Earlier research primarily examined aggregate trends, with a strong focus on developed economies (e.g., [Head et al., 2009](#); [Crinò, 2010](#); [Francois and Hoekman, 2010](#)). More recent studies have deepened our understanding of services trade by leveraging firm-level data (e.g., [Jensen, 2011](#); [Breinlich and Criscuolo, 2011](#); [Ariu, 2016](#)). However, with the exception of [Dincer and Tekin-Koru \(2016\)](#), which examines Turkey, there is still limited knowledge of the micro-level dynamics of services trade in developing countries. While this paper does not rely on firm-level data, it contributes to the literature by shifting the focus to a developing country and analyzing the key mechanisms driving trade growth in Business Services—one of the most skill-intensive service categories and the fastest-growing segment of global services trade.

In terms of methodology, several papers used gravity regressions in the context of services (e.g., [Kimura and Lee, 2006](#); [Head et al., 2009](#); [Anderson et al., 2014, 2018](#)). However, we are the first to exploit this empirical strategy to disentangle supply and demand determinants of trade growth. More specifically, we can use the gravity estimates to understand the drivers of the Ghanaian growth in Business Services.

The paper is organized as follows. Section 2 provides a portrait of Business Services export growth in Ghana. Section 3 analyzes the determinants of trade growth. Finally, Section 4 provides some concluding remarks.

2. The growth of trade in services in Ghana

To document the growth of services in Ghana in comparison with other African countries, we use two sources of data. The first is the IMF Balance of Payments dataset. This data source covers the longest time period possible (1980–2022) and it is the most reliable to analyze the evolution of trade in services because all data are actually observed and there is no imputing involved.² However, they do not contain information on the destination of the exports. To address this limitation, we also use the Balanced Trade in Services Dataset (BaTIS) from [Fortanier \(2018\)](#) which records trade in services from 2005 to 2021 at the origin–destination–service–year level. For both datasets, the classification of services follows the usual EBOPS categories, and we keep information only on Business Services exports.

² The [Loungani et al. \(2017\)](#) dataset which also uses the IMF Balance of Payments dataset stops in 2014.

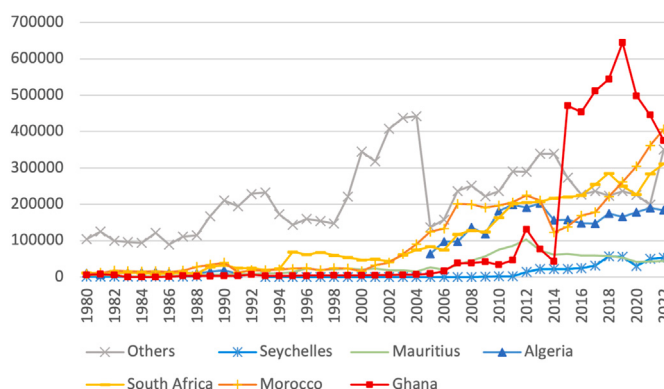


Fig. 1. Business Services growth in Africa.

Note: This figure plots the evolution of Business Services exports for African countries between 1980 and 2022.

Data source: IMF Balance of Payments Dataset.

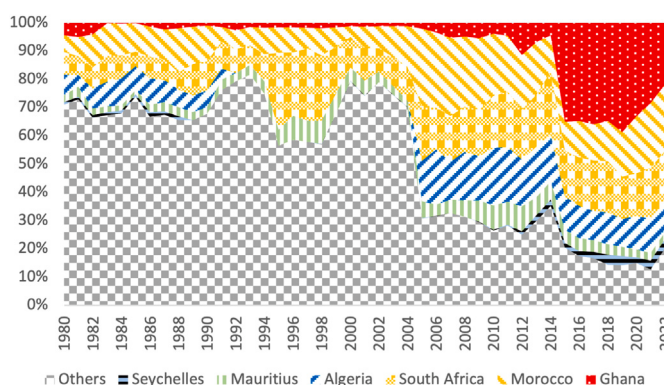


Fig. 2. Business Services market shares in Africa.

Note: This figure plots the evolution of Business Services exports shares in Africa between 1980 and 2022.

Data source: IMF Balance of Payments Dataset.

2.1. Ghana is the most important exporter of Business Services in Africa

Focusing on Africa, we can observe in Fig. 1 that Ghana is the biggest exporter of Business Services. In only one year (from 2014 to 2015) its Business Services exports increased more than tenfold, from 400 million dollars to almost 5,000 million dollars. To provide a benchmark, it is a value of Business Services that is twice as much as South Africa and that is comparable to developed countries such as Portugal, Finland, Czech Republic. This exceptional growth represents the greatest increase in trade in services observed in recent years, both in terms of levels and percentage.

Ghana is not the only African country which experienced an important increase in Business Services. Algeria, Mauritius, Morocco, South Africa and Seychelles also registered noteworthy increases in Business Services. However, their growth paths are different. All of them started growing a bit earlier: the 90s for South Africa; around 2000 for Algeria, Mauritius, and Morocco; and around 2010 for Seychelles. Moreover, their growth paths are smoother.

In terms of shares, Fig. 2 shows that in 2022 Ghana holds 22% of all African exports of Business Services, thus it is the top African exporter together with Morocco. South Africa accounts for 18%, Algeria 11%, Mauritius and Seychelles 3%. Therefore, these six African countries account for 80% of total African exports of Business Services. Fig. 2 also suggests that concentration increased over time. Despite this fact, also a tiny country like Seychelles managed to become an important actor in the exports of Business Services. Therefore, higher concentration does not seem to be an obstacle for new countries to shine in the realm of trade in Business Services and there is scope for observing new trade booms for Africa and potentially also from other developing countries.

Another important fact is that services trade growth for Ghana is specific to Business Services only. When looking at all services exports excluding Business Services in Fig. A.1 in the Appendix, the growth of Ghana is actually tiny.³ Therefore, this growth is specific to one of the most high-skilled sectors and it cannot be due to a general increase of demand for all services coming from

³ Non-Business Services are: Transport, Travel, Construction, Insurance, Finance, Royalties, Computer, Personal, Government.

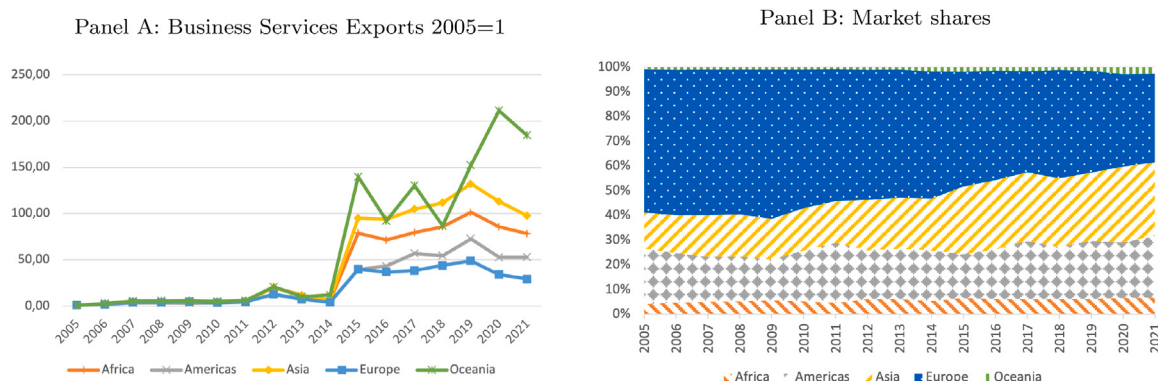


Fig. 3. Evolution of Ghanaian Business Services Exports Across Destinations.

Note: This figure shows the evolution of Ghanaian Business Services exports (panel A) and the relative market shares (Panel B) during the period 2005–2022. Data source: BaTIS.

Ghana. At the same time, we do not observe similar increases for different services in other countries. Thus, there is something specific about Ghanaian Business Services.

2.2. Destinations of the Business Services trade boom

Where are exports of Business Services directed to? Panel A of Fig. 3 shows the evolution of Ghanaian Business Services exports across destinations with 2005 normalized to one. All destinations experienced a double digit growth, however most of the increase in Ghanaian Business Services exports was accounted by Oceania, Asia and Africa, while Americas and Europe registered lower growth rates. This result suggests that the increase in Ghanaian Business Services exports is due to a general increase in the capability of exporting services of the country because it was very much spread across all destinations rather than in one only.

Panel B of Fig. 3 represents the evolution of the market share of each continent in Ghanaian Business Services exports. The main destination market is Europe, which however decreased its importance from 58% in 2005 to 36% in 2022. This happened mainly in favor of the Asian market, which increased its share from 15% to 30%, becoming the second main destination market. The third destination is represented by North and South America, which increased from 22% to 25%. The fourth biggest destination is other African countries, with an increase from 4% to 7%. The smallest one is Oceania, with a 2 percentage points increase from 1% to 3%.

3. Understanding the causes of the Ghanaian Business Services boom

In this section, we study the forces beneath the Business Services export Boom highlighted in the previous section. More specifically, we disentangle Business Services exports growth into supply, demand and bilateral determinants.

3.1. Supply, demand and bilateral determinants

Trade growth can be the result of three main forces. The first is supply: if a country increases its productivity it can export more. For example, in an Eaton and Kortum (2002) model, a higher efficiency leads to increase the chances to be the lowest cost supplier of a certain product and increases exports. This can be due for example to technological or knowledge advances. The findings of the previous section are coherent with such explanation. The second factor conducive of higher exports is demand. If foreign countries experience positive growth, this could increase their demand for imports. In the previous section we observed that the increase in Business Services exports is mostly concentrated in four countries, so this possible explanation seem to play a marginal role in our context. Finally, changes in bilateral relations can also affect trade. For example, policy changes such as trade liberalizations or sanctions, can respectively foster or hamper trade, thus, we will test also this hypothesis.

To quantify the effect of these forces, we use the complete sample of bilateral exports of Business Services provided by the 2003 version of the BaTIS dataset that covers the period 2005–2021. In particular, we use its final value of trade flows which includes the reported data plus the adjustments such as mirroring used to ensure consistency of the dataset.⁴

To analyze these data, we use a structural gravity approach in which we regress Business Services exports of country i to destination j at time t on origin-time, destination time and origin–destination fixed effects, and we control for bilateral factors that are time-variant by means of dummies that capture the existence of regional trade agreements in goods RTA_{ijt}^{Gonly} , in services RTA_{ijt}^{Sonly} , or both in goods and services, $RTA_{ijt}^{G\&S}$. These trade policy variables come from Egger and Larch (2008). This dataset

⁴ Reported data for African countries is not sufficient for carrying out the analysis.

Table 1
Determinants of business services trade.
Data sources: BaTIS, Egger and Larch (2008).

	(1) log Exp _{ijt}	(2) Exp _{ijt}	(3) log Exp _{ijt}	(4) log Exp _{ijt}
RTA ^{Gonly} _{ijt}	0.0118 (0.010)	−0.0315 (0.034)	0.012 (0.034)	0.016 (0.011)
RTA ^{Sonly} _{ijt}	0.2060 ^a (0.030)	0.093 ^c (0.055)	0.206 ^c (0.108)	0.128 ^a (0.031)
RTA ^{G&S} _{ijt}	0.0054 (0.008)	−0.0358 (0.022)	0.005 (0.021)	0.004 (0.008)
log Exp Goods _{ijt}				0.184 ^a (0.001)
FE	it, jt, ij	it, jt, ij	it, jt, ij	it, jt, ij
Observations	535,690	552,647	535,690	364,072
R-squared	0.981		0.981	0.982

Note: Robust standard errors clustered at the origin–destination level in columns 1, 2, and 4 and in the multi-way suggested by Egger and Tarlea (2015) in column 3. Estimation method: OLS for columns 1, 3 and 4; PPML for column 2. ^a p<0.01, ^b p<0.05, ^c p<0.1. Constant coefficients not shown but available upon request.

records for the period 1950–2022 whether there is an active trade agreement in either goods, services or both for any country pair. More specifically, they account for Customs Unions, Free Trade Agreements, and Partial Scope Agreements which are related to goods liberalization only; Economic Integration Agreements, which are related to services only; or the presence of both a good-related and service-related agreement together. As noted by Ariu and Ogliari (2023), service trade restrictions are non-discriminatory (i.e., they do not vary by partner country) and are absorbed by the country-year (or country-sector-year) fixed effects used in gravity settings.

Analytically, the equation that we bring to the data is the following:

$$\log \text{Exp}_{ijt} = \alpha_0 + \alpha_1 \text{RTA}_{ijt}^{\text{Gonly}} + \alpha_2 \text{RTA}_{ijt}^{\text{G\&S}} + \alpha_3 \text{RTA}_{ijt}^{\text{Sonly}} + \lambda_{it} + \delta_{jt} + \gamma_{ij} + \epsilon_{ijt} \quad (1)$$

The origin-time and destination-time fixed effects capture the effect of respectively supply and demand determinants. The bilateral fixed effect the components of trade costs that are time-invariant. The RTA dummies capture the changes in bilateral trade costs that are time-variant. More specifically, given the structure of the fixed effects, we exploit the variation arising from the entry into force of an RTA for identification (e.g., the 2004 entry into the EU of Czechia, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia). Since we are using the whole BaTIS data, results indicate the effect of these variables in general on all countries, not specifically to Ghana.

Results in Table 1 show that regional trade agreements in services have a positive and significant effect on Business Services exports. This is particularly important and reassuring, because it means that efforts to liberalize services trade had an actual impact on fostering it. Moreover, it is important that this positive effect is on Business Services, which are the most high-skilled and high-value-added among all services. This finding validates the rationale behind prioritizing services trade liberalization in regional agreements, as these efforts directly translate into measurable economic outcomes, reinforcing their role in supporting global economic integration and growth. Using PPML instead of OLS in column 2 of Table 1 leaves the results practically unchanged. Similarly, when clustering standard errors using the multi-way clustering suggested by Egger and Tarlea (2015) (column 3), or by adding trade in goods as an additional regressor (column 4), results do not change. To compare results for trade in Business Services with other types of services, we plot in Table A.1 the results for other categories of services. The results show that broadly that for different services also regional trade agreements involving only goods or goods and services can also foster their exports.

Since Ghana did not implement any trade agreement in services in the period of analysis, and the degree to which Business Services are complement to goods trade is lower than for other services such as transportation (Ariu et al., 2020), its spectacular growth in Business Services exports should not be captured by trade policy changes in services or goods.⁵ To understand the strength of each force specifically for Ghana, we plot in Fig. 4 the average origin-time and destination-time fixed effects for Ghana from 2005 to 2022.⁶ Given the absence of RTAs for Ghana, and the fact that bilateral fixed effects are constant over time we cannot analyze the role of bilateral trade costs. Coherently with the descriptive analysis, most of the action is on the origin fixed effect that captures supply-side determinants. Instead, demand factors (captured by the destination fixed effect) show to be constant over the period 2005–2022. This means that the exceptional growth of Business Services is explained by a sudden improvement in the capability of exporting Business Services, while demand remained relatively constant over the period. This result raises two questions. First, is this an isolated case or it is a common pattern for trade in Business Services? Second, what are the mechanisms behind it? In the following we try to provide an answer to these two questions.

⁵ Moreover, this prevents us to test whether trade policy changes had a differential effect for Ghana.

⁶ Fig. A.2 plots the same graph for the model estimated with PPML.

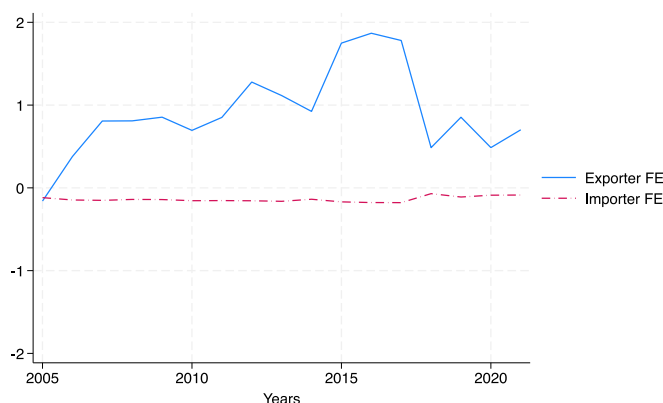


Fig. 4. Determinants of Business Services Trade in Ghana.

Note: This figure plots the average fixed effect for exporter and importer fixed effects from the estimation of Eq. (1) for Ghana.

Data source: BaTIS.

3.2. Evidence from other countries

Plotting the supply and demand factors for other African economies that experienced a substantial growth in Business Services in Fig. 5, we can appreciate that also in these cases the supply forces seems to be the main driver of Business Services export growth. In other words, these countries developed over time a superior capability to export Business Services. Therefore, for the exports of Business Services it seems that the key is to develop the knowledge to become an exporter. Indeed, Business Services are intangible and services like architectural, R&D, and consultancies do not need huge capital investments (Francois and Hoekman, 2010), but just the knowledge and the proper human capital. Moreover, many of Business Services can be traded through mode 1, i.e., without the movement of people, thus having lower trade costs than for goods.

To dig deeper into this finding, we plot in Fig. 6 the same supply and demand determinants for other African countries. Also in this case, the exporter fixed effects seem to be the key margin to understand trade dynamics for trade in Business Services. Countries such as Nigeria and Eritrea, where Business Services exports increased, the average exporter fixed effect played a positive role, while in countries which experienced a decrease also the average exporter fixed effect had a negative trend. Moreover, for all African countries demand components are rather flat. This is not something which arises mechanically. For example, for different European markets demand did play a role for the growth of trade in services (Fig. A.3 in the Appendix). Therefore, it just means that demand for African Business Services remained stable in the period of analysis. This is not too different from what we observe, for example for many Asian countries (Fig. A.4 in the Appendix).

3.3. Drivers of the supply side

In this subsection we analyze the forces underlying the incredible increase in Business Services exports described in Section 3.1. It is important to highlight that this growth is not the result of improved data reporting. First, Ghanaian exports are retrieved by mirroring import declarations of other countries, and there has not been any country that started to report these flows around the takeoff period of Business Services export growth. Second, as shown in Fig. 2, Ghanaian exports increased across the board, not only to specific destinations. Therefore, it is unlikely that the export boom is due to better reporting of import flows by a few countries. As a result, the export growth in Business Services in Ghana does not appear to be due to data artifacts.

Given the magnitude and suddenness of the increase at hand, it is unlikely that existing Ghanaian firms simultaneously experienced positive supply or demand shocks. In other words, it is difficult to imagine that the increase resulted from a sudden improvement in the export capabilities of domestic firms. This is because there were no particular reforms or policy interventions that could justify lower costs or higher productivity in exporting direct Business Services for all firms in Ghana. Similarly, the size of the increase is so large that it is unlikely that a single firm could have driven exports of Business Services up of about 4.6 billion Dollars over two years.

A key factor that might have contributed to this spectacular growth is foreign direct investments. Indeed, Ghana has experienced an important surge in FDI in the past fifteen years. Fig. 7 plots the inward and outward FDI flows. Inward FDI flows increased from an average of about 100 million Dollars in the period 2000–2005 to an average of 2,5 billion Dollars in the period 2006–2022. This increased the share of incoming foreign investments of Ghana from 1% to 5%, with respect to all African countries, and from 0 to 0,2% with respect to the world total. This surge in foreign direct investment, has attracted major multinational companies. A notable example is Twitter, which chose Ghana for its African headquarters, citing key factors that make the country an attractive business environment.⁷ According to corporate statements, two primary reasons motivated this choice of investing in Ghana. First,

⁷ You can find [here](#) the press release from Twitter.

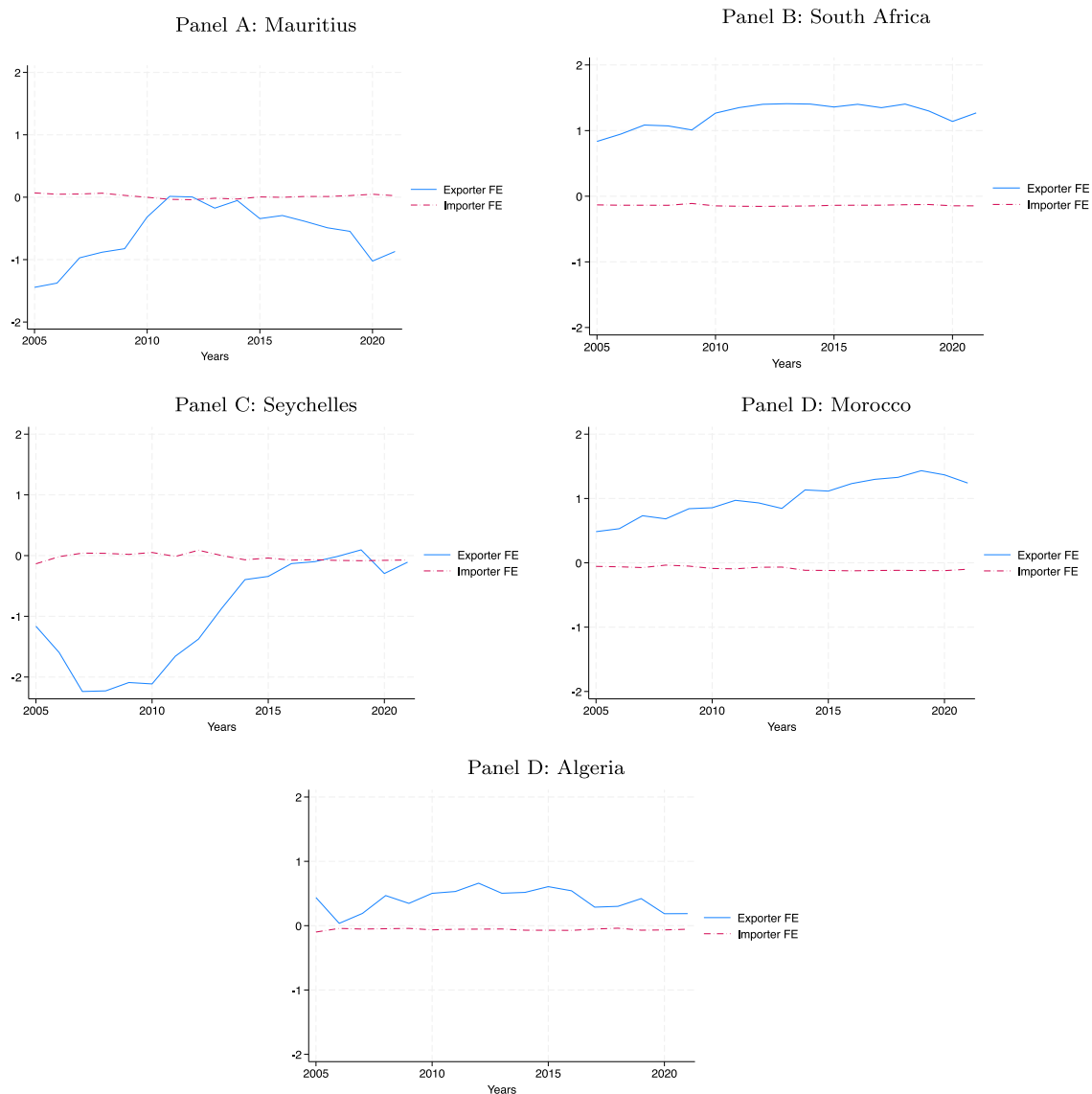


Fig. 5. Determinants of Business Services Trade in Mauritius, South Africa, Seychelles, Morocco, and Algeria.

Note: This figure plots the average fixed effect for exporter, importer fixed effects from the estimation of Eq. (1) for Mauritius (Panel A), South Africa (Panel B), and Seychelles (Panel C), Morocco (Panel D), and Algeria (Panel D).

Data source: BaTIS.

Ghana is recognized as a “champion of democracy”, with strong institutions and policies that support ICT infrastructure and digital growth. Second, hosting the Secretariat of the African Continental Free Trade Area positions Ghana as a strategic hub for trade policy initiatives across the continent.

These large multinational firms have the scale and capability to foster trade in Business Services, potentially driving sectoral growth. A key factor that adds credibility to this hypothesis is provided by the trend in outward FDI flows for Ghana present in Fig. 7. These were about zero for the period antecedent 2015 and then started growing to 220 million Dollars in 2015, reaching a peak of 587 million Dollars in 2019. A substantial share of trade in services flows through the presence of foreign affiliates. This is classified as Mode 3 trade in services in the General Agreement on Trade in Services (GATS). The evidence that companies based in Ghana began investing abroad is a signal of improved capabilities of exporting services. Additionally, the presence of foreign multinationals in Ghana might have facilitated this process given their size and international network. To test this mechanism within our gravity model framework, we would require bilateral FDI flows for the period of analysis, ideally broken by sector. Unfortunately, such data remains unavailable for many African countries, including Ghana. For this reason, we leave this for further research, in the hope such data will become available in the near future.

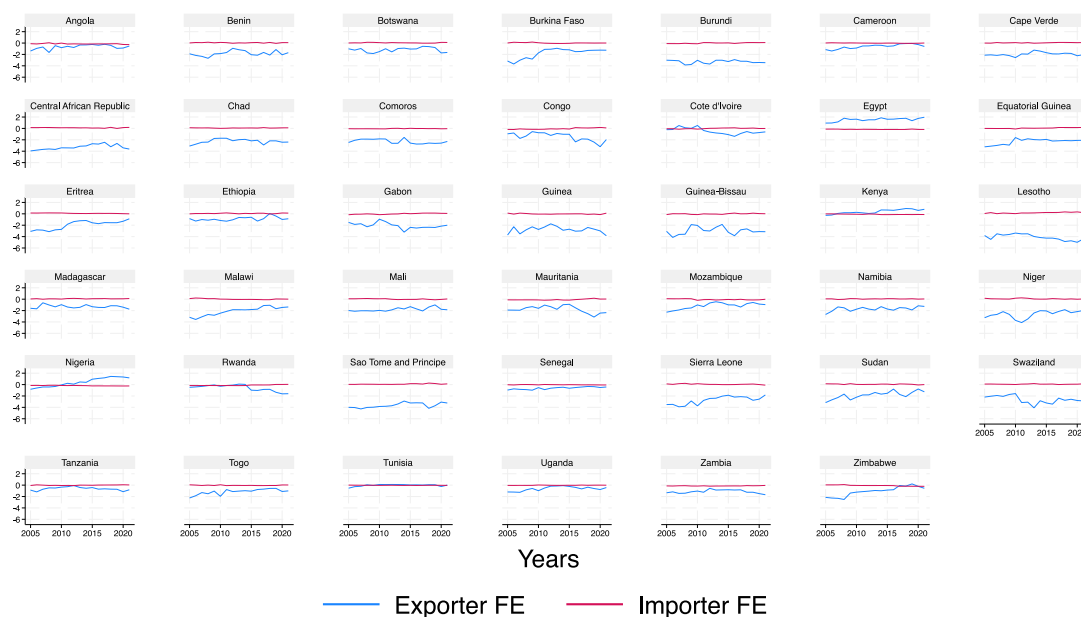


Fig. 6. Determinants of Business Services Trade in African Countries.

Note: This figure plots the average fixed effect for exporter and importer fixed effects from the estimation of Eq. (1) for some African countries. Data source: BaTIS.

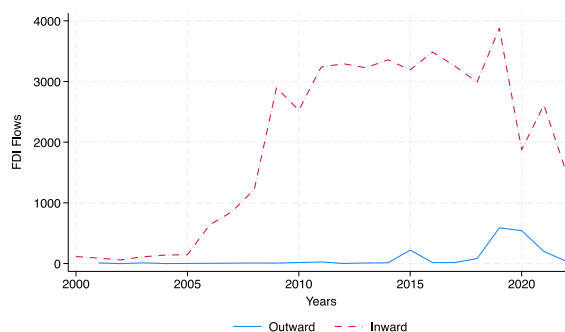


Fig. 7. Ghanaian FDI Flows. **Note:** This figure plots the annual inward and outward FDI Flows for Ghana in current US Dollars. Data source: UNCTAD.

Another potential source of trade growth linked with the entrance of foreign multinationals relates to tax havens. If these companies established a presence in Ghana to shift profits to tax havens, we should observe a disproportionate share of exports directed toward these countries. In Fig. 8, we plot the exports towards tax havens versus other destinations. From this figure, it is evident that most of the export growth was directed toward countries that are not classified as tax havens.⁸ Thus, we find no evidence that profit shifting via tax havens played a significant role in Ghana's Business Services export growth.

Was this growth conducive of development? In Fig. A.5 in the Appendix, we plot the GDP, GDP per capita and the current account balance for Ghana over the same period of analysis. While the increases in GDP and GDP per capita (panel A and B) began rising slightly before the growth in exports of Business Services, the current account improvement (panel C) coincides with the 2015 export of Business Services boom. Even if we are not able to test for a causal link and to speculate on the duration of this trend, it seems at least that the growth in trade in services is associated to improvements of some of the development indicators used by the World Bank.

⁸ We use the classification by Hines and Rice (1994), adding the Netherlands as suggested by Martin et al. (2020).

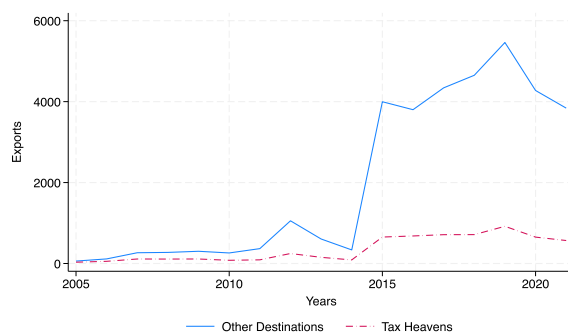


Fig. 8. Ghanaian Exports to Tax Havens and Other Destinations.

Note: This figure plots the total exports of Ghana by destination countries, grouping them into tax havens and other countries.
Data source: BaTIS.

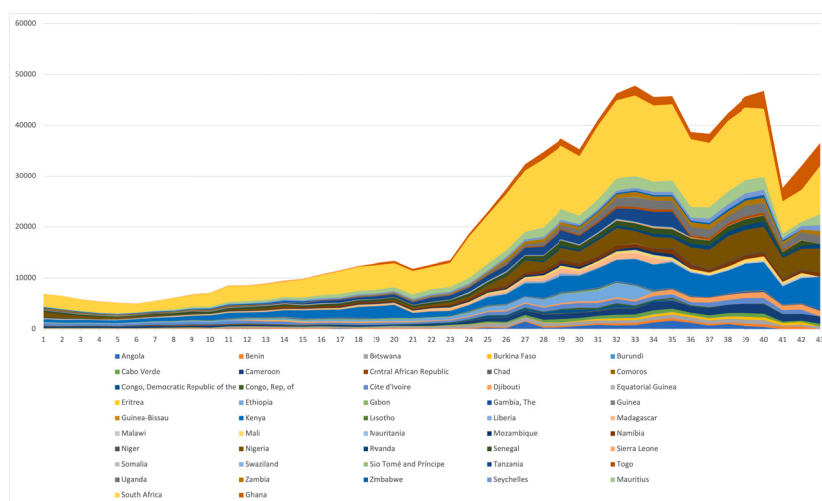


Fig. A.1. Non-Business Services Growth in Africa.

Note: This figure plots the evolution of all services except Business Services exports for African countries between 1980 and 2022.
Data source: IMF Balance of Payments Dataset.

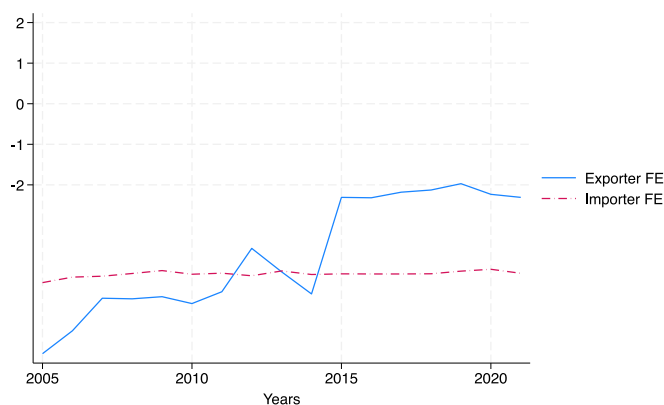


Fig. A.2. Determinants of Business Services Trade in Ghana.

Note: This figure plots the average fixed effect for exporter and importer fixed effects from the estimation of Eq. (1) for Ghana using PPML.
Data source: BaTIS.

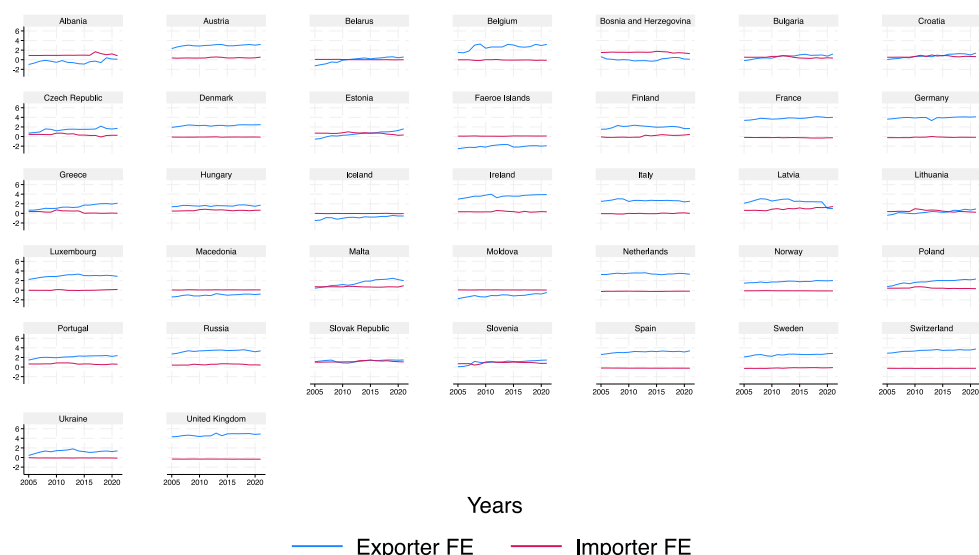


Fig. A.3. Determinants of Business Services Trade in European Countries.

Note: This figure plots the average fixed effect for exporter, importer and bilateral fixed effects from the estimation of Eq. (1) for European countries. Data source: BaTIS.

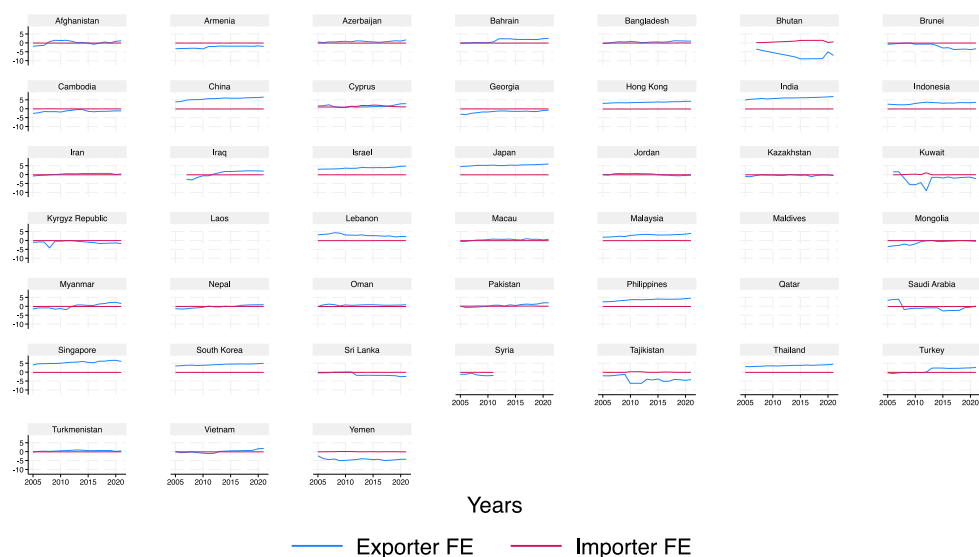


Fig. A.4. Determinants of Business Services Trade in Asian Countries.

Note: This figure plots the average fixed effect for exporter, importer and bilateral fixed effects from the estimation of Eq. (1) for Asian countries. Data source: BaTIS.

4. Conclusions

Being able to export high-value added products and services is a key factor for growth and development. So far, this activity was mostly relegated to developed countries. In this paper, we show that this is not anymore true. A number of developing countries are starting selling Business Services reaching the size of developed countries. Focusing on Ghana, which is the country that experienced the fastest and most important growth in Business Services worldwide, we observe that most of this increase is accounted by an improved capability of firms to export. Instead, demand factors did not matter. This is not only true for Ghana, but for most of African countries that experienced growth in Business Services. Given the size and the speed of the Business Services exports growth, it is unlikely that this was due to domestic firms only. Indeed, this growth was coincident with the arrival of many multinational firms from abroad. These firms had the capability and the size to export services and make the difference for a developing economy. In absence of data, we leave for future research to look for a causal link between these phenomena. Finally, these changes are associated

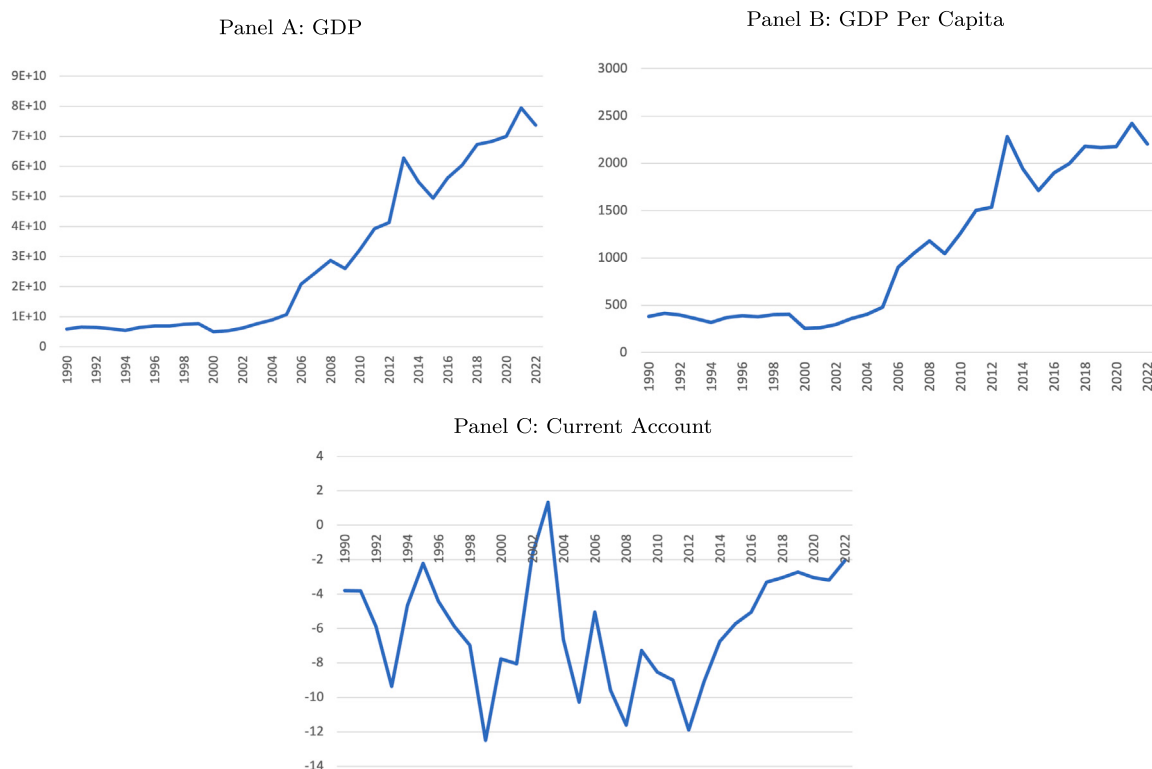


Fig. A.5. Development Indicators for Ghana.

Note: This figure plots the GDP (Panel A), GDP per capita (Panel B), and the Current Account (Panel C).

Data source: World Bank Development Indicators.

Table A.1

Determinants of different services exports.

Data sources: BaTIS, Egger and Larch (2008).

Log Exports of	(1) Transport	(2) Travel	(3) Construction	(4) Insurance	(5) Financial	(6) Computer	(7) Royalties	(8) Personal	(9) Government
RTA_{ijt}^{Gonly}	0.006 (0.010)	-0.010 (0.010)	0.029 ^b (0.014)	0.021 ^c (0.011)	0.026 ^b (0.011)	0.021 ^b (0.010)	-0.015 (0.012)	0.032 ^a (0.012)	-0.011 (0.011)
RTA_{ijt}^{Sonly}	-0.090 ^a (0.030)	0.079 ^a (0.029)	0.144 ^a (0.037)	0.169 ^a (0.032)	0.077 ^b (0.031)	-0.015 (0.029)	0.304 ^a (0.037)	-0.092 ^a (0.032)	0.026 (0.038)
$RTA_{ijt}^{G&S}$	-0.002 (0.008)	-0.001 (0.008)	0.007 (0.011)	0.035 ^a (0.008)	0.004 (0.009)	0.019 ^b (0.008)	-0.011 (0.010)	0.050 ^a (0.009)	-0.020 ^b (0.008)
Observations	577,979	579,807	290,070	430,014	424,220	544,774	289,926	329,000	475,336
R-squared	0.978	0.973	0.983	0.983	0.985	0.982	0.987	0.984	0.981

Note: Robust standard errors clustered at the origin–destination level. ^a $p < 0.01$, ^b $p < 0.05$, ^c $p < 0.1$. Constant coefficients not shown but available upon request.

with improvements in some of the World Development Indicators, thus making us optimistic on the possibility that Business Services export growth can be a source of development.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix. Additional tables and figures

See Figs. A.1–A.5 and Table A.1.

References

- Anderson, J.E., Borchert, I., Mattoo, A., Yotov, Y.V., 2018. Dark costs, missing data: Shedding some light on services trade. *Eur. Econ. Rev.* 105 (C), 193–214.
- Anderson, J.E., Milot, C.A., Yotov, Y.V., 2014. How much does geography deflect services trade? Canadian answers. *Internat. Econom. Rev.* 55, 791–818.
- Ariu, A., 2016. Services versus goods trade: a firm-level comparison. *Rev. World Econ. (Weltwirtschaftliches Archiv)* 152 (1), 19–41.
- Ariu, A., Mayneris, F., Parenti, M., 2020. One way to the top: How services boost the demand for goods. *J. Int. Econ.* 123.
- Ariu, A., Ogliari, L., 2023. Services' trade in Africa: Structure and growth. *World Econ.* 46 (11), 3345–3366.
- Borchert, I., Mattoo, A., 2010. The crisis-resilience of services trade. *Serv. Ind. J.* 30 (13), 2115–2136.
- Breinlich, H., Criscuolo, C., 2011. International trade in services: a portrait of importers and exporters. *J. Int. Econ. Elsevier* 84 (2), 188–206.
- Crinò, R., 2010. Service offshoring and white-collar employment. *Rev. Econ. Stud.* 77 (2), 595–632.
- Dincer, N.N., Tekin-Koru, A., 2016. A league of their own: services exporters – a developing country perspective. *J. Int. Trade & Econ. Dev.* 25 (5), 615–635.
- Eaton, J., Kortum, S., 2002. Technology, geography, and trade. *Econometrica* 70 (5), 1741–1779.
- Eckert, F., Ganapati, S., Walsh, C., 2019. Skilled Tradable Services: The Transformation of U.S. High-Skill Labor Markets. Opportunity and Inclusive Growth Institute Working Papers 25, Federal Reserve Bank of Minneapolis.
- Egger, P., Larch, M., 2008. Interdependent preferential trade agreement memberships: An empirical analysis. *J. Int. Econ.* 76 (2), 384–399.
- Egger, P.H., Tarlea, F., 2015. Multi-way clustering estimation of standard errors in gravity models. *Econom. Lett.* 134 (C), 144–147.
- Fortanier, F., 2018. New OECD-WTO Data Provides Coherent and Comprehensive view of Global Trade in Services. *Oecd Statistical Insights*.
- Francois, J., Hoekman, B., 2010. Services trade and policy. *J. Econ. Lit.* 48 (3), 642–692.
- Head, K., Mayer, T., Ries, J., 2009. How remote is the offshoring threat? *Eur. Econ. Rev.* 53 (4), 429–444.
- Hines, J.R., Rice, E.M., 1994. Fiscal paradise: Foreign tax havens and American business. *Q. J. Econ.* 109 (1), 149–182.
- Hoekman, B., 2018. Trade in services: Opening markets to create opportunities. In: *Industries Without Smokestacks: Industrialization in Africa Reconsidered*. Oxford University Press, ISBN: 9780198821885.
- Jensen, J.B., 2011. Global Trade in Services: Fear, Facts, and Offshoring. Peterson Institute for International Economics.
- Kimura, F., Lee, H.-H., 2006. The gravity equation in international trade in services. *Rev. World Econ. / Weltwirtschaftliches Arch.* 142 (1), 92–121.
- Loungani, P., Mishra, S., Papageorgiou, C., Wang, K., 2017. World Trade in Services : Evidence from A New Dataset. Working Paper No. 17/77, IMF.
- Martin, J., Parenti, M., Toubal, F., 2020. Corporate Tax Avoidance and Industry Concentration. Technical Report.
- Nayyar, G., Hallward-Driemeier, M., Davies, E., 2021. At Your Service?: The Promise of Services-Led Development. World Bank Publications.
- Socrates, M.K., Kaaria, J.K., Kihui, E.N., 2023. Intra-African trade in services and the AFCFTA. In: Vasiliev, A.M., Degterev, D.A., Shaw, T.M. (Eds.), *Africa and the Formation of the New System of International Relations—Vol. II: Beyond Summit Diplomacy: Cooperation with Africa in the Post-Pandemic World*. Springer International Publishing, Cham, pp. 101–120.
- UNCTAD, 2021. Global Trade Update. (Accessed: 13 March 2023).
- World Trade Organization, 2019. World Trade Report 2019: The Future of Services Trade. World Trade Organization.