



Report of the informal working group on data for services, trade and development policies



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United Nations publication issued by the
United Nations Conference on Trade and Development

Acknowledgments

This report was prepared by the UN Trade and Development secretariat. It synthesizes findings of an informal working group on data for services, trade and development policies, which met four times between June 2023 and April 2024.

The report was prepared by Dong Wu (team leader), Zenathan Hasannudin, Bruno Antunes, Lucas Godel and Shuyang Shi, with inputs from Nour Barnat, Sanja Blazevic, and Petra Kynclova, under the direction of Miho Shirotori and Anu Peltola, and the overall guidance of Luz Maria de la Mora, Director of the Division on International Trade and Commodities. The team thanks Katalin Bokor and Graham Mott for their substantive comments.

The report synthesizes the findings of an informal working group on data for services, trade and development policies, which met four times between June 2023 and April 2024. UN Trade and Development appreciates contributions from the following experts and members of the Working Group: Jorge Arbache, Ingo Borchert, Hubert Escaith, Bernard Hoekman, Patrick Kabanda, Martina Magli, Mia Mikic, Johan Mulder, Hildegunn Nordas, Gloria Pasadilla, Pierre Sauve, Carlotta Schuster, Ben Shepherd, Anirudh Shingal, Patrik Strom, Christian Volpe, and Yan Zhang.

The desktop publishing was undertaken by Laura Moresino-Borini.





Abbreviations and acronyms

| | |
|------------------|--|
| AEC | architecture-engineering-construction |
| BOP | balance of payments |
| BEA | United States Bureau of Economic Analysis |
| BPM6 | 6th edition of the balance of payments manual |
| C-TISMoS | China Trade in Services by Mode of Supply |
| CARICOM | Caribbean Community |
| CPC | central product classification |
| CPPEs | Public-Private Technical Committee for the Export of Services |
| EBOPS | extended balance of payments services classification |
| EBS | European business statistics |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| ENESM | First National Strategy for the Exports of Modern Services |
| ESCAP | Economic and Social Commission for Asia and the Pacific |
| FATS | foreign affiliates statistics |
| FDI | foreign direct investment |
| FISIM | financial intermediation services indirectly measured |
| GATS | General Agreement on Trade in Services |
| GSTN | Goods and Services Tax Network |
| IDB | Inter-American Development Bank |
| IMF | International Monetary Fund |
| IoT | Internet of Things |
| ISIC | international standard industrial classification of all economic activities |
| ITRS | international transactions reporting system |
| LDC | least developed country |
| LLDC | landlocked developing country |
| MARIO | Multi-Analytical Regional Input-Output model |
| MFAT | Ministry of Foreign Affairs and Trade |
| MICM | Ministry of Industry, Trade, and MSMEs |
| MSITS | Manual on Statistics of the International Trade in Services |
| MYEM | Multi-Year Expert Meeting |
| NSEP | National Services Exporters Portal |
| NSO | national statistical office |
| OECD | Organisation for Economic Co-operation and Development |
| OECD-STRI | Organisation for Economic Co-operation and Development Service Trade Restrictiveness Index |
| OECS | Organization of Eastern Caribbean States |
| SBR | statistical business register |
| SIDS | small island developing States |



| | |
|--------------------|--|
| SNA | system of national accounts |
| STPD | Services Trade Policy Database |
| TiSMoS | Trade in Services by Mode of Supply |
| TiSSTAT | Trade-in-Services Information System |
| TiVA | Trade in Value Added |
| TTCSI | Trinidad and Tobago Coalition of Services Industries |
| TT-ITS | Task Team on International Trade Statistics |
| TurkStat | Turkish Statistical Institute |
| UEMOA | West African Economic and Monetary Union |
| UNSD | United Nations Statistics Division |
| VAT | value-added tax |
| WB-WTO-STRI | World Bank - World Trade Organization Service Trade Restrictions Index |
| WTO | World Trade Organization |



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Introduction

This report was prepared by the UN Trade and Development secretariat. It synthesizes findings of an informal working group on data for services, trade and development policies, which met four times between June 2023 and April 2024.

It is structured as follows: Chapter I provides an overview of the informal working group. Chapter II presents pressing data needs for policy making; Chapter III identifies data gaps in developing countries; Chapter IV presents initiatives and good practices in data collection and use; and Chapter V concludes with proposed priority actions.





Chapter I.

International trade in services statistics



International trade in services statistics

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 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. International trade in goods is observable due to its physical nature: goods are something that can be weighted or otherwise measured when crossing 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 these intrinsic difficulties in quantifying services, several developing countries face additional challenges in collecting and compiling detailed service trade statistics. These challenges include but are not limited to, weaknesses in statistical infrastructure, gaps in business registers, insufficient availability of trained experts to process the data, insufficient information technology infrastructure required to handle large data volumes, and issues of trust among respondents. These additional challenges can also relate to publishing; the data may exist

but may not be processed and formatted in ways that allow or facilitate access.

A. 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 trade-in services statistics are based on the concepts from the 6th edition of the Balance of Payments Manual (BPM6, IMF, 2009). These statistics follow the extended balance of payments services classification (EBOPS-2010), as described in the “Manual on Statistics of the International Trade in Services” (MSITS) (United Nations et al., 2012).² The balance of payments (BOP) covers differently the several modes of supply of trade in services, as defined in the General Agreement on Trade in Services (GATS), namely Mode 1 (cross-border supply) and Mode 2 (consumption abroad), and to some extent, Mode 4 (movement of natural persons). It does not cover Mode 3 (commercial presence).

Trade policy requires detailed and regular data

Trade in services data are limited due to the intangibility of services and, mainly in developing countries, due to challenges in statistical and information technology infrastructure and in the availability of experts

¹ Based on the data available in UN Trade and Development Statistics.

² The details of international standards and data sources can be seen in annex 1 of this report.



The UN Trade and Development established an informal working group to identify services-trade data gaps, share good practice examples of data collection, identify data sources and showcase innovative ways to use existing data

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 Organisation for Economic Co-operation and Development (OECD), and Eurostat. Other sources used in the joint –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.

The data set 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, provides 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.

B. 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 a recommendation³ of the 9th session of the 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:

- What are the most pressing services-trade data gaps that country policymakers are facing? What data are available? What is missing? Why is data availability so limited? How are trade in services statistics generally compiled?
- What challenges are developing countries facing in services-trade data collection? What are the barriers to compiling these data?
- 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?
- What are some of the innovative ways to use existing data to enhance policy?

The working group's findings will feed into the UN Trade and Development 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 2024.⁴ 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.

³ See UNCTAD (2022). *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 meetings can be found in annex 2 of this report.



Chapter II.

Trade in services statistics for informed policymaking



Trade in services statistics for informed policymaking

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 of trade in services supply (commercial presence), involving foreign service providers establishing a commercial presence in another member's territory, as defined by the GATS.

FATS data collection is mandatory in the European Union, under the European business statistics (EBS) regulation, to ensure comprehensive coverage of economic activities. In this context, Eurostat recently published the EBS compilers' manual in 2024. This manual serves as a practical reference for stakeholders and interest parties to ensure consistency and harmonization across European Union 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 foreign direct



Policymakers need improved data collection

to have data disaggregated on trade in services, FATS variables, regulatory measures that impact trade in services, digital trade in services, value-added of services in all economic sectors, and social impact of trade in services

investment (FDI) surveys can be a simple approach in some cases 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 (SNA).

Improving information on regulatory measures that impact 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” (WB-WTO-STRI), which is part of the World Bank-WTO “Services Trade Policy Database” (STPD) or the OECD 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 illustrates the importance of services for the green and digital transformations. This importance challenges policymakers to understand the role of service sectors in these transformations.

Box 1.

Illustrations of services contributions for green and digital transformations

Some services activities are essential to the green transition. These activities include maintenance, installation and technical testing services. However, policymakers do not have enough information about trade in such services. The architecture-engineering-construction (AEC) services industry is another supply chain essential for energy transition. The related computer services are also part of that supply chain. These services help coordinate and manage buildings and infrastructure from design to operations. This supply chain is also under researched, with architecture and engineering lumped together with other business services in most databases.

In the context of the digital transition, a better understanding of, and better data on trade in cloud services is needed. 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.

Also needed are 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 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 United States Bureau of Economic Analysis (BEA). 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 (TT-ITS) has been discussing the issues related to digital transition, and it is anticipated that the new MSITS (2025) will provide clearer guidance.

Source: Contribution from Council on Economic Policies.

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.⁵ 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.⁶

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, policymakers can use better gender-disaggregated data to develop targeted policies and programmes to support and improve 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.

⁵ TiVA database, accessed in July 2024. See: <https://data-explorer.oecd.org/>

⁶ See IMF (2023). *The IMF MARIO Project Multi-Analytical Regional Input-Output Model*.





Chapter III.

Services trade data gaps in developing economies



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 per cent of developing economies report beyond the level of 12 main BOP items, which provides highly aggregated data, compared with 96 per cent of high-income countries.⁷ This chapter discusses the challenges faced by developing economies in collecting trade in services data and what data are still missing, based on the discussions and surveys provided by the working group members.

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

1. The trade-off between international transactions reporting system 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 favour 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

2. 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 developing economies, SBRs lack key information⁹ or are simply non-existent, thus hampering or preventing effective surveying of the business population.

Economies are transitioning from collecting data from ITRS to a more comprehensive system based on surveys complemented by administrative sources or firm-level data, involving challenges related to business registers and to the statistical, technological and legal capacity to use micro-data and big-data

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 international transactions reporting system (ITRS) can be found in annex 1 of this report.

⁹ Key information includes but not limited to unique business identifiers, legal and operational status, economic activity classification, and contact details.



Trade in services data in many developing economies still lacks information on disaggregated sectors, partner economy and mode of supply

3. Lack of capacity to link micro-data and big data

Many NSOs 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 programmes, policies, and services, such as tax records, employment records, and population registers. However, in some countries, NSOs may not have access to administrative sources or the capacity to use those data. Similarly, big data¹⁰ can be incorporated among many data sources used by statistical offices, if accessible. But most big data with machine learning algorithms does not provide a complete alternative for the compilation of official trade in services data. 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.

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.

B. What trade in services data is still missing?

1. 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 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 data. Only about 90 developing economies reported sub-items at level 3 in 2021. Even fewer, less than 5 economies, reported details for sub-items at level 4 or 5.

2. 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 in terms of trade in services partner-economy data. Very few developing countries have official regularly published bilateral flows. No more than 8 developing economies publish trade-partner data on a regular basis, while a few others publish selected partner-country data with less detail or less regularity.

3. 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.

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>





Chapter IV.

Sharing of good practices of data collection and application



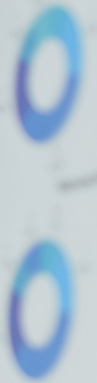
Monthly Goal

ACHIEVE 10% This month's goal is to increase the number of views and engagement on the company's social media channels. Focus on creating high-quality content and reaching out to influencers to boost visibility.

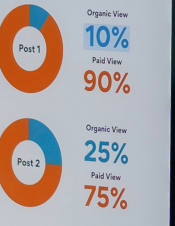


Target Audience

| Target Audience | Percentage |
|-----------------|------------|
| Millennials | 40% |
| Generation Z | 30% |
| Generation X | 20% |
| Baby Boomers | 10% |



Engagement Cost per View



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 informal working group meeting or written contributions provided by the experts and country representatives.

A. Data collection

This chapter 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.

1. Development and Implementation of data collection systems

The UN Trade and Development developed the Trade-in-Services Information System (TiSSTAT), in a joint project with the West African Economic and Monetary Union (UEMOA) and its

member States. 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 1. It is supported by harmonized online surveys and an e-learning course for national experts. This system will be adapted to the needs of the Caribbean Community (CARICOM) countries.

Trade in services data collection systems seek to improve accuracy and coverage of trade in services data, and include the UN Trade and Development TiSSTAT

Figure 1.
Modular internet technology system: Trade-in-Services Information System



Source: UN Trade and Development 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 support the UN Trade and Development, United Nations Statistics Division (UNSD), and WTO e-learning courses on trade in services statistics. Applying TiSSTAT can also help the support provided by the UN Trade and Development, IMF, OECD, and WTO in measuring digital trade.

The United Nations Economic Commission for Latin America and the Caribbean (ECLAC) has collected trade statistics data for the Pacific Alliance. ECLAC analyzed the experiences of the “Indicators Working Group” within the “Public-Private Technical Committee for the Export of Services” (CPPES). This committee was established by the government of **Chile** and is 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 to get adequate SBRs.¹¹

The Organization of Eastern Caribbean States (OECS) Commission 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 Commission is also collaborating with the Eastern Caribbean Central Bank to explore how to collect data on partner countries, modes of supply, and gender.

In **Trinidad and Tobago**, the Trinidad and Tobago Coalition of Services Industries (TTCSI) has implemented the “National Services Exporters Survey” through the “National Services Exporters Portal” (NSEP).¹² 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) initiated the “First National Strategy for the Exports of Modern Services” (ENESM). The ENESM comprises 76 short- and medium-term actions to be developed collaboratively between the public and private sectors. There are five working groups, including one designated by MICM for modern services statistics, to improve data collection and distribution. The working group conducts a research process by interviewing all actors involved in the production, collection, and distribution of service data, from the Central Bank to the National Office of Property Rights.¹³

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, and length of stay.

The **Voorburg Group on Services Statistics**¹⁴ leads an effort to collect and share examples of using diverse data sources to construct output and producer

¹¹ See Cáceres L (2023a). *El Comité Técnico Público-Privado de Exportación de Servicios de Chile: trayectoria y aprendizajes para la medición de las exportaciones de servicios*. Project document LC/TS.2023/47. Santiago, ECLAC and Cáceres L (2023b). *Estadísticas del comercio internacional de servicios en los países de la Alianza del Pacífico: diagnóstico preliminar y propuestas de perfeccionamiento*. Project document LC/TS.2023/86. Santiago, ECLAC.

¹² See more at: <https://nsep.ttcsi.org/>.

¹³ See MICM (2021). *Estrategia nacional de exportación de servicios modernos* (Spanish) and (English)

¹⁴ The Voorburg Group on Services Statistics was created in 1986, in response to a request from the United Nations Statistical Division (at the time called United Nations Statistical Office), for assistance in developing services statistics. For more information, see: <https://www.voorburggroup.org/index-eng.htm>



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.

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 CARICOM and the OECS Commission, providing statistical training workshops, advisory services, the implementation of TiSSTAT for interested countries, and e-learning on collecting and compiling official trade in service data.

Besides regional capacity building projects, UN Trade and Development, 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.¹⁵

Furthermore, many countries have expressed interest for bilateral support to enhance their trade in services statistics, while resources for country-level engagement remain limited.

3. Recent progress on measuring digital trade

In 2023, IMF, OECD, United Nations and WTO released a second edition of the “Handbook on Measuring Digital Trade”.¹⁶ 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. This report 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.¹⁷ Furthermore, efforts are underway to update existing standards and guidelines, such as the SNA and MSITS, to include the issues arising from digitization. This update has a planned release in 2025.¹⁸

4. Hybrid approach of using administrative data with survey

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

UN Trade and Development collaborates with regional partners

to provide statistical training, advisory services and support to implementing TiSSTAT in several Caribbean countries

Trade in services data benefits from progress in measuring digital trade.

UN Trade and Development published a report on measuring e-commerce and, together with others, released the second edition of the Handbook on Measuring Digital Trade

¹⁵ See more at: [TrainForTrade online course and webinars on statistics of international trade in services](#). UNCTAD.

¹⁶ See IMF, OECD, United Nations, WTO (2023). *Handbook on Measuring Digital Trade Second Edition*. UNCTAD/DTL/ECDE/2023/8.

¹⁷ See UN Trade and Development (2023). *Measuring the value of e-commerce*. UNCTAD/DTL/ECDE/2023/3. Geneva and Un Trade and Development (2024). *Business e-commerce sales and the role of online platforms*. *UNCTAD Technical notes on ICT for development*. No. 1. UNCTAD/DTL/ECDE/2024/3. Geneva.

¹⁸ See more at: [unstats.un.org](#)



Surveys and ITRS can be complemented with administrative data, such as VAT data, to improve coverage and frequency

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 on trade in services and FATS, including on 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.

In **Türkiye**, the Turkish Statistical Institute (TurkStat) uses VAT data alongside its annual international trade in service statistics survey. This approach combines VAT data with the survey frame to estimate non-surveyed enterprises. It also provides monthly international trade statistics estimates for businesses not covered by direct surveys and cross-checks data analyses. As a result, estimations using VAT declarations account for 1 per cent of export data and 2 per cent of import data, whereas surveys cover the large majority, as shown in Table 1.

In **Finland**, Statistics Finland employs monthly VAT data for short-term business statistics to comply with a European Union regulation. VAT dataset is used to

complement direct data collection from businesses, which covers approximately 2000 of the largest enterprises across industries. Statistics Finland can identify cross-border sales by leveraging distinct VAT rates applicable to domestic, European Union, and non-European Union transactions. Furthermore, Statistics Finland uses the data for experimental estimates of the turnover of enterprises involved in bilateral trade of goods and services.

Statistics Finland also uses the VAT dataset 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.

B. Innovative use of existing data: Case studies

The previous section outlined the gaps in trade in services data introduced by the members of the informal working group on data for services, trade and development policies. These gaps have hindered effective policymaking. There are ongoing research projects and initiatives that seek to fill these gaps and address 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 data by modes of supply, assess gender disparities in trade in services, understand

Table 1.
Source of international trade in services statistics

| Source | Export | Import |
|--|--------|--------|
| National survey | 98 | 59 |
| Estimation: Import value of freight and insurance services | 0 | 31 |
| Estimation by using value added tax | 1 | 2 |
| Other sources and estimations | 0 | 7 |
| Total | 100 | 100 |

Source: Turkstat.

the dynamics of trade and investment in services, and gain additional insights from digitally generated data into services trade activities. This section provides examples of these approaches and their applications.¹⁹

1. The use of firm-level data

Foreign direct investment and structural transformation in Africa

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 delocalized 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. These IDB 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. For example, services exporter firms are, on average, younger and smaller than goods exporters or than those exporting both goods and services. The data integration process has revealed distinct profiles and characteristics of exporters, as shown in Table 2.

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 the "Inquiry on Trade in Services" and the "Annual Inquiry into Foreign Direct Investment". This is to understand how firms navigate Mode 1 (cross-border supply) and Mode 3 (commercial presence), and how they adapt to post-Brexit trade barriers. The study found that firms tend to increase exports through commercial presence rather than cross-border channels when

Innovative approaches to use existing data can address trade in services data gaps and include combining services trade data with administrative sources

Table 2.
The case of Uruguay

| | Number of employees | Age (years) | Share of exports | Has imports | Sell to exporters | Buys from exporters | Sell to MNEs* | Buys from MNEs* |
|---------------------------|---------------------|-------------|------------------|-------------|-------------------|---------------------|---------------|-----------------|
| Exporting status | Mean | | | | | | | |
| Goods and services | 78 | 26 | 0.20 | 0.82 | 0.82 | 0.96 | 0.81 | 0.93 |
| Only goods | 104 | 23 | 0.36 | 0.74 | 0.76 | 0.95 | 0.72 | 0.90 |
| Only services | 28 | 15 | 0.34 | 0.24 | 0.59 | 0.80 | 0.66 | 0.73 |
| No exports | 14 | 18 | 0.00 | 0.12 | 0.48 | 0.82 | 0.46 | 0.70 |

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

* Multinational enterprises

¹⁹ For details of the individual studies, please see: [Informal working group in data for services, trade and development policies](#).

faced with high trade barriers. In addition, the study highlighted a heterogeneous distribution of services by mode of supply. For example, intellectual property is exclusively supplied via cross-border while health and educational services are supplied through all modes of supply.

Trade disruptions and reshoring in India

Chakrabati et al. (2021) utilized novel administrative tax data from the Goods and Services Tax Network (GSTN) to track inter- and intra-state sales for plants in India, at a monthly frequency. Their objective was to analyze the impact of temporary trade disruptions due to state border closures in India during COVID-19. Inter-state trade remained 4 per cent lower than intra-state trade, even six months after all restrictions were lifted, indicating a persistent trade collapse within the country.

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 (UN Trade and Development, 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 –Cameroon, Georgia, Kazakhstan, Kenya, Senegal, and Zimbabwe– tested the framework. UN Trade and Development receives a high-country demand to continue working with partners to support data and policy work. This work is based on evidence derived by linking their microdata for accurate insights on gender equality in international trade for more gender-responsive trade policy.

In 2024, UN Trade and Development 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 2). 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.

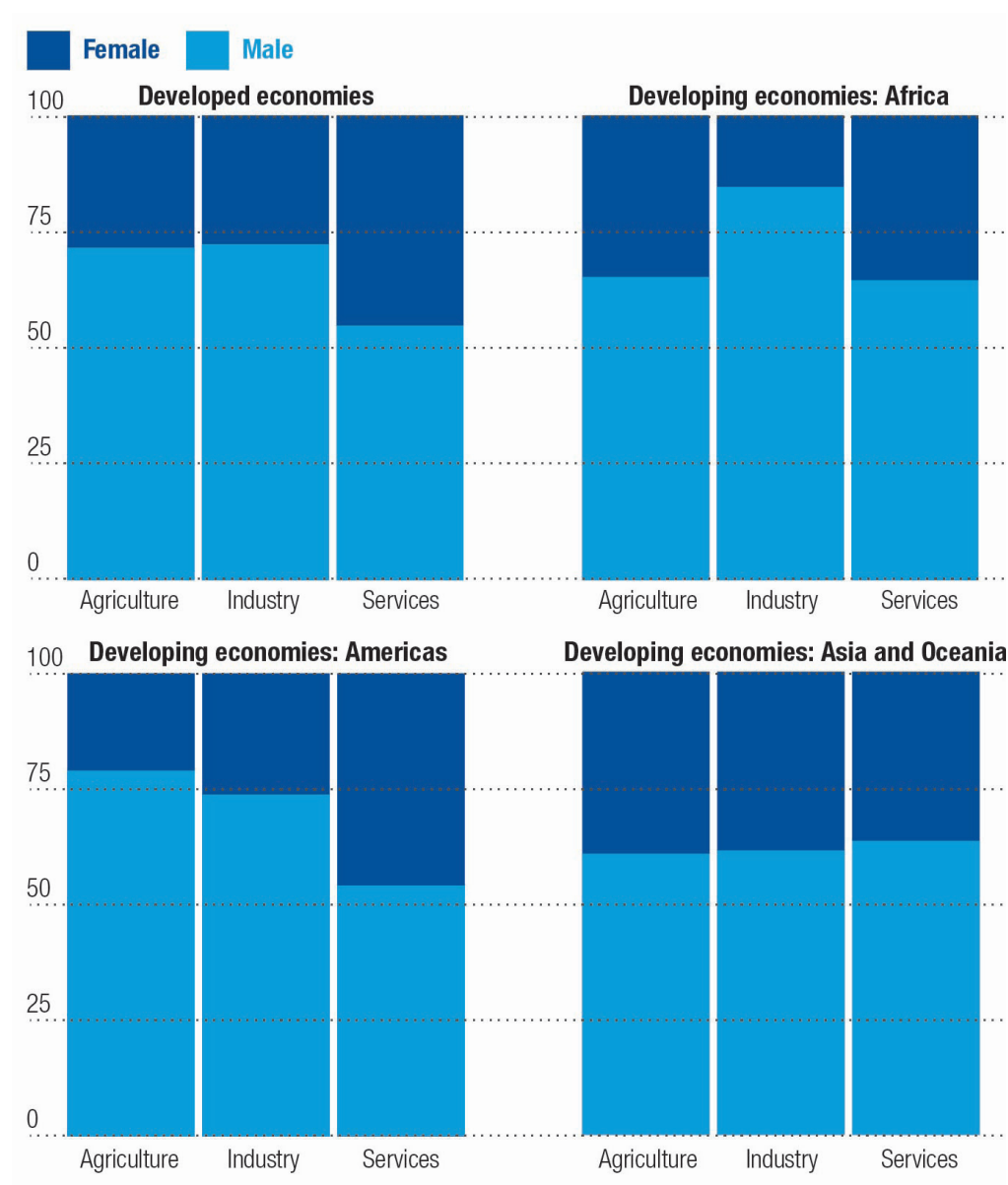
The UN Trade and Development used microdata to assess the gendered impact of trade, including trade in services, on jobs, business opportunities and wages



Figure 2.

Domestic value added in gross exports by sex and sector, 2020

Percentage



Source: UNCTAD calculation based on the OECD TiVA database.

Note: Aggregated figures are based on data on employment and trade in value-added for 76 economies. This analysis assumes that there are no differences in gender distribution between exporting and non-exporting firms. The proportions of male and female contributions to domestic value added are calculated assuming homogeneity in labour intensity, skills, etc., thereby stating that women represent a comparable share of value added to their proportion in employment.

Box 2.

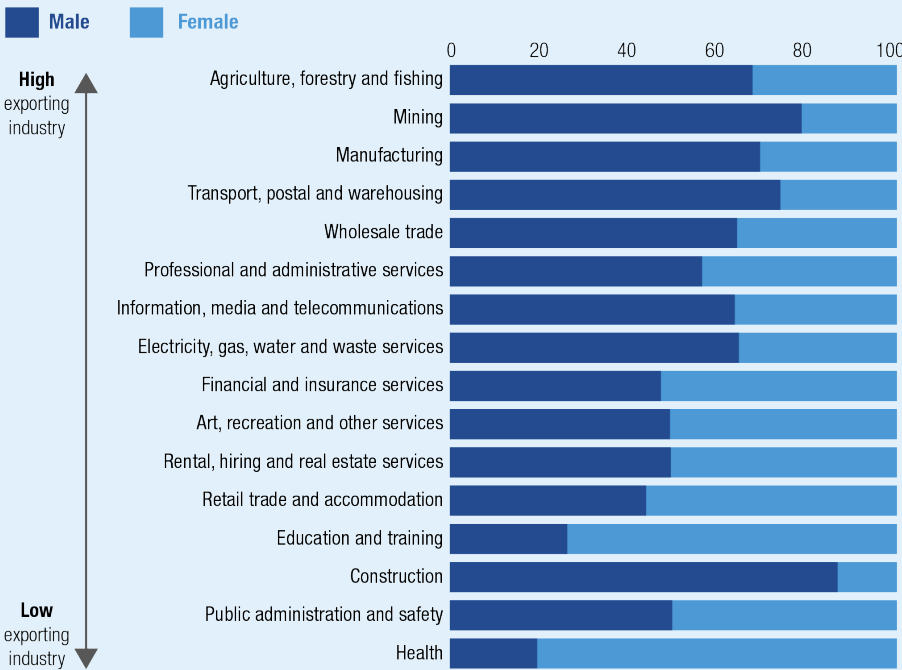
The case of New Zealand

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.

In the second approach, MFAT leveraged administrative datasets, namely the “Integrated Data Infrastructure” and the “Longitudinal Business Database”. The first dataset contains individual-level data about people and households, while the second holds firms-level enterprise information. Through common identifiers, information pertaining to the same individual or business across databases is micro-linked. MFAT could identify firms engaged in exporting and importing goods by using customs data within the second dataset.

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 per cent. 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 3).

Figure 3.
Gender participation of industry export
(number of persons and percentage)



Source: Stats NZ, MFAT calculations.

3. Data for assessing regulatory measures in services trade

Assessing services trade policies barriers across Africa

Baiker et al. (2023) used the WB–WTO STRI to assess services trade policies across 54 African economies, comparing policies across subsectors and countries. The assessment aims to understand better how regulatory differences impede market entry and create barriers for international service providers. It finds that in the transportation sector, for instance, more industrialized African economies exhibit relatively high levels of restrictiveness.

4. Country-specific use of mode of supply

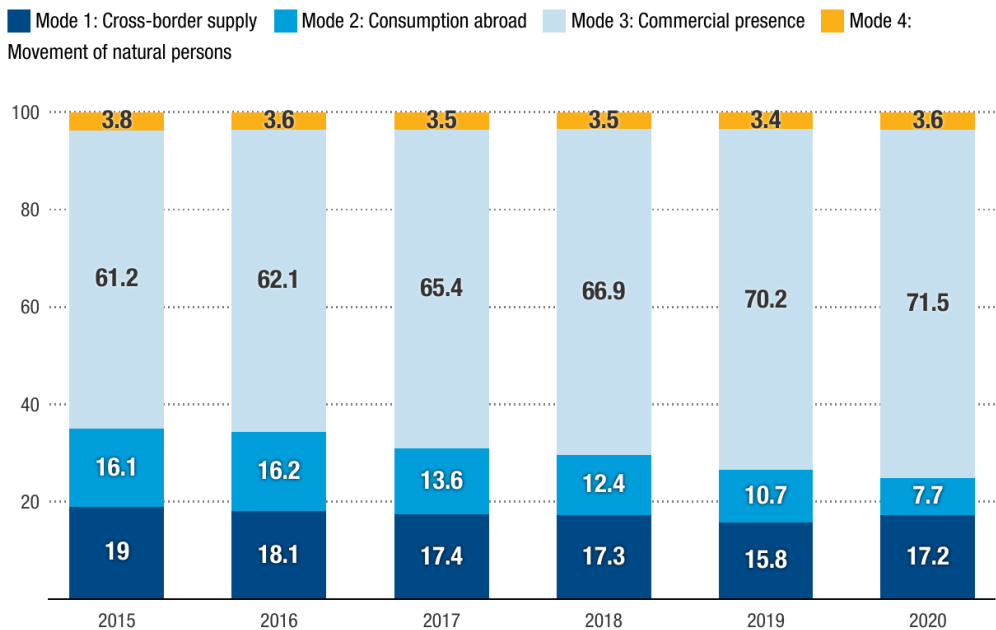
The use of the C-TiSMoS dataset and re-evaluation of China’s trade in services

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

Analysis of the C-TiSMoS database revealed that the total trade value of services was substantially higher compared to traditional BOP statistics. Figure 4 shows that C-TiSMoS estimations reveal that Mode 3 on commercial presence contributed more than 71 percent of trade in services in 2020 and grew faster than the other modes of supply between 2015 and 2019.

The WB-WTO STRI can help to assess services trade policies, and the WTO database on TiSMoS can help to reveal trade in services by mode of supply, sometimes in support of national data as in the case of China

Figure 4. China: The proportion of 4 modes of supply of trade in services, based on C-TiSMoS
Percentage



Source: Zhang et al. (2024).

Big data digitally generated may complement surveys to improve timeliness and granularity of data, when applied with appropriate legal and statistical frameworks

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.²⁰ 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.

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. This was to investigate the potential of mobile phone data in improving estimates of the number of international travellers entering the country, suggesting its integration with surveys. The results demonstrated the value of information made available by tools such as Google Trends. These tools can be a valuable complement for estimating the number of international travellers. The model of this particular tool captures the fluctuations and main turning points of traveller numbers to Italy from September 2012 to May 2019.

6. The use of privately held data

The United Nations 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.

²⁰ See, for example, a recent study from ECLAC on the use of digital technologies: Repositorio CEPAL.

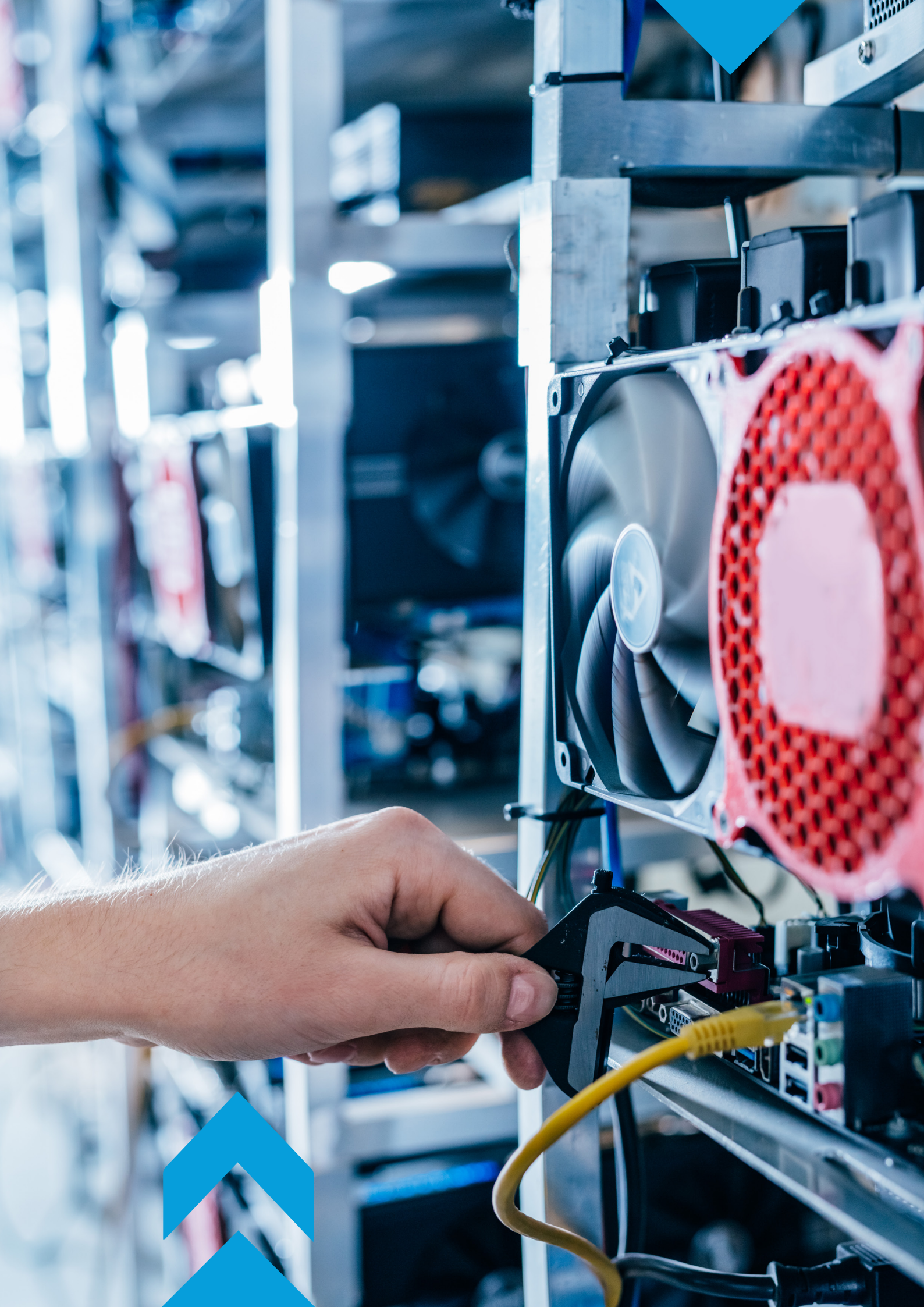
Private data can support trade analyses, for example on trade in services through Mode 3





Chapter V.

Priorities and the way forward



Priorities and the way forward

The informal 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 good 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 chapters II, III and IV of the present report. 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 knowledge sharing hub on trade in services. This portal could provide policymakers and technical experts

with a primer on data for policy making, as well as a repository showcasing innovative use of existing data. This hub could link to the data hub that is currently developed by UN Trade and Development Statistics.²¹

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 data 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. Encourage governments to strengthen legal and institutional arrangements for official statistics. This can include 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.

Members of the working group encouraged the UN Trade and Development to have a permanent agenda item on this topic in future sessions of the MYEM on Trade, Services and Development and to create a trade in services knowledge sharing hub, which includes a primer on data for policy making and to support resource mobilization in countries and donors for improving trade in services data

²¹ 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.



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Annexes





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. The current guidelines follow the sixth edition of the IMF BPM6 (IMF, 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 SNA. Notably, international trade in services is embedded in the statistical classification of 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 MSITS recommends further disaggregation of services categories, framing them into a more granular 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 (central product classification (CPC), international standard industrial classification of all economic activities (ISIC), services sectoral classification list in note W120 from the WTO, etc.). The manual is currently being updated by the TT-ITS 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, conducted through commercial banks as the main source of information. Many economies moved the collection and compilation to 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,²² 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.

²² Excluding for financial intermediation services indirectly measured" (FISIM), which would need to be estimated.



Comparison of survey-based methods and international transactions reporting system for trade in services statistics

Survey

Advantages:

- Precision resulting from many individual transactions
- Timely, can be used for short periods of reporting (monthly)
- Bank reports are comprehensive
- Stability of respondents
- Codes assigned directly to (main) EBOPS items
- Less costly than surveys

Disadvantages:

- Surveys are costly
- Important subsequent revisions
- The necessity to keep the burden on small respondents
- Respondents may need to be trained
- Skill needed in the originating institutions

International Transactions Reporting System

Advantages:

- Precision resulting from many individual transactions
- Timely, can be used for short periods of reporting (monthly)
- Bank reports are comprehensive
- Stability of respondents
- Codes assigned directly to (main) EBOPS items
- Less costly than surveys

Disadvantages:

- May be difficult to handle: A large volume of data
- Transactions proxied by settlements
- Inter-company transactions with netting practices
- EBOPS detail and Modes of Supply cannot be captured
- Geographical breakdown may be miss-assigned

Source: UN Trade and Development.



Annex 2.

Schedule and agenda of the working group meetings

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.

| Activity | Date | Agenda | Link to webpage |
|-------------------------------------|------------------|---|---|
| First Working Group Meeting | 6 June 2023 | Identify data needs and good practices in data supply and showcase innovative approaches for data use. | https://unctad.org/meeting/first-meeting-informal-working-group-data-services-trade-and-development-policies |
| Second Working Group Meeting | 11 July 2023 | Challenges in policymaking due to limited trade in services data and explored using existing data sources. | https://unctad.org/meeting/second-meeting-informal-working-group-data-services-trade-and-development-policies |
| Third Working Group Meeting | 20 November 2023 | Using alternative data sources to measure services trade, including administrative data such as VAT and price statistics. | https://unctad.org/meeting/third-meeting-informal-working-group-data-services-trade-and-development-policies |
| Fourth Working Group Meeting | 24 April 2024 | Sharing best practices and experiences in data collection and use for trade in services through commercial presence (Mode 3). | https://unctad.org/meeting/fourth-meeting-informal-working-group-data-services-trade-and-development-policies |