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Trade in Services by Modes of Supply

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(Preliminary version; please do not quote)

Abstract

Trade in services by modes of supply provides valuable information to carry out impact assessments of free trade agreements under the European services trade policy. As recognised by the Eurostat's working group on international trade in services statistics, the availability of statistics on the international supply of services detailed by services category, mode of supply and by partner country is highly important for services trade policy making and related analysis. Therefore, this paper explores the current experience of national (e.g. Spain and Germany) and international actors (e.g. Eurostat) on this issue and aims to illustrate possible ways to explore how to split services trade by mode of supply in the GTAP database.

Keywords: Modes of Supply; Trade; Services

Contents

1. Background

For services trade negotiations, users need comprehensive information on the international rendering of services and on their mode of supply. This need has led to the necessity for the development of the statistics on the international supply of services which goes beyond the primary objective of the balance of payments. Availability of statistics on the international supply of services detailed by services category, mode of supply and partner country is highly important for services trade policy making and related analysis.

Currently, international trade in services covers services transactions between residents and non-residents. The services trade statistics originate mainly from the transactions of the country's balance of payment, so they are primarily collected for the purpose of balance of payments. Balance of payments transactions by services' category are defined with respect to the residency of the seller and the purchaser, without a distinction regarding how the service is actually supplied. This means that important aspects of the international supply of services, taking place through commercial presence, (mode 3, foreign affiliates' statistics or FATS, see below) either are not captured or are difficult to identify.

The General Agreement on Trade in Services (GATS), the first multilateral agreement to cover trade in services, defines trade in services as the supply of a service through four modes of supply. Services broken down by the mode of supply is the identification of the way in which the services were traded. This is an extended scope of international trade in services, also mentioned as international supply of services. For example, legal services, may be supplied to the customer through e-mail (cross-border supply or mode 1), by the established affiliate abroad (commercial presence or mode 3) or by lawyer's presence abroad (presence of natural persons or mode 4). This would enable an assessment of both the relative importance of different modes of supply in a particular sector and the impact of measures affecting each mode of supply.

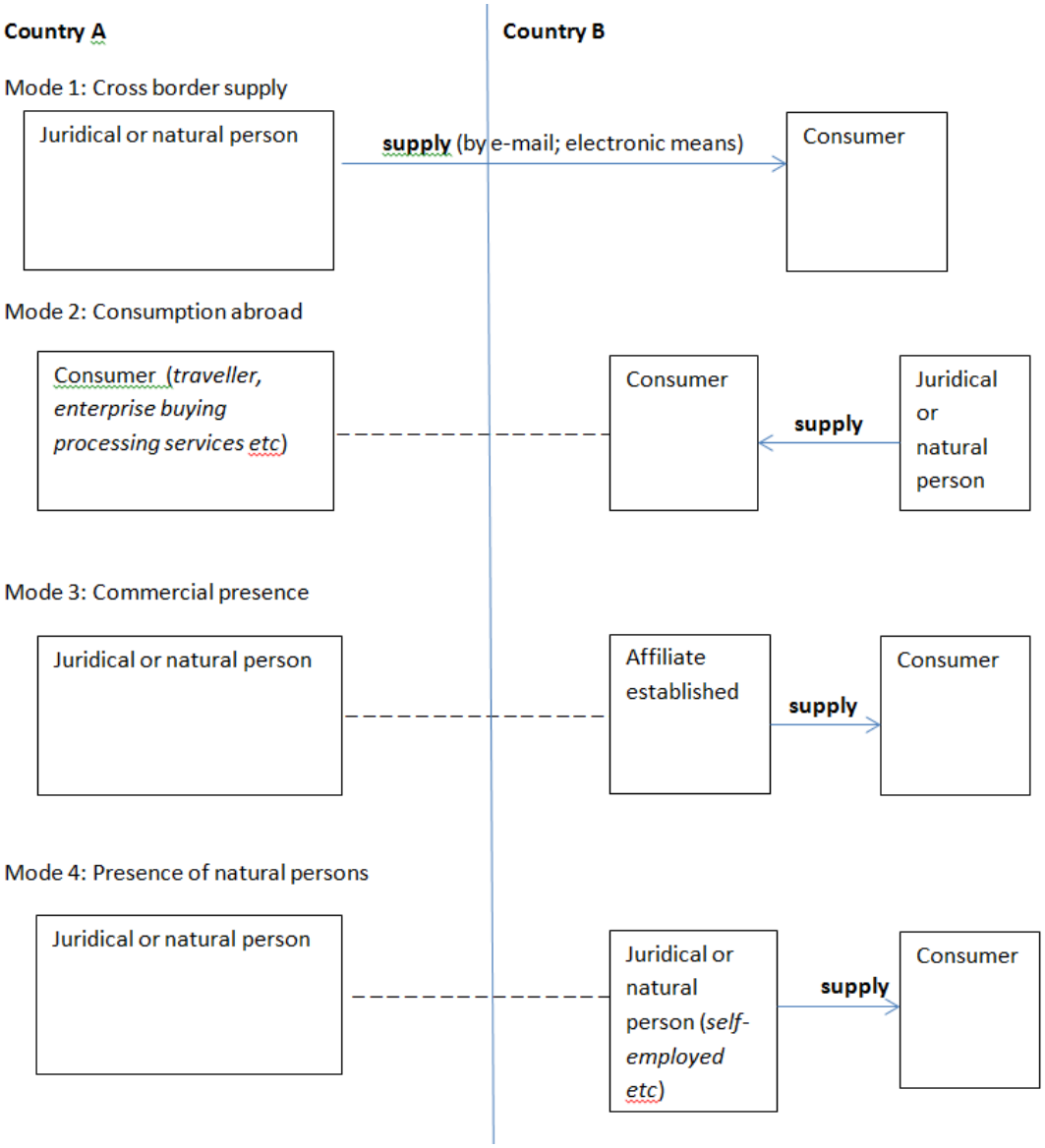
2. Overview

Measuring international trade in services by mode of supply is the further development of International Trade in Services Statistics (ITSS) framework. According to GATS, services are supplied by four modes of supply. A brief description of the four modes of supply in services' trade is the following.

- Mode 1 is the cross-border supply of services, from the territory of one country into the territory of the other country. For example, the computer services company in one country sells the computer services to the company (including its affiliates) in the other country. ITSS currently mostly measures this mode.

- Mode 2 is the consumption of services abroad. Customers travel to another country to buy services (including for example computer services) by their own account. The travel item would cover information relating to this transaction.
- Mode 3 is the commercial presence of the company in the other country. For example, the computer service is provided to the customer by an affiliate in the other country. Currently, the foreign affiliates' statistics (FATS) provides the information for that purpose, though limited to the enterprise's activity level.
- Mode 4 is the presence of natural persons abroad. For example, one computer services company is sending its employees directly to a customer in another country for supplying the services there.

Figure 1 Simplified presentation how services are supplied



It would be beneficial that services trade statistics will be also available broken down by the mode of supply for each service category (EBOPS 2010), to be aware of the magnitude of services trade between two countries.

FATS as mode 3

From a mode 3 perspective, the main interest is in compiling services data broken down by businesses' control (destination/origin) and by service category. However, in the absence of data by service category, it is still possible to estimate the most relevant category of service being provided according to the primary activity of the business (legal entity). For example, an affiliated company in the telecommunication services industry is likely to have been set up abroad to provide mainly the telecommunication services.

FATS are the main data source for assessing mode 3, or commercial presence of the service provider. In the majority of cases this mode of supply corresponds to the activities of entities that are controlled or owned from abroad, in the territory where they are established. The supply of services through mode 3, by non-resident suppliers to residents of the compiling economy, is made by the resident affiliate of this supplier (i.e. recorded as transactions between residents of the same economy).

3. Compilation methods

Combining statistics on residents' and non-residents' services transactions in ITS and FATS statistics gives the users a broad perspective on the international supply of services. This broad perspective recognises the key role, in the delivery of services internationally, played by affiliates that are located inside the markets they serve, at the same time owned outside. It is also consistent with the view many firms take of their world-wide operations.

Data collection based on the value of the international supply of services should include:

- The compilation of residents' and non-residents' trade in ITSS in the context of the balance of payments (mainly referring to modes 1, 2 and 4) and by the relationship between the trading parties.
- The foreign affiliates' statistics (FATS), exclusively referring to mode 3.

Mode of supply data for trade in services can be either collected through direct reporting systems, surveys or they can be estimated or modelled. In many cases a combination of the two approaches should be used to obtain the required aggregates. For the countries using an international transaction reporting system (ITRS), modelling the relevant mode of supply may be the only option. Data on mode 3 (commercial presence) will need to be added in addition to existing data on resident/non-resident services trade, as this mode of services supply falls outside the scope of service transactions measured under the balance of payments framework.

There is a simplified approach (recommended by the MSITS, 2010) on how to estimate the services trade by mode of supply by applying a three-step procedure of allocating, evaluating and refining:

1. Each service item can be **allocated** to one of the columns identified in the following table based on an assumption of how a specific service item is most probably supplied by exporters (or to importers) of the economy. In order to provide a first approximation in a comparable way, all compilers are encouraged to conduct this generic allocation.

2. **Evaluate** if the "generic" allocation, as conducted at the first step, is relevant for their economy, and review results accordingly. For example, it may be worthwhile for the compiler to discuss with the institution in charge of trade in services negotiations, if the results reflect their knowledge of how services are supplied abroad and to their national economy, as far as it relates to transactions recorded in the balance of payments.

3. Based on the results obtained in the second stage, one can **refine** their allocation by gathering additional information to improve the knowledge of some specific service sectors. Such additional information can be gathered in cooperation with the institution in charge of trade in services and might validate the assumptions made earlier by statisticians or negotiators. However, such an allocation is a rough approximation of resident and non-resident services transactions by mode of supply, as this technique has important limitations.

Simplified allocation of FATS and balance of payments data to modes of supply[a]

	FATS (sales or output)[b]	Balance of payments trade in services					
		Mode(s)					
	Mode 3	1	2	4	1 and 4	2 and 4	3 and 4
Manufacturing services on physical inputs owned by others	X		X				
Maintenance and repair services n.i.e.	X		X				
Transport	X	X					
Passenger	X	X					
Freight	X	X					
Other	X						
– Postal and courier services	X	X					
– *Service to domestic carriers in foreign ports (and vice versa)*	X		X				
– *Other*	X	X					
Travel			X				
Goods							
Local transport services	X		X				
Accommodation services	X		X				
Food-serving services	X		X				
Other services	X		X				

This method consists of attributing EBOPS service categories to either one dominant mode or to several modes using a distribution, based on an assumption on how specific EBOPS 2010 service items are most probably supplied by exporters (or to importers) of the economy. As a starting point, each EBOPS component should be allocated either to one dominant mode or, where there is no single dominant mode, to the most significant modes of supply as described in MSITS (2010).

Metadata provision must convey the provided information by mode of supply that will help the users in evaluating the comparability of the data, which is the result of a multitude of factors. Metadata should also be provided explaining the rationale for the allocation of the service items to specific modes. At the EU level, Eurostat is encouraging the EU countries to measure the services trade by mode of supply and making the allocation at least at the level of the 12 major BOP services components.

Further methodological guidance and a method for allocating the international supply of services by mode of supply are provided under Chapter V of the Manual on Statistics of International Trade in Services 2010 – MSITS 2010.

4. Eurostat's experience on the estimation of modes of supply of services

This section is based on the Eurostat's experience on the estimation of services trade broken down by the four modes of supply with the simplified allocation approach, using the existing data. They will result in a set of rough estimates on modes of supply comparable at country level, although with important limitations though. Some national experiences will also be reported.

Eurostat has undertaken the work to make the best use of the existing ITS and FATS data in the development of services' mode of supply estimates at EU28 and Member State level, as we have applied the simplified approach for estimating services trade by mode of supply. The **novelty** of our work is that we merged both sources, while some limitations and assumptions were also made. Our work should be taken as an illustrative study to allocate existing trade in services and foreign affiliated data by mode. While this is a relatively low-cost approach (no special survey has been conducted), it can only be considered as a rough approximation of how services are actually delivered.

Some limitations for interpreting the results, should be taken into consideration. GATS negotiators are only interested in the supply of services. However, the value of goods is also included under some service items - travel services, construction services, government and maintenance and repair service n.i.e. Often, it is not possible to separately identify the goods components from the service transactions for these components.

Also, there may be some double counting by using both FATS and trade in services

data in the analysis. Sales of services of foreign affiliates based in the compiling economy can include exports by the affiliate, which will also be captured by the trade in services figures.

4.1. Data sources

The sources used are all publically available. Methods are based on the Manual on the Statistics of International Trade in Services (MSITS 2010), while some further assumptions and developments were made. MSITS 2010 sets out the internationally agreed framework for the compilation and reporting of statistics of international trade in services, including data by mode of supply.

For getting the mode of supply estimates, we have developed a correspondence table to show the relationship between the trade in services **product** based classification and FATS **industry** based classification, in order to present the Mode of Supply data according to a single classification. Merging FATS activity breakdowns into the EBOPS product based classification ended with the development of EBOPS and NACE correspondence table at the EU level. A draft correspondence table has been developed for the analysis and can be found in the Annex.

4.2. Methodology

We designed the structure for allocating each EBOPS component to one or more modes, following the *MSITS 2010* simplified approach. We designed the methodology for estimating missing (including confidential and not available) data.

Concerning FATS statistics as mode of supply 3, we used the allocation table of NACE categories to EBOPS categories (see Annex). In addition, we designed the methodology for estimating **distribution services** for FATS estimates. Distribution services are an additional category that has been used to allocate **production** values rather than turnover of those enterprises classified as wholesalers and retailers (NACE G). As production values are only provided for Inward FATS, so production values for Outward FATS are derived from the "production value / turnover" ratio derived for Inward FATS. The resulting “sales” are allocated to Mode 3 “distribution services”.

Concerning EBOPS services allocation to the modes of supply, each EBOPS component is assumed to be delivered by either one mode or a combination of modes. For example, manufacturing services (services code SA) are assumed to be delivered via Mode 2, while maintenance and repair services (service code SB) are assumed to be delivered via modes 2 and 4, with 90% via mode 2 and 10% via mode 4. The mode allocation of EBOPS categories is made **at the most detailed** level. For example, within transportation services (BOP code SC), passenger and freight services are assumed to be delivered via mode 1, while other supporting and auxiliary services are delivered via mode 2.

Where subcomponents of the 12 product breakdown are allocated to different Modes,

the data at the 12 product level will be based on the sum of the sub-components. For example, total transport services is allocated to mode 2 (freight and passenger transport) and mode 1 (other transport services). Transport services are allocated to both modes 1 and 2 based on the data provided by each MS for the 3 sub-categories.

Concerning travel component as part of the mode 2 estimate, we have calculated the services share as 65% in exports and 74% in imports, which means, that we have excluded the goods share in travel services taking into account some EU countries' estimates.

After the allocation of ITS and FATS statistics, we merged the FATS and EBOPS data to each of the 12 components by mode of supply using the EBOPS – NACE Rev.2 correspondence table developed to allocate the industry based FATS classification into the 12 product Mode of Supply component structure.

The Belgium services trade data illustrates our work, how the services (both ITS and FATS) data has been allocated by mode of supply (see Table 1). Please note that data in *italics* describes the consumption and the manufacturing that takes place in Belgium, not abroad. In the presentation of services supplied by mode of supply, consumption **abroad** should be taken into consideration, which means that **imports** data for "travel" and "manufacturing" is needed. These data have also been calculated in our work.

Table 1. Example: Belgium's services exports and outward FATS with partner Extra-EU, million EUR, 2012.

		Extra EU-28			
		Mode 1	Mode 2	Mode 3	Mode 4
S	**Services**	**19,446**	***3,355***	**:**	**4,098**
SA	Manufacturing services on physical inputs owned by others	**0**	***1,836***	**:**	**0**
SB	Maintenance and repair services n.i.e.	**0**	***117***	**0**	**13**
SC	Transport	**7,044**	***690***	**567**	**0**
SD	Travel (*nb! consumption in Belgium is in exports side*)	**0**	***704***	**0**	**0**
SE	Construction	**0**	**0**	**c**	**728**
SF	Insurance and pension services	**354**	**0**	**0**	**0**
SG	Financial services	**1,704**	**0**	**1,149**	**0**
SH	Charges for the use of intellectual property n.i.e.	**745**	**0**	**117**	**0**
SI	Telecommunications, computer, and information services	**1,724**	**0**	**94**	**984**
SJ	Other business services	**7,662**	**8**	**3,436**	**2,302**
SK	Personal, cultural, and recreational services	**109**	**0**	**117**	**36**
SL	Government goods and services n.i.e.	**104**	**0**	**:**	**35**
	Distribution services			**3,497**	

Source: Eurostat's estimates.

4.3. Spain

Following the simplified approach described earlier, the Spanish National Statistical Institute (NSI) incorporated additional requested information on services trade by modes of supply to the ITSS survey as of 2013 (Isanta, 2014). The lack of information by modes of supply was mainly due to the fact that for the ITSS surveys, dealing with transactions between residents and non-residents by EBOPs categories and trading partners, the modes of supply were not relevant. Moreover, in order to reduce the burden to respondents the most, the Spanish NSI opted for providing a box where respondents only have to tick (one or more) dominant modes. No figure is required from the respondent at this stage. They only have to report the type of service exported/imported (and its code), the country of destination/origin and the export/import value. However, it seems difficult to expand this survey much more since the degree of complexity and clarification texts populating the survey are already really cumbersome for the respondent. The ITSS survey eventually distinguishes 62 EBOPs categories, much more than those suggested in the MSITS 2010 (p. 132).

Nevertheless, the ITSS survey only covers mode 1 and mode 4 in the case of Spain. In order to get data for services trade supplied by mode 2 (consumption abroad) two different data sources must be used, i.e.: tourist expenditures statistics from the Central Bank of Spain (for the consumption of non-residents in the domestic territory – export of services) and the Residents Travel Survey and the Tourist Movement on Borders (Frontur) Survey from the Spanish NSI (for the consumption abroad of residents – import of services). Moreover, the Central Bank of Spain also has information on the transactions payments with debit/credit cards. The variety of source data and their subsequent heterogeneity may constitute a limitation to develop a proper measure of the amount of services traded through mode 2.

Regarding mode 3 (foreign affiliates' sales or output), which should be covered by FATS statistics, the main problem is that the turnover of foreign affiliates generated in the host country are not broken down by EBOPs type of service (only by activity). A good future strategy would be to separate at least how much goods and services are traded by these affiliates. Presently, the direct integration between ITSS and FATS is difficult to fully cover all transactions made through mode 3. In Spain, inward FATS have more information than outward FATS, which benefit from the other survey on Foreign Direct Investment (FDI). The Structural Business Survey can also be helpful to complement the information coming from inward FATS.

And last but not least, the estimation of services trade by modes of supply also faces another big challenge, which is the conversion from EBOPS categories to NACE/CPA categories. The Annex provides an example of the Spanish economy for the year 2014.

4.4. Germany

The Deutsche Bundesbank (Walter, 2016) has devoted some efforts during the last two years to investigate the allocation of service transactions collected for EBOPS statistics to the different modes of supply. Their starting point was also the simplified approach recommended by the MSITS 2010. In this case, the idea was to allocate service categories to one or two maximum dominant modes. Allocations across modes 1 and 4 were done on the basis of

different scenarios (50/50, 80/20 …) using extra information (e.g. computer services) that could be obtained from income statements from important companies of the sector at hand. The results showed that there was a high sensitivity in the outcomes depending on the type of allocation used, thus leading to a proposal of producing maximum and narrow bandwidths. Attributing the values of the EBOPS categories to mode 2 (single correspondence according to MSITS 2010) were straightforward.

Nevertheless, the Deutsche Bundesbank recognises that no assumption can compete with real information directly collected from the companies so they have designed a questionnaire sent out to fifty companies which import and export services to know more about the different modes of supply.

The treatment of mode 3 through FATS was made using inward FATS statistics data and a bridge matrix linking EBOPs categories and NACE/CPA codes. This bridge matrix is based on existing correspondence tables. However, the work is still in an experimental stage.

5. Conclusions

Trade negotiators and the academic community alike need a trade data set by modes of supply to formulate their trade negotiating strategies and respond to their analytical questions. With the development of the Manual on Statistics of International Trade in Services (MSITS2010) and the respective Compiler's Guide (available online as white cover version since December 2014), the necessity of a complete trade data set by modes of supply has been reiterated. Actually, since such trade data set by modes of supply is not available, trade economists have often used estimations, particularly, for mode 4 (income flows), which might have been misleading for measuring trade in services through the presence of juridical or natural persons (mode 4) and counterproductive for both national and global objectives.

The MSITS 2010 for the first time included recommendations on the estimation of international services trade by modes of supply. However, the implementation of these concepts and definitions to obtain comparable data depends on the countries national priorities and budgetary resources allocated for statistical work. Despite the efforts of Eurostat and some EU Member States (Spain, Germany) to increase the availability of such trade data set, it is still needed some kind of regulatory statement that integrates the production of these data into the regular statistical production process of the National Statistical Institutes.

As a result, it is necessary to complement official data with estimates that follow as much as possible the international concepts in order to meet the needs of the trade negotiators and academicians; and the GTAP Project should take note of it.

References

Isanta, J.A. (2014), "Trade in services by modes of supply: experience and first results from Spain", Meeting on the Liaison Platform on ITSS, Eurostat, Luxembourg, June 19.

Walter, J. (2016), "Services trade statistics by modes of supply: a progress report", Meeting of the OECD Working Party on International Trade in Goods and Trade in Services Statistics, OECD, Paris, March 21-24.

Disclaimer

This paper is mostly based on other reference documents such as the Manual on Statistics of International Trade in Services 2010; internal reports of the Eurostat's Working Group on International Trade in Services statistics; information collected from the OECD's Working Party on International Trade in Goods and Trade in Service Statistics (March 2016); a bilateral meeting with the Spanish National Statistical Institute (March 2016) and the recent developments of the Eurostat's Project on the estimation of Modes of Supply. The views expressed herein are those of the authors and do not necessarily reflect an official position of the European Commission.

Annex

Exports/Outward: simplified allocation of FATS and balance of payments data to modes of supply.

				FATS	**Balance of Payments trade in services**		
				Modes			
EBOPS		FATS		**Mode 3**	**Mode 1**	**Mode 2**	**Mode 4**
SA	**Manufacturing services**	C10-C32	Manufacturing (exc. C33)	**X**		**X**	
SB	**Maintenance and repair services**	**C33**	**Repair and installation of machinery equipment**	**X**		**X**	
SC	**Transport services**	**H**	**TRANSPORTATION AND STORAGE**	**X**	**X**	**X**	
SD	**Travel**	**I**	**Accommodation and food service activities**	**X**		**X**	
SE	**Construction**	**F**	**CONSTRUCTION**	**X**			**x**
SF	**Insurance and pension services**	**K65**	**Insurance, reinsurance and pension funding, except compulsory social security**	**X**	**X**		
SG	**Financial services**	**K64**	**Financial services activities, except insurance and pension funding**	**X**	**X**		
SH	**Charges for the use of intellectual property n.i.e.**	**J59**	**Motion picture, video and TV production, sound recording and music publishing activity**	**X**	**X**		
SI	**Telecommunications, computer and information services**	**J (part)**	Information and communication	**X**	**X**		**X**
SJ	**Other business services**	**M**	Professional, scientific and technical activities	**X**	**X**	**X**	**X**
SK	**Personal, cultural and recreational services**	**R**	Arts, entertainment and recreation	**X**	**X**		**X**
SL	**Government goods and services n.i.e.**	**P85, Q**	Education, Human health and social work		**X**		**X**
	Distribution (wholesale, retail trade) services	G46 G47	Wholesale trade and Retail trade	X	**X** (1)		
	Not allocated (Total - identified above)						

International Trade in Services Survey. Year 2014

EVALUATION OF TRADE POLICY

SPAIN

By type of transaction, type of main service and mode of service supply

Units: percentage

	Mode 1: Cross-border provision	Mode 2: Consumption in Spain (exports) or abroad (imports)	Mode 3: Commercial presence	Mode 4: Presence of natural persons
EXPORTS				
TOTAL	86.6	6.3	2.5	4.6
1.Manufacturing services on physical inputs owned by others	64.9	34.2	0.0	0.8
2. Maintenance and repairs	19.4	63.4	0.0	17.2
3. Transport	85.7	14.1	0.0	0.1
4. Construction	29.4	0.0	43.4	27.2
5. Insurance and pensions (premiums and auxiliary services contributions to pension funds)	85.2	0.0	14.2	0.5
6. Financial	99.7	0.0	0.0	0.3
7. Charges for the use of Intellectual property	99.5	0.0	0.0	0.5
8. Telecommunications, computer and information	97.9	0.0	0.5	1.6
9. Business	90.3	0.1	0.4	9.2
9.1. Research and development R&D	97.5	0.0	0.5	2.0
9.2. Professional and management consultancy	94.3	0.2	0.1	5.4
9.3. Technical, trade-related and other business services	87.9	0.1	0.6	11.5
10. Personal, cultural and leisure	91.4	1.1	2.0	5.4
11. Government goods and services	88.4	5.9	0.0	5.7
IMPORTS				
TOTAL	95.6	2.0	0.2	2.2
1.Manufacturing services on physical inputs owned by others	52.5	47.0	0.0	0.5
2. Maintenance and repairs	53.4	43.8	0.0	2.8
3. Transport	98.5	1.4	0.0	0.0
4. Construction	70.6	0.0	17.0	12.4
5. Insurance and pensions (premiums and auxiliary services contributions to pension funds)	93.7	5.2	0.9	0.2
6. Financial	99.5	0.0	0.0	0.5
7. Charges for the use of Intellectual property	99.2	0.0	0.0	0.8
8. Telecommunications, computer and information	99.5	0.0	0.0	0.5
9. Business	95.8	0.1	0.1	4.0
9.1. Research and development R&D	99.4	0.0	0.0	0.6
9.2. Professional and management consultancy	97.4	0.3	0.1	2.1
9.3. Technical, trade-related and other business services	94.5	0.1	0.2	5.2
10. Personal, cultural and leisure	85.1	0.1	0.0	14.9
11. Government goods and services	52.2	2.5	0.0	45.3

Source: National Statistics Institute