



Twenty-Ninth Meeting of the IMF Committee on Balance of Payments Statistics

Washington D.C., USA
October 24–26, 2016

BOPCOM—16/11

Reducing Discrepancies and Asymmetries: What Can Direct Investment and Trade in Services Statisticians Learn from Each Other?

Reducing Discrepancies and Asymmetries: What Can FDI and Trade in Services Statisticians Learn from Each Other?

Prepared by the OECD

1. Introduction

1. High quality data on international trade in services that provide insights into the types of services that are traded, and with which partner countries, are vital for economic analyses and policy making. The same is true for Foreign Direct Investment (FDI) statistics, where breakdowns by partner and industry are the main (and often only) source of information to obtain insights in how multinational enterprises (MNEs) are shaping the process of globalization.
2. However, for many countries, the currently available trade in services (TIS) and FDI statistics lack this necessary level of detail. In addition, when the data *are* available, discrepancies with similar, related concepts, and asymmetries within data reported by partner countries, hamper the analytical and policy use of TIS and FDI statistics.
3. Recognising the size and importance of this problem for the quality and usefulness of TIS and FDI statistics and Balance of Payments statistics more generally, international organisations, including the OECD, and individual countries are increasingly emphasising the need to a) reduce bilateral trade and FDI asymmetries and b) to address (conceptual reasons for) discrepancies in national data on the other hand. Additional impetus for reconciling asymmetries has been provided by the development of Trade in Value Added statistics, which require, by design, a coherent and balanced view of international trade across partners. Moreover, the growing need for extensions to the TiVA accounting framework that provide similar indicators relating to income and investment flows, has provided significant momentum to, and increased the importance of, resolving asymmetries in FDI data and between FDI flow and comparable trade in services statistics.
4. This paper provides an overview of the various activities of the OECD, in collaboration with other IOs, towards achieving these goals, with a focus on trade in services statistics and FDI statistics, and on what these strands can learn from each other¹. Section 2 describes the activities to reduce asymmetries in trade in services statistics, highlighting the joint OECD-WTO work on developing balanced trade in services statistics (and merchandise trade statistics), and the joint OECD-Eurostat metadata survey. Section 3, looks more closely at the various causes of FDI asymmetries, and the insights derived from the recently conducted OECD FDI metadata survey.

¹ As well as from other statistical areas, such as national accounts.

5. This overview shows that trade in services statistics and FDI statistics have many compilation challenges in common (e.g. geographical area attribution, data coverage) that in turn generate asymmetries. There is therefore ample opportunity to learn from each other by exchanging methods to address these, and the asymmetries they create. Activities of international organizations with respect to reducing them are addressed, including the IMF Coordinated Direct Investment Survey (CDIS), the European FDI network, and the bilateral asymmetry meetings that are organized adjacent to the OECD Working Group on International Investment Statistics (WGIIS) and the Working Party on international Trade in Goods and Services Statistics (WPTGS), as well as the Eurostat BOP Working Group.
6. However, in addition, many also share common, and often even interrelated, compilation challenges that may result in asymmetries, notably related to SPEs, intra-company flows, and intellectual property. These issues are addressed in section 4, including suggestions of avenues for further work along these lines.

2. Addressing trade in services asymmetries

2.1 Trade in services asymmetries

7. There are many reasons why the availability and indeed quality of trade in services data are unsatisfactory, certainly when compared to merchandise trade statistics. Unlike goods which can be seen and physically measured and observed as they cross borders, services transactions can be delivered via a (growing) variety of modes, including electronically, and typically only the financial flows are observable. In practice, therefore, a variety of different data sources and estimation techniques are necessarily used, and these can vary by country. Data confidentiality can also add another layer of complexity.

2.2 Balancing international services trade (and international merchandise trade)

8. The OECD, in collaboration with WTO, is developing complete, consistent and balanced bilateral trade in services and balanced bilateral merchandise trade statistics from 1995 onwards. The resulting matrices are an analytical tool that forms an essential component of the TiVA Inter-Country Input-Output Table, but can also be used for other policy relevant analysis. The structured modular approach that is taken in both these projects facilitates transparency in the balancing process and capitalises on the Working Party on Trade in Goods and Services Statistics (WPTGS) bilateral trade asymmetry meetings, the WPTGS Informal Reflection Group on more detailed trade in services statistics, and the detailed metadata on TIS compilation practices in the joint OECD-Eurostat survey (discussed below).

9. The intention is to encourage collective ownership of the databases, amongst countries and other international organisations, creating in the process an international benchmark for balanced trade data that can be used for stand-alone analysis as well as in the creation of TiVA. Such an international benchmark data set and transparent balancing process is also essential for ensuring that regional efforts to develop TiVA, such as the Eurostat FIGARO project, APEC-TiVA, NAFTA-TiVA and various other regional initiatives, can be easily integrated within the global dataset.

10. With respect to trade in services, the current OECD-WTO approach consists of four consecutive stages, including: the collection of national source data; estimations of missing estimates (reviewed and checked as much as possible with national authorities); a transparent balancing of export and import statistics; and a conversion to CPA. The first three stages are virtually completed (for the 1995-2012 period, for all main EBOPS categories, for 191 reporters and partner countries) and the data will be released in the coming months (see also Fortanier et al, 2016)². The conversion from EBOPS categories to CPA categories to facilitate integration into Supply Use Tables (SUT) is being developed and will use country specific conversion coefficients, based on generic conversion tables, Services Trade by Enterprise Characteristics collections, and SUT data.

11. A similar modular, transparent and collaborative approach is used for merchandise trade statistics (See Fortanier and Sarrazin, 2016)³. After ensuring a consistent valuation of both exports and imports at FOB by subtracting detailed estimated CIF-FOB margins (see Miao and Fortanier, 2016)⁴ from imports, a variety of adjustments are made for specific large problems that are known to drive asymmetries. Each ‘problem’ area is the subject of a separate module, and the list of these modules is expected to be augmented over time. At the moment, adjustments are made for re-exports via Hong Kong, for Swiss trade in non-monetary gold, for a series of individual but obvious bilateral product misclassifications, and for confidential flows (by partner, product or both), which together account for more than 20% of global accumulative trade asymmetries. As a final step, the adjusted data are balanced by calculating a weighted average of reported and mirror flows, using ‘symmetry indices’ to generate weights. All calculations and adjustments are made at the HS 6-digit product level, but will also be published at the CPA 2 digit level using existing conversion tables. The first version of the database, expected for release towards the end of 2016, will cover the 2007-2014 period, while updated versions with additional modules and longer time series are expected to appear regularly over the coming years.

² Fortanier, F, Liberatore, A., Maurer, A. and Thomson, L. (2016) ‘Towards a global matrix of trade in services statistics’, paper presented at the WPTGS meeting, 21-23 March 2016, STD/CSSP/WPTGS(2016)16.

³ Fortanier, F. and Sarrazin, K. (2016) ‘Balanced International Merchandise Trade Data, version 1’ paper presented at the WPTGS meeting, 21-23 March 2016, STD/CSSP/WPTGS(2016)18.

⁴ Miao, G. and Fortanier, F. (2016) ‘Estimating transport and insurance costs of international trade’, OECD Statistics Working Paper, forthcoming.

2.3 The OECD-Eurostat joint Trade in Services Metadata Survey

12. Metadata are an important tool to obtain insights into the possible methodological causes of bilateral asymmetries such as cross-country differences in data sources, definitions, and methodologies. Naturally, if countries align their statistics more closely to the international standards as part of their implementation, it should lead to a reduction in asymmetries.
13. In 2015, the OECD and Eurostat undertook a joint web-based collection of metadata for Trade in Services (TIS) statistics to gather information on countries' data collection and compilation methods following the implementation of the *Balance of Payments and International Investment Position Manual* (BPM6) and the *Manual on Statistics of International Trade in Services 2010* (MSITS 2010). The survey was collaboratively developed between 2013 and 2015 by all international organisations under the auspices of the Task Force on International Trade Statistics (TFITS) to ensure the maximum consistency and comparability of the collected metadata and to reduce response burdens for reporting institutions.
14. The final questionnaire consisted of 24 questions in 5 main areas: general information on the national data provider and reference publications; legal framework for TIS data compilation; concepts and definitions used; data collection, compilation, and data-processing methods; and quality reporting. The survey was carried out in early 2015 by Eurostat (for EU countries) and the OECD (for non-EU OECD countries). A total of 38 countries completed the survey⁵. The results of the metadata survey for all countries can be found in the [OECD's EBOPS 2010 Trade in Services by Partner Country database](#) by clicking on the information icon next to the reporting country name. The main findings of the survey are summarised below, followed by an analysis of their use in the identification of services trade asymmetries.

Summary of Trade in Services metadata survey findings

15. *Main data providers.* In 19 countries, the Central Bank is the main statistical provider; in 13 countries, the national statistical office is the main data provider; and in 6 countries, the two agencies both compile the statistics.
16. *Legal framework for TIS data compilation and confidentiality policy.* In all countries, the legal basis for TIS data compilation is either the statistical law or central bank law or regulations. The majority of countries have requirements to keep the data confidential⁶, generally including provisions against revealing the data of individual respondents, of requiring a minimum number of observations for a cell to be published, a dominance criterion, and protection against indirect disclosure.

⁵ Missing countries include Mexico (still in BPM5/EBOPS 2002), France, Slovak Republic and Iceland.

⁶ All countries that responded to these questions indicated that they had requirements to maintain the confidentiality of the data reported to them; 6 countries did not explicitly specify.

17. *Concepts and definitions used.* All countries that replied to the survey followed BPM6/MSITS 2010 and used the EBOPS 2010 services categories except for Chile, which still followed BPM5. All countries reported that their geographic allocation is based on the centre of predominant economic interest. All countries reported that all transactions are at market prices, while most countries, 29, reported that they are on an accruals basis. The currency conversion varied across countries, with most reporting that the conversion was done using the exchange rate on the date of the transaction. However, other countries used a period average, and some countries have the currency conversion performed by the data providers.
18. *Data collection, compilation, and data-processing methods.* The compilation of TIS statistics requires countries to use a number of different data sources. All countries reported using enterprise surveys. Additional data sources used include an International Transactions Reporting System (ITRS), administrative records, statistical models, and household surveys (for travel). The survey results also describe how the importance of different data sources varies with the different types of service. For example, while enterprise surveys were generally the most important data source, household surveys were most commonly used to estimate travel, and administrative records and statistical modelling for government services n.i.e..

Using metadata to identify causes for trade in services asymmetries

19. The metadata survey can help identify the main causes for bilateral asymmetries. The analysis thus far has highlighted four generic aspects that drive asymmetries: *data limitations*; and, in relation to that, the *coverage of the service category*; *reporting thresholds*; and *data sources and approaches* used.
20. *Data limitations.* Countries were explicitly asked to what extent their practices differed from international standards. Among the issues identified were problems related with coverage, with particular issues noted for the coverage of households, transactions with government and non-profit institutions serving households, and special purpose entities (SPEs).⁷ There were also concerns expressed about the frequency of data collections, with some countries relying on annual surveys. Finally, there were concerns expressed about the compilation challenges of combining so many different data sources.
21. *Coverage of service category.* Differences in the attribution to specific types of service can also lead to asymmetries in reported trade in services statistics between countries. For example, the surveys used by the U.S. Bureau of Economic Analysis (BEA) include all transactions related to, the reproduction or distribution, and the sale of intellectual property products, under charges for the use of intellectual property, which without

⁷ SPEs are entities whose role is to facilitate the internal financing of the MNE such as by holding assets and liabilities or raising capital but that have little or no physical presence in an economy. The residence of an SPE should be assigned to the country in which they are incorporated.

explicit adjustments being made, could lead to an overstatement of BEA's charges for the use of intellectual property, shedding important insights on potential asymmetries.

22. Another example of possible issues with coverage mentioned by countries in the metadata survey, including Austria, Belgium, Luxembourg, and the Netherlands, was the lack of coverage of households outside of *travel services*. The responses suggest that cross-border imports of services by households, for example on-line purchases, may not be included in official statistics.⁸
23. *Reporting thresholds*. Many countries, including Japan, Spain, Greece, Poland and Portugal, explicitly expressed concerns about the presence of reporting thresholds in their surveys. This introduces the possibility of understating transactions in both imports and exports relative to partner countries if partners use different (or have no) thresholds. It also introduces another potential (but directly related) source of asymmetry: different estimates of these missing transactions. Many countries gross up their estimates to cover these missing transactions; different approaches could lead to asymmetries.
24. *Data sources and approaches used*. Many different data sources are used in the compilation of TIS statistics, and some of these, such as administrative records, were not specifically designed for the compilation of trade in services statistics. As such, they may include items that should not be included in TIS statistics. For example, the data source that the U.S. BEA uses for defense expenditures abroad can commingle goods and services when the distinction is not clear. This could result in an overstatement of U.S. imports of government services.

3. FDI asymmetries

25. In 2013, the Coordinated Direct Investment Survey (CDIS) team initiated a project to raise awareness of and, if possible, to reduce large bilateral asymmetries in FDI positions reported for end 2011 by sending messages to countries identifying large asymmetries and asking them to investigate the asymmetries. In response to this request, the U.S. BEA presented a paper examining the sources of large asymmetries and quantifying them where possible at the 27th BOPCOM meeting.⁹ This paper identified five main sources of FDI asymmetries: 1) *inherent inconsistencies in the measurement of FDI under the extended directional principle*; 2) *incomplete coverage of FDI relationships*; 3) *uncertainty regarding treatment of SPEs*; 4) *differences in valuation*; and 5) *differences in geographic definitions*.

⁸ In practice some of these missing flows might subsequently be captured in balancing GDP through a supply-use framework but it was beyond the scope of the survey to ask whether any such changes were subsequently included in official TIS by EBOPS categories.

⁹ "Research by the U.S. Bureau of Economic Analysis on Large Bilateral Asymmetries in FDI Based on the CDIS 2011 Results," BOPCOM–14/19, October 27-29, 2014.

26. *Inherent inconsistencies in the measurement of FDI.* The extension of the directional principle to transactions and positions between fellow enterprises creates an asymmetry in bilateral FDI statistics, when the ultimate controlling parent is not resident in the same countries as either of the fellow enterprises, because the country of the fellow enterprise receiving the loan treats it as an increase in inward investment while the country of the fellow enterprise making the loan treats it as a reduction in inward investment, and not as an outward investment. This results in an asymmetry in FDI positions and flows between the countries of the fellow enterprises.
27. With respect to *incomplete coverage of FDI relationships*, BEA identified the varying degrees of coverage of fellow enterprises in different countries as a source of asymmetries, with some countries having complete coverage, others partial coverage, and others not covering them at all. The provision of metadata can be helpful for countries to identify possible differences in coverage, and for them to identify possible problems with coverage in their statistics that they can address.
28. *Uncertainty regarding the treatment of SPEs.* In FDI statistics, the complex chains of ownership utilising multiple SPEs create a number of difficulties for compiling FDI statistics. Two of the most important are that they present a particular challenge to the host economy in coverage and a particular challenge to the home country in geographical attribution. Due to their very nature – little or no physical presence – SPEs can be easily formed or dissolved, can quickly grow to account for very large transactions, and can present difficulties in verifying the information reported. Maintaining an accurate register and complete coverage of SPEs can be problematic for compilers in the host country. For the home country of the MNE, it may be difficult for the individual responding to the survey to identify SPEs in the ownership chain and correctly attribute FDI flows and positions to that location, leading to misallocation based on the immediate partner country.
29. *Differences in valuation.* In FDI statistics, the same transaction or position can be valued differently. Usually the source for FDI statistics are company surveys, so most of the data would reflect the value on the company's books. However, for a large portion of FDI positions, market values must be estimated. There are several different methods recommended in the international standards and different countries using different methods, or even the same method but applying it differently, could lead to significant differences in the values.
30. *Differences in geographic definitions.* In its research, BEA discovered that its definition of the United Kingdom differed from that used by the U.K. Office for National Statistics (ONS). Specifically, BEA attributed FDI transactions and positions with the Channel

Islands to the United Kingdom, but the ONS does not.¹⁰ This same problem affects much of BEA's other international transaction statistics with the United Kingdom, including trade in services. BEA is working to solve this problem.

3.1 FDI metadata survey results

31. In 2015, the WGIIS recognised the need to collect metadata information in light of the changes introduced to methodologies and data sources as countries implemented BPM6 and the 4th edition of the *Benchmark Definition of FDI* (BMD4). The BMD4 metadata survey was finalised in May 2016, and countries were asked to complete it by the end of July 2016. Preliminary survey results were discussed at the October 2016 meeting of the WGIIS. Final results will be published during 2017.
32. Thus far, 32 of 35 OECD countries have completed the survey. The results have revealed some differences across countries in the definition of the FDI universe, in the coverage of fellow enterprises, in the measurement principles applied to transactions between fellow enterprises, and in valuations. The WGIIS will analyse the results of the metadata survey to better understand how these differences affect bilateral asymmetries. The survey results will also be used to identify best practices for particularly problematic areas of BPM6 and BMD4, such as the treatment of fellow enterprises, as well as guiding work on updating the benchmark definition.

4. Trade in Services and FDI: what can statisticians learn from each other?

4.1 Similar challenges

33. It is clear from the review above that TIS and FDI statisticians often face similar types of methodological challenges when compiling their data, such as geographical area attribution, or data coverage issues, that in turn affect the extent of trade and FDI asymmetries. In certain areas, such as construction, the delineation between the two types of activities in itself determines if transactions are considered to be trade or investment. There seems, therefore, ample scope here to benefit from approaches and techniques used in both areas to address these asymmetries. In addition to bilateral reconciliation exercises, there are various examples where IOs have played an important facilitating role.
34. *Workshops and bilateral asymmetry meetings.* Started by the WPTGS, but now also implemented in the WGIIS as well as in the Eurostat Balance of Payments Working Group, international organisations are increasingly facilitating bilateral asymmetry meetings among statisticians. Often these are supported by tailored reports on the most

¹⁰ Note that it differences in geographic definitions also exist in international trade statistics and resolving these differences has formed an important part of the OECD's work, described above, in resolving asymmetries.

important asymmetries. Feedback from these meetings by participants has been very positive.

35. *Virtual tools.* In addition to these face-to-face meetings, various virtual tools have been created to allow countries to bilaterally compare their statistics, discuss sources of asymmetries, and reconcile statistics, including the IMF CDIS, the European FDI network. No such networks exist (yet) in the area of international trade, with the exception of Eurostat's SIMSTAT initiative, and the OECD will explore the possibility of similar tools being used in developing the OECD-WTO balanced TIS dataset.
36. *Metadata surveys.* As discussed in detail in section 2 of this paper, detailed metadata surveys can provide an important source of information to identify the sources of bilateral asymmetries.

4.2 Shared challenges

37. It is clear that increased globalisation has created greater challenges in compiling coherent international estimates of both TIS and FDI statistics, and that exchanges of best practices can play an important role in improving coherence. However, it is also clear that globalisation has created *shared* challenges for constructing national FDI and TIS estimates, due to for example the blurring of lines between FDI flows and TIS, with similar consequences for the international coherence of statistics.
38. For example, problems related to the identification and treatment of SPEs for FDI statistics, provide similar challenges for TIS statistics, especially in relation to charges for the use of intellectual property held by SPEs or financial services from the assets/liabilities they manage; resulting in understatement of the related services flows in TIS. Indeed, some of the respondents to the OECD-Eurostat Trade in Services metadata questionnaire expressed concerns about the coverage of SPEs in their statistics.
39. More troubling however, but also where there is significant potential from viewing FDI and TIS as part of the same parcel, relates to the increasing blurring of the line between trade in services and property income (FDI income payments and receipts), which can distort GDP measures and hampers international comparability. This is especially prominent in intra-MNE transactions in intangible assets where the same transaction may be recorded as international trade in services in one country and primary income flows in the partner (although other types of transactions, such as the leasing of capital goods, are likewise blurring the line between TIS and FDI).
40. The use of intangible assets owned by parents by affiliates, for example, should be recorded as imports of services by affiliates. However business surveys capturing the affiliate's activity may reflect a different view of these flows, which may instead be

recorded as primary income outflows. The direct consequence of these flows would be inconsistent bilateral trade in services statistics (assuming that the parent correctly recorded exports of services) as well as investment flows, as there would be no recorded primary income receipts by the parent but payments would be recorded by the affiliates. Moreover, there are related issues concerning the exhaustiveness of inward FDI because, implicitly, the recording of primary income flows rather than services flows for the use of an intangible asset implies that ownership was transferred from the parent to the affiliate(s), but this may not in fact be recorded in the statistics.

41. Further investigations into these topics are necessary not only to reduce asymmetries and discrepancies, but also to be able to obtain better information and statistics of the (possible extent of, or risk of) Base Erosion and Profit Shifting (BEPS) by MNEs, of which such flows are often symptomatic.
42. These *shared challenges* call for closer collaboration between TIS and FDI statisticians than has hitherto been the case in many countries and fora. Rather than asking what TIS and FDI statisticians can learn from each other, the better question should be *what they can learn together*.
43. A variety of options can be explored, many if not all of which would depart from an initial effort to link FDI and Trade in Services surveys at the micro level. While this in certain countries would require overcoming important challenges related to e.g. differences in statistical units, or overcoming institutional boundaries, those countries that already conduct their TIS and FDI surveys in a fully integrated – or in any case linkable – manner should have fewer problems to bring the relevant information together.
44. A first analysis could focus on creating tables from these linked microdata that compare, for example, FDI income receipts and payments, and IPP-related trade in services flows with affiliated partners, by partner country. The relevance of such studies has been underlined by the OECD WPTGS at its last meeting: in the presence of substantive BEPS activity, it is likely that from these tables a pattern emerges whereby gross profits are concentrated in those partner countries where tax regimes are relatively lax. By bringing these two statistics together, a more coherent and comprehensive picture of MNE activity emerges.
45. Another stream of work whereby closer collaboration between TIS and FDI statisticians (as well as others, e.g. FATS) would be beneficial, building again on linked microdata, is the development of analytical statistical tables that describe Trade in Services and FDI flows and positions *by industry and firm ownership, on a fully consistent basis*, i.e. with harmonised treatment of SPEs across both sources, a common basis to break down foreign ownership (e.g. MOFAs only), and a harmonised industry classification.

46. Such data would present a first step to building closer links with FATS/AMNE statistics and to come to a full statistical description of all trade and financial flows related to the activities of foreign owned affiliates in the reporting economy, and of domestic enterprises with investments abroad. Clearly the creation of such tables require extensive methodological coordination, whereby experiences in data linking in related fields, which will be summarised in the OECD's upcoming Handbook on Linking Trade and Business Statistics, may also be of use. In addition to their immediate analytical use, such data will be key inputs for the development of Extended Supply and Use tables that will allow amongst others for the integrated analysis of the role of MNEs in Global Value Chains, as well as a building block for the construction of integrated international economic accounts.
47. At the moment, WTPGS and WGIIS plan to meet jointly again in March 2017. One of the agenda items for this joint session is to establish a group of countries (based also on the answers received on questions on this topic for the WPTGS Stocktaking Questionnaire) that would be interested in discussing the conceptual and empirical challenges involved in linking Trade in Services and FDI statistics, and to develop an action plan to advance this agenda.

Questions for the Committee:

1. *Are/have Committee members engaged in studies into their bilateral (or trilateral) trade asymmetries (goods or services); and, if so, would members be able to share their insights and conclusions on these efforts with the OECD?*
2. *Do Committee members have suggestions for other challenges confronting both TIS and FDI statistics compilers that should be explored?*
3. *Are there Committee members that would like to volunteer to be part of the group discussing the empirical and conceptual challenges in linking TIS and FDI data?*