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1. Introduction: International trade in services statistic

A better understanding of the critical role of trade in services in economic diversification will require good data to enable evidence-based policymaking. The ideal data on trade in services would be similar to trade in goods, containing information on the value of bilateral service flows for each of the detailed Extended Balance of Payments Services Classification (EBOPS) categories. However, services statistics are typically less developed than goods or industrial production statistics.

Why is the data on trade in services so limited? The main reason is technical difficulties in collecting data on services compared to goods. Trade in goods is observable when international trade occurs due to its physical nature: something that can be weighted, dropped, or split crosses an international border. National customs authorities collect data on trade in goods during importation. Data can also be collected at the point of exportation when goods are loaded in preparation for crossing a border. However, services are intangible and “invisible” to observers and, as such, more challenging to record.

In addition to the fundamental difficulties in quantifying services, developing countries face additional challenges in collecting and compiling detailed service trade statistics. The challenges include but are not limited to, weaknesses in statistical infrastructure, gaps in business registers, the availability of trained experts to process the data, the IT infrastructure required to handle large data volumes, and issues of trust among respondents. There may also be challenges related to publishing; the data may exist but may not be processed and formatted in ways that can be accessed.

1.1. Data availability

The availability of data on trade in services has improved since 2005, as developing and least developed economies have been publishing more detailed trade in services statistics on an annual basis. However, trade analysis and trade negotiation require more detailed and regular data than what is currently available.¹


The UN Trade and Development Statistics Service and the World Trade Organization (WTO) publish a common international trade in services data set based on official statistics. Data are also sourced from international organizations mandated to collect trade-in services data, including the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD), and Eurostat. Other sources exploited in the joint UNCTAD – WTO data set include various regional organizations, regional central banks, and specific regular country reports, such as “Article IV consultation reports” published by the IMF. When the data for an economy is not available in its principal source, other sources are pursued to estimate the missing statistics.

¹ Based on the data presented in UN Trade and Development Statistics.
² The details of international standards and data sources can be seen in Annex.
The dataset covers over 200 economies, of which 156 are developing economies and 46 are Least Developed Countries (LDCs). It is updated annually (mid-July) and quarterly, providing indicators such as values, market shares, and growth rates of international trade in services for individual economies and groups of economies. Statistics for trade by bilateral partner economies are provided annually.

1.2. UN Trade and Development Informal Working Group on Data for Services, Trade and Development Policies

The UN Trade and Development established an informal Working Group on Data for Services, Trade and Development Policies following recommendations ³ of the 9th Multi-Year Expert Meeting (MYEM) on Trade, Services and Development, held 4-6 July 2022. The objective of the Working Group is to identify services-trade data gaps, share good practice examples of data collection, identify data sources, and showcase innovative ways to use existing data. To meet the objective, the working group seek to address the following guiding questions:

1. What are the most pressing services-trade data gaps that country policymakers are facing? What data is available? What is missing?
2. Why is data availability so limited? How are trade in services statistics generally compiled?
3. What challenges are developing countries facing in services-trade data collection? What are the barriers to compiling these data?
4. What are existing initiatives by international organizations or networks to support countries in filling these gaps? Which data sources could be used as proxies for the information that is missing?
5. What are some of the innovative ways to use existing data to enhance policy?

The Working Group’s findings will feed into the UNCTAD MYEM series on Trade Services and Development, which examines the role of services trade in economic diversification. The Working Group seeks to align its work with other existing inter-agency work on data needs and relevant statistics. The Working Group has invited staff involved in such initiatives to join the discussions and seek guidance from their experiences when required.

The Working Group has met four times between June 2023 and April 2024. The working group provided a platform to share experiences and views among producers and users of statistics. These include *inter alia*: representatives from line ministries (e.g., finance, trade, economics), national statistical offices, central banks, international organizations, academia, and civil society organizations.

This report synthesizes the Working Group's findings. It is structured as follows: Chapter II discusses trade in services data for informed policymaking; Chapter III discusses service trade data gaps; Chapter IV discusses initiatives and good practices in data collection and use; and Chapter V proposes priority actions.

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³ See Report of the Multi-year Expert Meeting on Trade, Services, and Development on its ninth session. TD/B/C.1/MEM.4/27

⁴ The schedule and agenda of the working group meeting can be found in the Annex.
2. Trade in services statistics for informed policy-making

Policymakers and trade negotiators in government institutions such as trade or industry ministries require disaggregated trade services data to support economic planning and help identify diversification strategies for their exports of services products. In particular, they need data to better understand how services add value to other sectors of the economy, how trade in services impacts social inclusion, and how existing policies and regulations impact firm performance. To this end, there is a pressing need to strengthen data collection in a number of areas, including in particular:

**Improving the collection of disaggregated data on international trade in services.** Policymakers need access to data on trade in services, which can be categorized by partner, sub-sectors, mode of supply, and enterprise-type information. However, many developing countries are still facing challenges with the quality and disaggregation of collected data for policymaking. For instance, they do not systematically collect services trade data; when they do, the data are incomplete or only at the aggregated level. Additionally, it is often the central banks that collect the balance of payment data, but reporting detailed data by service category is a low priority for them as they are not the actual users of the data. Many economies struggle to compile information on their services trade with this detail, as discussed previously. This information is essential for informed decision-making. LDCs, landlocked developing countries (LLDCs), and small island developing States (SIDS) face particular constraints due to insufficient human, technological, and financial resources.

**Collecting data on multinational production activities in the host country.** Data collected from foreign-controlled affiliates that conduct sales within their host countries can be used as a source to measure bilateral service trade flows. These affiliates’ activities are not captured in the BOP, which focuses on transactions between residents and non-residents. Compiling Foreign Affiliates Statistics (FATS) provides indicators related to these affiliates’ operations. FATS aims to offer insights into Mode 3 (commercial presence), involving foreign service providers establishing a commercial presence in another member’s territory, as defined by the General Agreement on Trade in Services (GATS).

Within the European Union (EU), FATS data collection is mandatory under the European Business Statistics (EBS) regulation to ensure comprehensive coverage of economic activities. In this context, Eurostat recently published the European business statistics (EBS) compilers’ manual in 2024, serving as a practical reference for stakeholders and interest parties to ensure consistency and harmonization across EU members. The collection of FATS data is essential for gaining a deeper understanding of Mode 3, but at present, many countries do not collect FATS. Adding FATS-related questions to FDI surveys can be a rather simple approach to identifying FATS companies and collecting main FATS variables. Improvements to statistics on multinational enterprises are also being discussed as part of the 2025 update of the System of National Accounts, which will hopefully provide some practical guidance.

**Improving information on regulatory measures that hinder trade in services.** Policymakers often lack awareness of how existing regulations or lack of regulations in their economies could potentially be a barrier to service trade. Existing tools, such as the Service Trade Restrictions Index (STRI), which is part of the World Bank-WTO Services Trade Policy Database (STPD) or the Organization for Economic Cooperation and Development Service Trade Restrictiveness Index (OECD-STRI), could serve as a good starting point to identify issues for discussions on regulatory measures.
Measuring digitally deliverable services. Digital transformation has significantly changed trade in services, posing challenges to its measurement and opportunities for data collection. Many new business services occur digitally, from creative web design or video production services to the Internet of Things (IoT) and cloud computing services. Data generated from these activities could provide insight into digital trade and be valuable for policymaking. Box 1 discusses the increasing importance of services-driven green and digital transformation, which challenges policymakers to understand the role of service sectors in these transformations.

Box 1. Services-driven green and digital transformation

In the context of the green transition, some small services sectors, such as maintenance, installation, and technical testing, become essential, but very little is known about trade in such services. Another services supply chain essential for the transition is the architecture-engineering-construction (AEC) industry and related computer services that help coordinate and manage buildings and infrastructure from design to operations. This is also an under-researched supply chain where architecture and engineering are lumped together with other business services in most databases.

In the context of the digital transition, we need a better understanding of and better data on trade in cloud services. For instance, how should one think about the origin and destination of such trade? In addition, cloud services can be generic with different use cases, where the use cases can be mapped to EBOPS or other service classifications, but the cloud service may be less so. We also need better data for trade in health and education services, including artificial intelligence-enabled digital services in these sectors. Furthermore, we need to think about whether such services are indeed health or education services – or computer services or information services.

With the digital transition, knowledge-capturing products, as defined in the System of National Accounts (SNA), are the output of an increasing number of economic activities. Such products can be replicated and reproduced at close to zero marginal costs. Transactions involving such products often involve charges for the use of intellectual property rights. Data on charges for the use of intellectual property by type needs to be at least as detailed as the granularity provided by the US Bureau of Economic Analysis. However, respondents are often unable to classify their transactions by sector and mode. There is a need to align the classification with business realities on the ground. In this context, the Task Team on International Trade Statistics has been discussing the issues related to digital transition, and it is anticipated that the new MSITS (2025) will provide clearer guidance.

Improving understanding of the value added of trade in services to all economic sectors. In this context, input-output data is useful to assess the contributions of services’ intermediate inputs to all economic sectors. The OECD Trade in Value Added (TiVA) database provides input-output data from 1995 to 2020, covering 73 economies and 70 activities. TiVA informs, for example, that services are the sector providing more value-added to other economic sectors. In 2020, globally, services inputs to the final demand of other sectors amounted to 18 per cent of the value of the primary sector and 31 per cent of the value of industry. However, this information is limited as many developing countries are not yet included in TiVA. IMF is developing a Multi-Analytical Regional Input-Output model (MARIO) with data from 1990 to 2022, covering 209 economies, 178 products and 144 industries. Pursuing this granularity is important to assess more specific inter-linkages between sectors and economies.

Improving the understanding of the social dimension of trade in services. Policymakers need to better understand the impact of trade in services on labour markets, such as female employment, high/low skilled jobs, and transition to formal jobs. For example, better gender-disaggregated data can be used to develop targeted policies and programmes to support women’s participation in the services sector and in trade in services. Moreover, policies could focus on providing training and education to women in services or on addressing barriers to women’s entrepreneurship in the services sector.

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3. Services trade data gaps in developing economies

The data on trade in services collected by developing economies is generally less comprehensive than that collected by developed economies. Moreover, when data is collected, it is often incomplete. This is particularly the case regarding data disaggregated by bilateral partners and modes of supply. Only 68% of developing economies report beyond the level of 12 main Balance of Payments (BOP) items, which provides highly aggregated data, compared with 96% of high-income countries.\(^7\) This chapter discusses the challenges faced by developing economies in collecting trade in services data and what data is still missing, based on the discussions and surveys provided by the working group members.

3.1. What challenges are developing economies facing in services trade data collection?

The trade-off between ITRS and surveys

Historically, trade in services statistics were compiled by central banks using the International Transactions Reporting System (ITRS), conducted through commercial banks, as the main source of information. While ITRS can be useful for certain categories, it falls short in providing the comprehensive and detailed trade data required for modern analysis and policymaking. Much of the details of the information prescribed by the MSITS cannot be obtained simply from ITRS.

To address these limitations, many economies have transitioned the collection and compilation of trade in services statistics to national statistical offices (NSOs), progressively abandoning the ITRS in favor of a survey system. However, surveys are costly, and due to the variety of heterogeneous products in services, it is not possible to compile the related trade data by relying on one source. Therefore, various sources and methods are needed.\(^8\)

Inadequate data collection infrastructure

Many developing economies lack the infrastructure to maintain systematic and up-to-date information on resident enterprises, which is the foundation for conducting surveys and compiling quality economic statistics. The information is usually achieved through national Statistical Business Registers (SBRs). Unfortunately, in many less developed economies, SBRs lack key information\(^9\) or are simply non-existent, thus hampering or preventing effective surveying of the business population.

Lack of capacity to link micro-data and big data

Many national statistical offices supplement survey data, which is usually the first step for collecting data, with administrative sources. Administrative sources include records, files, and databases generated through the routine administration of various programs, policies, and services, such as tax records, employment records, and population registers. However, in some countries, national statistical offices may not have access to administrative sources or the capacity to use those data. Similarly, big data\(^10\) can be incorporated among many data sources used by statistical offices if accessible. But mostly big data with machine learning algorithms does not provide a complete alternative for the compilation of

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\(^{7}\) Data is based on UN Trade and Development. Count of reporting for the year 2021 in annual data, official statistics, as available in July 2023, covering 188 economies.

\(^{8}\) A full table comparing survey system and ITRS can be found in Annex Table A1.

\(^{9}\) Key information include but not limited to unique business identifiers, legal and operational status, economic activity classification, and contact details.

\(^{10}\) Big data refers to extremely large and diverse collection of structured, unstructured, and semi-structured data that continue to grow exponentially over time. For further details, see: [https://cloud.google.com/learn/what-is-big-data](https://cloud.google.com/learn/what-is-big-data)
official trade in services statistics. It is essential to carefully evaluate the use and potential coverage of big data and administrative datasets by conducting prior testing, as these may differ in each country. It should also be noted that linking the firm-level data requires substantial statistical and technological capacity. This can be a challenging undertaking for less advanced statistical systems. It may be necessary to explore simpler or ready-made and more affordable approaches, as practices for the use of administrative data are highly evolved. The statistical community continues to exchange good practices to help all countries benefit from low-hanging fruits with big data.

3.2. What trade in services data is still missing?

Granular, sector-specific information

Trade-in services figures are lacking for specific service sectors or categories. Most developing economies (140 out of 156 developing economies) make the trade-in services data available at the level of 12 main Balance of Payments (BOP) items. However, this data is often not available at a more disaggregated level. Figures directly related to those sub-items are often absent in the developing economies’ trade-in services statistics. Figure 1 shows that, in 2021, only about 90 developing economies reported sub-items at level 3. Even fewer, less than 5 economies, reported details for sub-items at level 4 or 5.

Figure 1. Item-level reports of services trade by country

Source: UN Trade and Development

Note: The count of reporting for the year 2021 in annual data and official statistics, as available in July 2023, covers 188 economies. The designations employed and the presentation of material on any map in this work do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Partner economy in trade in services

For Trade services statistics to be meaningful, they should record both sides of transactions, the exporter and the importer. However, developing economies are mostly lagging behind in terms of trade in services partner-economy statistics. Very few developing countries have official regularly published bilateral flows, as shown in Figure 2. No more than 8 developing economies publish trade-partner statistics on a regular basis, while a few others publish selected partner-country statistics with less detail or less regularity.

Figure 2. Partner data reported of services trade by country

Source: UN Trade and Development
Note: The count of reporting for the year 2021 in annual data and official statistics, as available in July 2023, covers 188 economies. The designations employed and the presentation of material on any map in this work do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Trade in service statistics based on modes of supply

Trade in services statistics by modes of supply of exports or imports are compiled mainly by developed economies. This data has been increasingly available in recent years. Reporting modes of supply can be challenging for surveyed companies due to their complex concepts. National statistical authorities may choose to use simplified allocation algorithms based on international recommendations (mostly based on evidence from developed countries) to estimate modes of supply across economies. However, the use of allocation algorithms underscores the limited availability of directly reported data on modes of supply and inevitably affects the accuracy of the data.
4. Sharing of good practices of data collection and application

Addressing data gaps in trade in services among developing countries involves key good practices that can significantly improve the completeness, timeliness, and usefulness of data for economic analysis and policymaking. This chapter synthesizes good examples from presentations during the working group meeting or written contributions provided by the experts and country representatives.

4.1. Data collection

This section contains examples of good practices provided by countries and international organizations for establishing robust data collection systems that seek to improve the accuracy and coverage of trade statistics.

4.1.1. Development and Implementation of Data Collection Systems

In a joint project with the West African Economic and Monetary Union (UEMOA) and its member states, UN Trade and Development developed the Trade-in-Services Information System (TiSSTAT). This system is a tool designed for national statistical authorities to collect data and compile statistics on international trade in services. TiSSTAT enables collecting data on bilateral trade flows and modes of supply, including mode 3, facilitating a comprehensive understanding of services trade dynamics. This system includes modules for survey management, data entry, cleaning, compilation, quality assurance, and dissemination, as shown in Figure 3. It is supported by harmonized online surveys and an e-learning course for national experts. This system is also set to be launched soon and will be adapted to the needs of the Caribbean Community (CARICOM) countries.

Figure 3. Modular IT system - TiSSTAT

The application of TiSSTAT reduces the initial cost and maintenance of the information system to a fraction compared to countries having to develop their own information systems. This can also support the UNCTAD, UNSD, and WTO e-learning courses on trade in services statistics and the support provided by UNCTAD, IMF, OECD, and WTO in measuring digital trade.

The Economic Commission for Latin America and the Caribbean (ECLAC) has engaged in the collection of trade statistics data for the Pacific Alliance (PA). In one of the studies, they analyzed the experiences of the Indicators Working Group within the Public-Private Technical Committee for the Export of Services (CPPES), established by the government of Chile, as an example of public-private
coordination in the measurement of services exports. CPPES has concentrated on several key initiatives, including the introduction of a new classification system for services and the implementation of tax incentives for registered service exporters. They also recommend a directory of service-exporting companies in order to get adequate SBRs.12

The Organization of Eastern Caribbean States (OECS) has initiated a consultancy to strengthen the capacity of business support organizations and private firms. The focus is on assessing the readiness of businesses to share data on trade in services. The OECS Secretariat is also collaborating with the Eastern Caribbean Central Bank to explore key areas such as partner countries, modes of supply, and gender-level data collection.

In Trinidad and Tobago, the Trinidad and Tobago Coalition of Services Industries (TTCSI) has implemented the National Services Exporters Survey through the National Services Portal (NSEP).13 This survey employs digital tools and integrates focus groups and case studies to gain deeper insights into the socio-economic profiles of service providers and industries.

The Dominican Republic's Ministry of Industry, Trade, and MSMEs (MICM) has initiated the First National Strategy for the Exports of Modern Services (ENESM). The ENESM comprises 76 short- and medium-term actions to be developed in collaboration between the public and private sectors. There are five working groups, including one designated by MICM for Modern Services Statistics, to improve data recollection and distribution. The working group conducts a research process by interviewing all actors involved in the production, recollection, and distribution of service data, from the Central Bank to the National Office of Property Rights.14

In Indonesia, the Statistics Office employs mobile phone data to enhance tourism statistics. This approach aims to accurately record inbound and outbound travel while avoiding overcounting from roaming records. By defining "buffer zones" near borders, Indonesia ensures that only actual border crossings are counted. This methodology enables the collection of detailed information, including the country of origin, time of arrival and departure, gate of entry and departure, length of stay, and destination countries.

The Voorburg Group on Services Statistics15 leads an effort to collect and share examples of using diverse data sources to construct output and producer price indexes for service industries. They use traditional surveys, administrative data sources, corporate datasets, trade associations, credit and bank data, and web scraping. The goal is to construct accurate output and producer price indexes for service industries. The results are expanded insights and detailed breakdowns for specific service sectors, such as the accommodation and food industry and education services.

13 See more information at https://nsep.ttcsi.org/.
14 See more Strategy in the link https://camaratic.org.do/wp-content/uploads/2021/05/Estrategia_Nacional_de_Exportacion_de_Servicios_Modernos.pdf (Spanish) and https://drive.google.com/file/d/1OOMNmFlc0Ko3iJLpAhNYysCSn-vgPNn/view?usp=sharing (English).
15 The Voorburg Group on Services Statistics was created in 1986, in response to a request from the United Nations Statistical Office (UNSO), for assistance in developing services statistics. For more information, please see https://www.voorburggroup.org/index-eng.htm.
4.1.2. Training and capacity building

UN Trade and Development, in collaboration ECLAC, has initiated a project to strengthen the capacity for evidence-based policy-making and economic resilience in CARICOM countries. This project began in 2024 and will last for three years. UN Trade and Development and ECLAC work together with regional partners such as OECS and CARICOM, providing statistical training workshops, advisory services, the implementation of TiSSTAT for interested countries, and e-learning on collecting and compiling official trade in service statistics.

Besides regional capacity building projects, UNCTAD, the United Nations Statistics Division (UNSD) and WTO also offer a regular Train for Trade e-learning course in English and French on the compilation of trade in services statistics. Furthermore, many countries have expressed interest for bilateral support to enhance their trade in services statistics, while resources for country-level engagement remain limited.

4.1.3. Recent progress on measuring digital trade

In 2023, IMF, OECD, UN Trade and Development and WTO released a second edition of the Handbook on Measuring Digital Trade to provide a consistent framework for the measurement of digital trade. This handbook provides a consistent framework to measure digital trade, offering standardized guidelines for data collection and reporting.

UN Trade and Development also published a report on measuring the value of E-commerce, which highlights the need for a wide range of complementary statistics, such as on business e-commerce uptake and the value of e-commerce transactions, to better understand the digital economy. Furthermore, efforts are underway to update existing standards and guidelines, such as the SNA and MSITS, to include the issues arising from digitization, with a planned release in 2025.

4.1.4. Hybrid approach of using administrative data with survey

The two traditional approaches—surveys or ITRS—are further complemented with other sources for gathering sufficient trade in services data to meet both national and international standards.

Administrative data offers good coverage and regular availability at a relatively low cost, while concepts typically differ from statistical target variables and require methodological adjustment. Value-Added Tax (VAT) data generated by tax authorities might serve as an example, providing comprehensive information on firms, including unique identification codes, trade-in-services values, foreign affiliation, ownership, employment, and income sources (domestic or foreign). Tax data is timely and can be leveraged to create or update SBRs, which are needed for compiling statistics like business surveys on trade in services and FATS, including Mode 4 services trade. By using tax data, operational costs can be significantly reduced, especially if surveying does not need to extend to smaller businesses.

16 See more at: TrainForTrade online course and webinars on statistics of international trade in services | UNCTAD
17 See more at: https://unctad.org/publication/handbook-measuring-digital-trade
19 See more at: https://unstats.un.org/unsd/nationalaccount/SNAUpdate/DZTT.asp
In Türkiye, the Turkish Statistical Institute (TurkStat) uses VAT data alongside its annual international trade in service statistics (ITSS) survey. This approach combines VAT data with the survey frame to estimate non-surveyed enterprises. It also provides monthly international trade statistics (ITS) estimates for businesses not covered by direct surveys and cross-checks ITS data analyses. As a result, estimations using VAT declarations account for 1 per cent of export and 2 per cent of import data, whereas surveys cover the large majority, as shown in

Table 1.

<table>
<thead>
<tr>
<th>Source</th>
<th>Export</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>National survey</td>
<td>98</td>
<td>59</td>
</tr>
<tr>
<td>Estimation – import value of freight and insurance services</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>Estimation by using VAT</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other sources and estimations</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Turkstat

In Finland, Statistics Finland employs monthly VAT data for Short-Term Business Statistics (STS) to comply with a European Union (EU) regulation. VAT dataset is used to complement direct data collection from businesses, which covers approximately 2000 of the largest enterprises across industries. By leveraging distinct VAT rates applicable to domestic, EU, and non-EU transactions, they can identify cross-border sales. The data has been used for experimental estimates of the turnover of enterprises involved in bilateral trade of goods and services.

The VAT dataset is also used by Statistics Finland to compile various regional and industry-level indicators of turnover and international trade. The office has developed a method to estimate recent data for small enterprises in the VAT dataset to match the higher timeliness of their direct survey.

4.2. Innovative use of existing data: case studies

The previous chapter outlined the gaps in trade in services data introduced by the working group members, which have hindered effective policymaking. There are ongoing research projects and initiatives that seek to fill these gaps and address these policy issues through innovative approaches using existing data. These approaches and case studies use available data and estimations to improve the accuracy of country-specific trade modes of supply, assess gender disparities in trade in services, understand the dynamics of trade and investment in services, and gain additional insights from digitally generated data into services trade activities. The following section provides examples of these approaches and their applications.\(^\text{20}\)

4.2.1. The use of firm-level data

Foreign Direct Investment and structural transformation in Africa

\(^{20}\) For details of the individual studies, please see informal working group in data for services, trade and development policies.
Hoekman et al. (2023) analyzed the impact of FDI on structural transformation at the subnational level across African countries over a 30-year span. They used geolocalized microdata derived from FDI projects sourced from FDI Markets data, a database specializing in greenfield investment. The findings showed a positive effect of FDI on structural transformation, with the entry of foreign firms into high value-added services (e.g., finance, trade-related services, research and development (R&D)) contributing to a shift in the composition of the labour force toward more highly skilled workers.

**Firm-level services trade data: who are the services exporters?**

A series of ongoing studies by the Inter-American Development Bank (IDB) integrates firm-level data by combining services trade data with administrative sources, including tax records, customs declarations, data from investment and trade promotion agencies, and social security records. Such studies require access to anonymized research datasets or can be compiled by statistical authorities who can fully ensure the statistical confidentiality of firm-level information. This approach is designed to investigate the characteristics of services exporter firms in Uruguay. Marra and Volpe (2024) found that services exporter firms are, on average, younger and smaller than goods exporters or those exporting both goods and services. The data integration process has revealed distinct profiles and characteristics of exporters, as shown in Error! Reference source not found.Error! Reference source not found.

<table>
<thead>
<tr>
<th>Exporting Status</th>
<th>Number of Employees</th>
<th>Age (years)</th>
<th>Share of Exports</th>
<th>Has Imports</th>
<th>Sell to Exporters</th>
<th>Buys from Exporters</th>
<th>Sell to MNEs</th>
<th>Buys from MNEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods and Services</td>
<td>78</td>
<td>26</td>
<td>0.20</td>
<td>0.82</td>
<td>0.82</td>
<td>0.96</td>
<td>0.81</td>
<td>0.93</td>
</tr>
<tr>
<td>Only Goods</td>
<td>104</td>
<td>23</td>
<td>0.36</td>
<td>0.74</td>
<td>0.76</td>
<td>0.95</td>
<td>0.72</td>
<td>0.90</td>
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<tr>
<td>Only Services</td>
<td>28</td>
<td>15</td>
<td>0.34</td>
<td>0.24</td>
<td>0.59</td>
<td>0.80</td>
<td>0.66</td>
<td>0.73</td>
</tr>
<tr>
<td>No Exp</td>
<td>14</td>
<td>18</td>
<td>0.00</td>
<td>0.12</td>
<td>0.48</td>
<td>0.82</td>
<td>0.46</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Source: IDB calculations based on data from Dirección General Impositiva (DGI) and Dirección Nacional de Aduanas (DNA) in 2016.

**Firms’ decision to export services by mode of supply**

In their study on post-Brexit trade, Breinlich and Magli (2024) use firm-level data from International Trade in Services (ITIS) and the Annual Inquiry into Foreign Direct Investment (AFDI) to understand how firms navigate Mode 1 (cross-border supply) and Mode 3 (commercial presence) and how they adapt to post-Brexit trade barriers. They aim to analyze the distribution of service types across different modes of supply. The study found that firms tend to increase exports through commercial presence rather than cross-border channels when faced with high trade barriers. In addition, the study highlighted a heterogeneous distribution of services by mode. This was influenced by the need for simultaneous supply and consumption, such as with health services being predominantly traded through mode 3 (commercial presence), as shown in Figure 4.
Trade disruptions and reshoring in India

Chakrabati et al. (2023) utilized novel administrative tax data from the Goods and Services Tax Network (GSTN) to track inter- and intra-state sales for plants at a monthly frequency in India. Their objective was to analyze the impact of temporary trade disruptions due to state border closures in India during COVID-19. Figure 5 shows that inter-state trade relative to intra-state trade remained 4% lower even six months after all restrictions were lifted, indicating a persistent trade collapse within the country.

Figure 5. Domestic Trade Collapse: Inter- to Intra-State Sales Ratio Growth (Year-on-Year)

Source: Chakrabati et al. (2023)
Note: Inter-state (intra-state) sales are the sum of inter-state (intra-state) sales of all regions. There are 35 states/union territories in India. The vertical line corresponds to the first national lockdown in India. The sales data comes from E-Way Bills information collected by the GSTN and primarily captures the sales in the manufacturing sector.
4.2.2. The gender-in-trade statistics

Framework for measuring gender equality in trade

In 2018, UN Trade and Development introduced a conceptual framework for measuring gender equality in trade by expanding and applying the "Evidence and Data for Gender Equality framework" to international trade (UNCTAD, 2023a). This framework uses microdata linking, customs data linked to business statistics, social statistics, and combined employer-employee datasets. The aim of the framework is to assess gendered outcomes in trade participation and the impact of trade on jobs, business opportunities, and wages for women and men. The framework assesses the preconditions for women's and men's engagement in international trade, their roles, and the impact of their participation on job and business opportunities. Six pilot countries—Kazakhstan, Georgia, Cameroon, Kenya, Senegal, and Zimbabwe—tested the framework. There is a high country demand for the continuation of UNCTAD’s work with partners to support data and policy work based on evidence derived by linking their microdata for accurate insights on gender equality in international trade to enable more gender-responsive trade policy.

In 2024, UNCTAD released a first-ever set of gender equality in trade indicators (forthcoming in UNCTADstat). The indicators derived from international databases include employment and earnings by sex in tradable sectors, trade-intensive and trade-dependent industries. These data enable, for the first time to gain insights about international trade from a gender perspective across the world.

Globally, women employees are underrepresented in tradable sectors, with only 36 per cent in developed and 39 per cent in developing economies. However, their employment in the trade of services has increased at a faster rate than men’s, highlighting the potential for trade in services to enhance women’s economic empowerment, particularly in regions like Africa, Asia, and Oceania. Women’s contribution to domestic value added in exports still lags significantly behind that of men, though it is higher in services exports compared to agriculture and industry. (Figure 6) Understanding these emerging patterns to inform effective policy actions will require further country-specific analyses to identify drivers and barriers to women’s participation in high-value-added sectors unique to each economy.

Box 2 shows good practice of country analysis for New Zealand.

Figure 6. Domestic value added in gross exports by sex and sector, 2020
Box 2. The case of New Zealand

In 2018, the Ministry of Foreign Affairs and Trade (MFAT) of New Zealand undertook an analysis utilizing official data generated by Stats NZ, the country’s official statistics agency. Two distinct methodologies were employed to conduct a gender-differentiated analysis of the impacts of trade, particularly regarding workforce participation, gender wage disparities, and representation in business leadership.

Firstly, Input-Output Tables were used to estimate the disparity in aggregate workforce participation by gender across exporting industries. These tables furnish export ratios along with survey-based official employment data. By combining export ratios with employment data specific to men and women for each industry, estimations were derived regarding the export-related employment of men and women within these industries.

In the second approach, MFAT leveraged administrative datasets, namely the Integrated Data Infrastructure (IDI) and the Longitudinal Business Database (LBD). The IDI contains individual-level data about people and households, while the LBD holds firms-level enterprise information. Through common identifiers, information pertaining to the same individual or business across databases is micro-linked. By utilizing customs data within the LBD, firms engaged in exporting and importing goods can be readily identified.

This analysis revealed a steady increase in women's participation in New Zealand’s production of goods and services for export over the past two decades, reaching 40 percent. Despite this progress, women continue to be underrepresented in export-related employment, notably in primary industries and manufacturing. The data also highlighted an overrepresentation of women in service industries catering to domestic markets, such as healthcare and education, where women constitute over 70 percent of the workforce. (Figure 7)

Figure 7. Gender share of industry export
Source: Stats NZ, MFAT calculations

Source: (UN Trade and Development, 2023a).
4.2.3. Data for assessing regulatory measures in services trade

Assessing services trade policies barriers across Africa

Baiker et al. (2023) used the World Bank – World Trade Organization Service Trade Restrictions Index (WB-WTO STRI) to assess services trade policies across 54 African economies, comparing policies across subsectors and countries. The assessment aims to improve understanding of how regulatory differences impede market entry and create barriers for international service providers. It finds that, for instance, in the transportation sector, as can be seen in Figure 8, more industrialized African economies exhibit relatively high levels of restrictiveness.

Figure 8. STRI across 54 African economies – Transport services

Source: Baiker et al., 2023

4.2.4. Country-specific use of mode of supply

The use of the C-TiSMoS dataset and re-evaluation of China’s trade in services

Zhang et al. (2024) developed the C-TiSMOS (China Trade in Services by Mode of Supply) dataset, aiming to address the challenges in assessing China’s often underestimated services trade. In constructing the dataset, they sourced missing data from the WTO-TiSMoS database, where applicable, to supplement China’s original FATS data.

Analysis of the C-TiSMOS database revealed that the total trade value of services, as well as trade balance and import data, were substantially higher compared to traditional BOP statistics. C-TiSMOS estimation, as shown in Figure 9. It also shows that mode 3 on commercial presence contributed more than 71 percent of trade in services in 2020 and grew faster than other modes between 2015 and 2019.
4.2.5. The use of digitally generated data

Data generated from the wide array of digitally deliverable services, including information held by payment card companies, could provide insight into digital trade and inform policymaking. For example, digital techniques such as web scraping can be leveraged as a new data source to enhance the granularity of international trade in services. The integration of multiple data sources (e.g., operator call records, transaction records and subscriber profiles of e-commerce platforms, and financial transactions) into traditional datasets improves timeliness, provides granular data, and facilitates adapting statistical frameworks to current realities. This approach can contribute to measuring and understanding the dynamics of digitalization in services. For instance, policymakers in countries can invest in data collecting and processing of digitally deliverable and delivered services to understand market dynamics and measure regulatory impact for effective policies.

Further, the use of big data requires legal frameworks that allow access to privately held data for statistical purposes and needs methodologies adapted to use huge volumes of unstructured data. The data are evolving rapidly, and datasets available today may not be there tomorrow, which calls for high agility from statisticians.

Specific statistical methods need to be developed for each data source to correct for its biases, especially for big data sources that do not represent fully the target population. They can be complemented by targeted surveys. These experimental methods are not a substitute for official trade in services statistics. Targeted business surveys remain the best source of official trade in services statistics. Alternative methods should be seen as complementary, future-proof testbeds that can be used in official statistics if they are well-designed and have an accurate public record.

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21 See for example a recent study from ECLAC on the use of digital technologies. https://repositorio.cepal.org/entities/publication/520ac83e-ec70-d69e-a40-7537e5138986
How can big data improve the quality of tourism statistics?

Catalano et al. (2023) explored the use of mobile phone data, electronic payment data, and web research information (Google Trends) to enhance the compilation of tourism statistics and travel items in the BOP. They collaborated with an Italian Mobile Network Operator and a Paytech company, to investigate the potential of mobile phone data in improving estimates of the number of international travelers entering the country, suggesting its integration with surveys. The results demonstrated the value of information made available by tools such as Google Trends, as a valuable complement for estimating the number of international travelers. The model of this tool captures the fluctuations and main turning points of traveler numbers to Italy from September 2012 to May 2019, as shown in Figure 10.

Figure 10. Observed (solid line) and predicted (dashed line) the number of travelers to Italy from Germany, Spain, the United Kingdom, and the United States.

Source: Catalano et al. (2023)

4.2.6. The use of privately held data

The UN Economic and Social Commission for Asia and the Pacific (ESCAP) uses FDI data collected by the Financial Times as a private data provider to overcome the limitations of traditional data from the balance of payment data. With this FDI data, ESCAP can track the activities of foreign affiliate companies and investment projects that support sustainable development goals in Asia and the Pacific region. For instance, this data provides valuable insights into the changing nature of business activities conducted and details of operations, sectoral transition, and the motivations cited by foreign investors when choosing to invest in certain locations. Against this backdrop and research, ESCAP is developing action plans for host governments to boost investments and mode 3 services trade.
5. Priorities and the way forward

The working group on data for services trade and development policies has contributed to facilitating dialogue and collaboration between data compilers, policymakers, and other data users. It provided a platform for the exchange of experiences and best practices in the field.

Moving forward, members of the working group strongly encouraged the UN Trade and Development to sustain and further develop this initiative in collaboration with relevant stakeholders. They proposed to:

1. Place a permanent agenda item on future MYEM on Trade, Services, and Development on “Data for Trade in Services and Development Policies.” This is to provide a forum for in-depth discussion on pressing issues identified under Parts 2 & 3 of the present document. Each year, the discussion could focus on specific sectors, data collection methods, or policymakers’ use of data. The focus will be on enhancing key data availability in countries by using modern technologies and drawing on international standards and collaboration, benefitting from administrative data, big data, and data collected for statistical purposes. The policy debates will focus on the potential of trade in services, including enhancing gender equality, economic diversification, and offering emerging opportunities. This could include sharing of use cases on how trade in services data can feed into more effective trade policy and diversification of economies to enhance their resilience.

2. Create a web portal to serve as a Trade in Services Knowledge Sharing Hub. This portal could provide policymakers and technical experts with a primer on trade in services data, as well as a repository showcasing innovative use of existing data. The hub could link to the Data Hub that is currently developed by UNCTAD Statistics.22

3. Mobilise resources to support critical trade in services data so that it can achieve the level of trade in goods data: Encourage donor support, especially to strengthen official statistics on trade in services, including by bilateral partner and mode of supply, and on digital trade and gender aspects. This could include support to countries wishing to start using the TiSSTAT trade in services information system to fill these data gaps and linking administrative statistics to their trade in services statistics surveys. Encourage governments to provide financial support to enhance trade in services statistics and related data for policy formulation and to strengthen legal and institutional arrangements for official statistics, including enabling the use of administrative data for statistics, and further allowing the statistical authority to access privately-held data for the common good, while strictly protecting data confidentiality. Additional resources could also enable the preparation of anonymized datasets for scientific research on trade in services.

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22 The Data Hub provides timely statistical news, including on services trade, with data-driven visualizations and analysis quarterly and annually, when new datasets are released.
References


Breilnich, H. and Magli.M., (2024). *Should we stay or should we go? Firms' adjustment to trade shocks*. Forthcoming.


International Monetary Fund (2014). *BPM6 compilation guide*. Washington D.C.

International Monetary Fund (2023). *The IMF MARIO Project Multi-Analytical Regional Input-Output Model*.


Zhang, Y., Yang H., and Jia H., (2024). *C-TisMoS dataset and reevaluation of China's trade in services*. Presented at the fourth meeting of the informal working group in data for services, trade, and development policies. Geneva, 24 April 2024. Available at: https://unctad.org/meeting/fourth-meeting-informal-working-group-data-services-trade-and-development-policies
Annex 1: International standards and data sources

International guidelines on trade in services statistics are developed jointly by representatives of the United Nations member countries and international organizations under the auspices of the United Nations Statistical Commission (UNSD). The current guidelines follow the sixth edition of the IMF Balance of Payments Manual (BPM6, 2009). The framework is being revised with the aim of including recent economic phenomena - particularly those related to digitalization - and of keeping the concepts closely aligned with the coming update of the System of National Accounts (SNA). Notably, international trade in services is embedded in the statistical classification of balance of payments (BOP). However, the detail of the services proposed by BOP is insufficient for trade analysis. Providing only the BOP elements for services trade lacks product precision and partner-country designation, which are elementary for trade negotiations and informed trade policy formulation. Besides, mode 3 services supply is not covered under the BOP concepts because mode 3 pertains to trade between residents of the same economy; hence, it does not involve international transactions.

The Manual of Statistics on International Trade in Services (MSITS) recommends further disaggregation of services categories, framing them into a more granular Extended Balance of Payments Services (EBOPS-2010) classification. Fully in line with the BOP, the MSITS offers detailed definitions of the relevant statistical framework, services categories, modes of supply, potential data sources, and succinct data collection and compilation guidance. It is accompanied by the MSITS Compilers Guide, which presents good practices and compilation solutions. The MSITS is also a useful tool for data users. It provides links to other relevant classifications (CPC, ISIC, W120 from the GATS, etc.). The manual is currently being updated by the Task Team on International Trade Statistics for adoption by the United Nations Statistical Commission in 2025.

Historically - and still often the case – trade in services statistics were compiled by central banks, using ITRS (International Transactions Reporting System, conducted through commercial banks) as the main source of information. Many economies moved the collection and compilation to national statistical offices (NSOs) and progressively abandoned the ITRS to adopt a survey system. Much of the details of the information prescribed by the MSITS cannot be obtained simply from ITRS. However, surveys are costly. Since services cover a variety of heterogeneous products, it is not possible to compile the related trade data by relying on one source. Various sources and methods are needed. Institutionally arranged coordination in data sharing among relevant national institutions is thereby important and could include central banks, NSOs, ministries of finance, commerce, transport, health, education, tourism, migration agencies, intellectual property offices, etc.

Data from ITRS may be useful in compiling statistics on international trade in services for most of the main 12 EBOPS categories: manufacturing services, repairs, and maintenance; insurance and financial services, charges for the use of intellectual property, telecommunications, computer and information services, other business services, and personal, cultural and recreational services. Other items, notably travel, transport, and government goods and services, would need to be compiled by combining the ITRS information with other relevant sources.

* Excluding FISIM, which would need to be estimated
## Annex 1 table

Table A1. Comparison of Survey-Based Methods and ITRS for Trade in Services Statistics

<table>
<thead>
<tr>
<th>Survey</th>
<th>ITRS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages:</strong></td>
<td><strong>Disadvantages:</strong></td>
</tr>
<tr>
<td>- Better quality of information (direct contact)</td>
<td>- Surveys are costly</td>
</tr>
<tr>
<td>- Detailed data can be collected:</td>
<td>- Important subsequent revisions</td>
</tr>
<tr>
<td>- EBOPS detail</td>
<td>- The necessity to keep the burden on small respondents</td>
</tr>
<tr>
<td>- Partner information</td>
<td>- Respondents may need to be trained</td>
</tr>
<tr>
<td>- Related/unrelated trade differentiation</td>
<td>- Skill needed in the originating institutions</td>
</tr>
<tr>
<td>- Modes of supply</td>
<td></td>
</tr>
<tr>
<td>- Captures entire transactions (regardless of the settlement options)</td>
<td></td>
</tr>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages:</strong></td>
</tr>
<tr>
<td>- Precision resulting from many individual transactions</td>
<td>- May be difficult to handle: a large volume of data</td>
</tr>
<tr>
<td>- Timely, can be used for short periods of reporting (monthly)</td>
<td>- Transactions proxied by settlements</td>
</tr>
<tr>
<td>- Bank reports are comprehensive</td>
<td>- Inter-company transactions with netting practices</td>
</tr>
<tr>
<td>- Stability of respondents</td>
<td>- EBOPS detail and Modes of Supply cannot be captured</td>
</tr>
<tr>
<td>- Codes assigned directly to (main) EBOPS items</td>
<td>- Geographical breakdown may be miss-assigned</td>
</tr>
<tr>
<td>- Less costly than surveys</td>
<td></td>
</tr>
</tbody>
</table>

Source: UN Trade and Development
Annex 2: Schedule and agenda of the working group meeting

The following table presents the schedule and agenda of the meetings. In each meeting, the agenda is based on requests and consultations with experts and country representatives, ensuring the discussions are dynamic and relevant to current priorities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
<th>Agenda</th>
<th>Link to webpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>First WG Meeting</td>
<td>6 Jun 2023</td>
<td>Identify data needs &amp; good practices in data supply and showcase innovative approaches for data use.</td>
<td><a href="https://unctad.org/meeting/first-meeting-informal-working-group-data-services-trade-and-development-policies">https://unctad.org/meeting/first-meeting-informal-working-group-data-services-trade-and-development-policies</a></td>
</tr>
<tr>
<td>Second WG Meeting</td>
<td>11 Jul 2023</td>
<td>Challenges in policymaking due to limited trade in services data and explored using existing data sources.</td>
<td><a href="https://unctad.org/meeting/second-meeting-informal-working-group-data-services-trade-and-development-policies">https://unctad.org/meeting/second-meeting-informal-working-group-data-services-trade-and-development-policies</a></td>
</tr>
<tr>
<td>Third WG Meeting</td>
<td>20 Nov 2023</td>
<td>Using alternative data sources to measure services trade, including administrative data such as VAT and price statistics.</td>
<td><a href="https://unctad.org/meeting/third-meeting-informal-working-group-data-services-trade-and-development-policies">https://unctad.org/meeting/third-meeting-informal-working-group-data-services-trade-and-development-policies</a></td>
</tr>
<tr>
<td>Fourth WG Meeting</td>
<td>24 Apr 2024</td>
<td>Sharing best practices and experiences in data collection and use for trade in services through commercial presence (Mode 3).</td>
<td><a href="https://unctad.org/meeting/fourth-meeting-informal-working-group-data-services-trade-and-development-policies">https://unctad.org/meeting/fourth-meeting-informal-working-group-data-services-trade-and-development-policies</a></td>
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