Exploratory Estimates of U.S. International Services by Mode of Supply

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Abstract

This paper presents exploratory estimates of U.S. international supply of services by mode. There is interest in international services by mode partly because government trade negotiators structure agreements around these modes. The estimates are based on statistics on trade in services published by the U.S. Bureau of Economic Analysis (BEA), an estimate prepared for this paper of distribution services, and BEA's foreign affiliate statistics covering services supplied through the channel of direct investment by affiliates of multinational enterprises. The results indicate that mode 3, commercial presence, is the predominant mode of supply for both services supplied by and services received by the United States. The value of mode 3 exceeds the value of the other three modes combined. Mode 1, cross-border supply, is next largest for both services provided and services received, followed by mode 2. Mode 4, the presence of natural persons, has the smallest value for both directions of supply. The paper also provides information on estimates by mode developed by other countries. The paper concludes by offering next steps for further BEA research.

The views expressed in this paper are solely those of the author and not necessarily those of the U.S. Bureau of Economic Analysis or the U.S. Department of Commerce.

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1. Introduction

This paper presents a set of exploratory estimates for U.S. international services categorized by mode of supply. Governments are especially interested in international services by mode because trade negotiators structure agreements around these modes. These modes represent the paths businesses take to access foreign markets.

Under the General Agreement on Trade in Services (GATS), countries take on commitments with respect to market access for different service sectors. Countries can limit their commitments with respect to the different modes of supply. The commitments are structured in line with the services sectoral classification list (W/120), which is a comprehensive list of services sectors and sub-sectors covered under the GATS. The World Trade Organization (WTO) compiled this list in 1991 to facilitate the Uruguay Round negotiations, ensuring cross-country comparability and consistency of the commitments undertaken.

2. The Four GATS Modes of Supply Defined

As explained in the *Manual on Statistics of International Trade in Services 2010* (MSITS 2010)[2], the GATS modes of supply are defined based on the location of the supplier and the consumer, taking into account their nationality. Figure 1 below from MSITS 2010 provides a synopsis of the 4 modes:

• Cross-border supply (Mode 1), where both the supplier and the consumer remain in their respective territories (which would correspond to the traditional notion of trade)

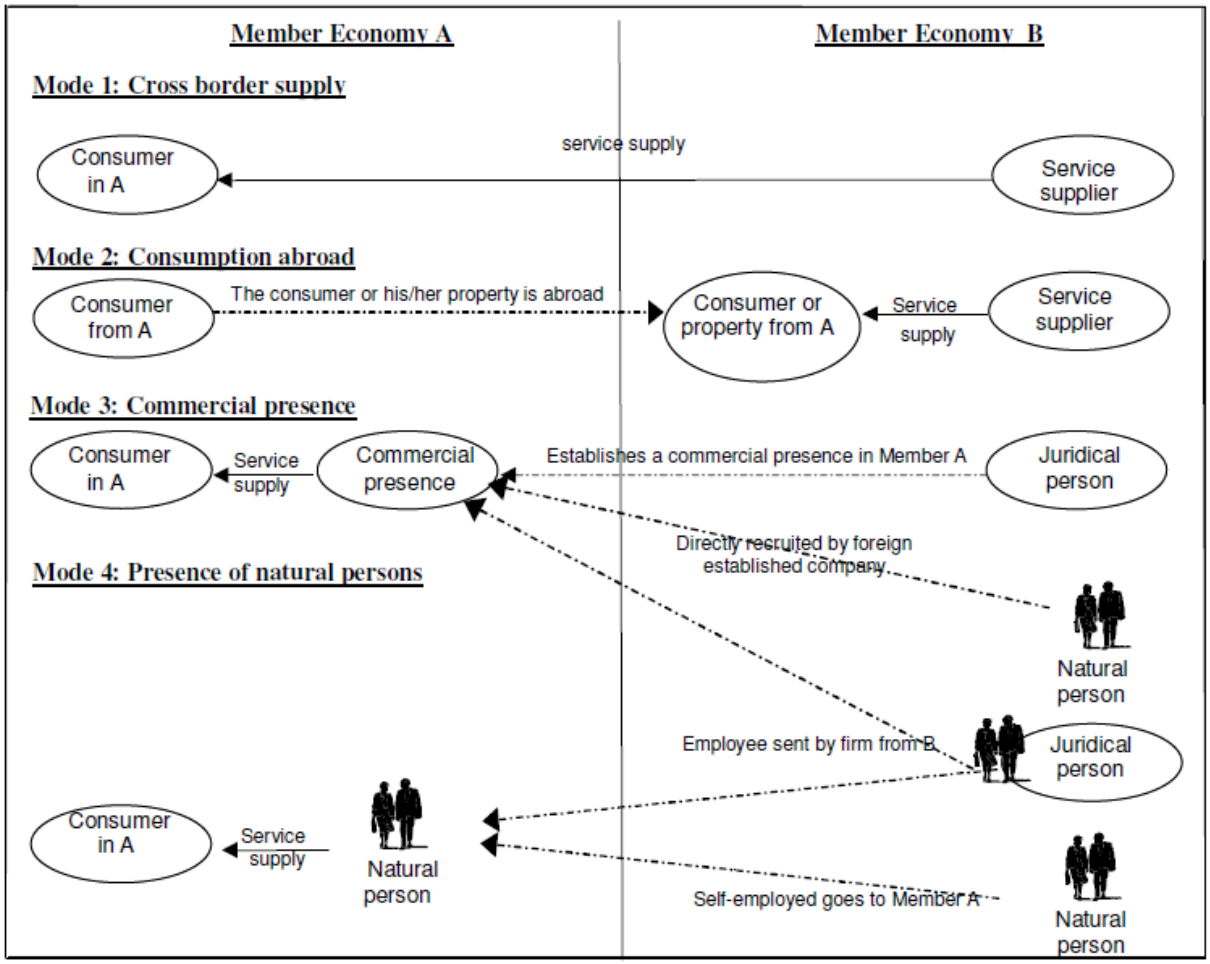
• Consumption abroad (Mode 2), where the consumer consumes the service outside his or her home territory (as is the case for tourists consuming travel services)

• Commercial presence (Mode 3), where service suppliers establish (or acquire) an affiliate, branch, or representative office in another territory through which the supplier provides their services (as is the case, for example, when a foreign IT firm creates a subsidiary in the United States in order to supply IT services to the United States)

• Presence of natural persons (Mode 4), where individuals (either employees or self-employed service suppliers) are present abroad in order to supply a service (as is the case, for example, when an independent software designer travels abroad to oversee a six-month-long software development project)

[2] *Manual on Statistics of International Trade in Services 2010* (United Nations: New York, 2012).

Figure 1.[3] A View of Modes of Supply



[3] Notes on Figure 1:

1) A natural person of a member economy is defined in paragraph (k) of article XXVIII of the GATS as a national of that Member economy or a natural person who has a right to permanent residence in that Member economy.
2) In article XXVIII (l), the GATS defines a juridical person as any legal entity duly constituted or otherwise organized under applicable law, whether for profit or otherwise, and whether privately owned or governmentally owned, including any corporation, trust, partnership, joint venture, sole proprietorship, or association.
3) A more detailed description of the GATS modes of supply is provided in chapter V of MSITS.

3. Historical Perspective: BEA's Past Efforts to Assess the Feasibility of Developing Supply of Services Statistics by Mode

In 1996, the U.S. Bureau of Economic Analysis (BEA) responded to a WTO questionnaire designed to explore the feasibility of data collection or estimation of services statistics by modes of supply.[4] The questionnaire, which was passed to member countries by the OECD, was divided into three parts: Part A dealt with general questions on the feasibility of data collection or estimation of services statistics broken down by modes of supply. Part B addressed the feasibility of data collection or estimation at the detailed level of the OECD/Eurostat services classification that was similar in level of detail to that laid out in today's extended balance of payments (EBOPS 2010) breakdown. Part C referred to the relative importance of the different modes for the same OECD/Eurostat level of detail. BEA's full response to parts A and B is provided in the appendix to this paper.[5] The main points of the response are summarized below. BEA's response to Part C, which is not included in the appendix, indicates BEA's best guess at that time about which services were "dominant," "relevant," or "not relevant" by mode of supply.

At that time, BEA was not optimistic about the possibility of collecting information on trade in services broken down by mode because of BEA's limited resources available to process the information and the additional burden that this would place on businesses that report to BEA. Government regulations mandate that U.S. statistical agencies limit reporting burden on U.S. businesses.[6] BEA's response also mentioned a concern about the ability of businesses to provide information by mode from their accounting systems because a single transaction will often involve multiple modes of supply, a point that is touched on in more detail in Section 6 below.

In response to a question about the best method to obtain data by mode of supply, BEA highlighted its long-standing collection of information on foreign affiliate statistics (FATS) covering services supplied by affiliates of multinational enterprises, which generally corresponds with mode 3 as defined by GATS. The larger challenge is measuring the

[4] Letter from Ms. Anne Chadeau, National Accounts Division, OECD Statistics Directorate, referencing STD/SERV(96)14.

[5] United States Reply to World Trade Organization Questionnaire on Modes of Supply in Trade-in-Services Statistics (STD/SERV(96)14), prepared by Obie Whichard who at that time was serving as Chief of the Research Branch of BEA's International Investment Division. October, 1996.

[6] The Paperwork Reduction Act was enacted to minimize the paperwork burden for individuals; small businesses; educational and nonprofit institutions; Federal contractors; State, local, and tribal governments; and other persons resulting from the collection of information by or for the Federal Government. The Act generally provides that every Federal Agency must obtain approval from the U.S. Office of Management and Budget before using identical questions to collect information from 10 or more persons. See the Paperwork Reduction Act (44 U.S.C. 3501, et seq).

other three modes. BEA commented that although some services types fall neatly into a specific mode such as travel which represents consumption abroad, most do not. The WTO requested that compilers use their best judgement to allocate services transactions across modes by arbitrarily choosing the most dominant mode for each service type. This approach is essentially the "simplified approach" recommended today in international guidelines. The implied assertion that compilers have special knowledge of the breakdown is likely overstated. Apart from the few services that obviously fall under one mode, there is little reason to think that compliers will have insights about the breakdown by mode because they typically do not have in-depth knowledge of how businesses conduct their operations. Moreover, even those who work in an industry may not have a good sense for how to allocate transactions across modes because companies typically do not track transactions by mode in their accounting systems. The challenge is compounded because a given transaction can involve multiple modes. This exercise, therefore, results in rough approximations that would not be nearly reliable enough for trade negotiators. The WTO is interested in looking for ways that compilers could enhance existing data collection mechanisms that would allow for the collection of reliable information from businesses, keeping respondent burden in mind.

BEA published an article in 2006 that described the delivery of services on the basis of the General Agreement on Trade in Services and the relationship of these modes to BEA's data.[7] The article pointed out that BEA is not able to precisely identify services provided and received through each mode, though in some cases the mode may be evident from the nature of the service. In describing each mode, the article listed service types that would likely fall primarily under that mode.

The article also touched on the definitional differences between balance of payments (BOP), FATS, and GATS modes of supply, which would make it difficult to harmonize these statistics. For example, some components of the GATS modes, such as distribution services, are not part of balance of payments statistics. As another example, mode 4 applies to individuals whose period of residence or employment in a foreign country is nonpermanent, but "permanence" is not defined; in practice, countries commonly use periods of 2-5 years rather than the 1-year rule used in determining residency for balance-of-payments purposes. This memo addresses additional definitional differences below.

Whichard also included a comment in his cover letter questioning the objective to harmonize the GATs with BPM5 classification. "Ensuring the compatibility of existing

[7] See the appendix "Modes of Supply and Channels of Delivery of Services Sold in International Markets" from the article "U.S. International Services Cross-Border Trade in 2005 and Sales Through Affiliates in 2004" by Koncz, Mann, and Nephew, *Survey of Current Business*, October 2006.

statistical components is a worthy goal, but if components differ, it is not clear how they are to be made 'compatible.' For example, where GATS classifies an item differently from the BPM5 or OECD/Eurostat classification, is it envisioned that the classifications will be harmonized in some way, with changes to be made in one or more of them, or is the aim just to identify and list the differences? If harmonization is to occur, through what mechanism will it be brought about?"

4. New Exploratory Estimates

The exploratory estimates are based on an allocation of 1) BEA's most detailed trade-in-services statistics that are published annually as an extension of the U.S. BOP accounts, 2) an estimate of distribution services, and 3) BEA's FATS statistics covering services supplied through the channel of direct investment by affiliates of multinational enterprises (MNEs).[8]

BEA's current data collection systems do not collect information by mode. Therefore, the allocation method follows the approach outlined in chapter V of the MSITS and the associated MSITS 2010 Compilers Guide.[9] These references advise compilers to conduct a simplified allocation of existing statistics as given in table V.2 in MSITS. This method consists of attributing service categories to either one dominant mode or to several modes based on an assumption on how specific service items are most likely supplied by exporters (or to importers) of the economy.

BEA publishes the following service types in the annual statistics on trade in services:

Maintenance and repair services n.i.e.
Transport
Sea transport
Freight
Port
Air transport
Passenger
Freight
Port

[8] See Table 2.1. U.S. Trade in Services, by Type of Service; Table 4.2 Services Supplied to Foreign Persons by U.S. MNEs Through Their MOFAs, by Country of Affiliate and by Destination; and Table 5.1 Services Supplied to U.S. Persons by Foreign MNEs Through Their MOUSAs at https://www.bea.gov/iTable/iTable.cfm?ReqID=62&step=1%20-%20reqid=62&step=9&isuri=1&6210=4#reqid=62&step=9&isuri=1&6210=4. For Table 4.2, the applicable data are under the column head "To the host country".

[9] The Guide is the unedited white-cover version from December of 2014. See section C of chapter 14.

Other modes of transport
Postal services
Road and other transport
Travel (for all purposes including education)
Business
Expenditures by border, seasonal, and other short-term workers
Other business travel
Personal
Health related
Education related
Other personal travel
Insurance services
Direct insurance
Reinsurance
Auxiliary insurance services
Financial services
Securities brokerage, underwriting, and related services
Financial management, financial advisory, and custody services
Credit card and other credit-related services
Securities lending, electronic funds transfer, and other services
Charges for the use of intellectual property n.i.e.
Industrial processes
Computer software
Trademarks
Franchise fees
Audio-visual and related products
Movies and television programming
Books and sound recordings
Broadcasting and recording of live events
Other intellectual property
Telecommunications, computer, and information services
Telecommunications services
Computer services
Information services
Other business services
Research and development services
Professional and management consulting services
Legal services
Accounting, auditing, and bookkeeping services
Business and management consulting and public

relations services
Advertising
Technical, trade-related, and other business services
Architectural and engineering services
Architecture and engineering abroad
Foreign contractors' expenditures in the United States
Construction
Construction abroad
Foreign contractors' expenditures in the United States
Industrial engineering
Mining
Mining abroad
Foreign contractors' expenditures in the United States
Operating leasing services
Trade-related services
Sports and performing arts
Training services
Other business services n.i.e.
Government goods and services n.i.e.

n.i.e. – not included elsewhere

The exploratory estimates exclude exports of **government services** because services supplied internationally by government agencies (covered under *government goods and services n.i.e.*) are not of interest to officials in the context of the GATS.[10] However, imports include commercial services purchased in host economies by government personnel and their dependents under mode 2, consumption abroad.[11]

The exploratory estimates take advantage of BEA's comprehensive FATS to identify services supplied through mode 3. FATS, as defined in MSITS 2010, do not precisely match the coverage of mode 3 under GATS. The GATS definition includes services supplied by foreign affiliates to local economies, whereas FATS include services supplied to other foreign economies. Moreover, the GATS notion of commercial presence does not conform to the BOP definition of a resident in the host economy in certain cases. In this case, the services supplied by the entity with a commercial presence would be covered under GATS, but not FATS. For example, a construction company may set up an unincorporated site office in a foreign country to carry out a short-term construction project, establishing a foreign commercial presence but not a foreign affiliate. Construction services are supplied in some cases through affiliates

[10] Paragraph 5.35 of MSITS

[11] Table V.2 MSITS. Article 1 of the GATS, describing the scope of the agreement, excludes services supplied in the exercise of governmental authority (see http://unstats.un.org/unsd/tradeserv/TFSITS/msits2010/annexes.htm).

(mode 3) and in others through unincorporated site offices (mode 4) using workers sent temporarily abroad to staff the site office. Consequently, the exploratory estimates split **construction services** between mode 3 and 4. The estimates treat **mining services** similarly.

Some of the value of several service types listed under mode 1 may also involve elements of mode 2 and 4. These modes would apply if, for example, a client travels to the supplier's headquarters for a demonstration of new capabilities related to telecommunications services (mode 2); or if an insurance agent travels abroad to discuss the terms of a contract with a client (mode 4).[12]

The assumptions used to allocate the value of services to each of the four modes are described below, followed by the results.

A. Assumptions for Assigning Service Types to Modes

For both **telecommunications** and **insurance**, the service would predominantly be produced in the country where the enterprise is located; therefore, the exploratory estimates allocate these fully to mode 1. Mode 1 also predominates for **transport (excluding port)**, **financial services**, **information services**, and **charges for the use of intellectual property**. Therefore, the exploratory estimates make no provision for allocating a portion of the value for these services to modes 2 and 4 because the portions delivered through these modes are presumed to be small and because BEA lacks source data to estimate these portions. The full value of these services is recorded under mode 1.

The nature of the **computer services** industry lends itself to the supply of services through mode 4. Custom programming, technical consultancy related to software, systems maintenance and other support services, and training are often provided by a contractual service supplier working abroad with the client, either employees of a foreign service supplier or self-employed individuals. Therefore, the exploratory estimates allocate the value of **computer services** equally between modes 1 and 4.

Some types of **other business services**, such as **operating leasing services** and **trade-related services** are also predominantly supplied through mode 1.[13]

However, **professional and management consulting services**, which are particularly large for the United States, comprising roughly half of other business services exports and imports, likely involve a large element of mode 4. **Professional and management**

[12] Paragraph 5.38 MSITS
[13] Paragraph 5.36 MSITS

consulting services is a particularly interesting case because their value in the U.S. BOP accounts includes allocated expenses covering general overhead and stewardship received by a parent company from its affiliates. These allocated expenses largely utilize mode 1, although they are also likely to include an element of mode 4, where personnel from the parent company travel to the affiliate to provide stewardship. More than 80 percent of professional and management consulting exports and imports in the U.S. BOP accounts involve transactions between parents and affiliates, suggesting the significance of allocated expenses. The exploratory estimates assume that two-thirds of **professional and management consulting services** involves mode 1 and one third involves mode 4.

Research and development services, another service type that includes expenses of multinational enterprises allocated across various parts of the enterprise, is presumed to involve only a small element of mode 4 because the nature of R&D enables much of the work and oversight of an affiliate's work to be provided through mode 1. Therefore, these exploratory estimates do not attempt to split this service between mode 1 and 4, although that is the treatment recommended in MSITS.[14] Research and development services are included as part of **other business services** in the table below.

MSITS notes that **distribution services** would "present a particularly useful complement to the services statistics covered in the balance of payments accounts" for measuring trade in services by mode of supply. Estimating distribution services would provide "a more complete analysis of the international supply of services."[15] Distribution services are not separately measured in the U.S. BOP accounts because the value of international wholesaling and retailing services are included indistinguishably in the value of the traded goods. However, several years ago BEA presented exploratory estimates of the value of these distribution services.[16] The exploratory estimates presented in this memo update these estimates and allocate them to mode 1 because they are typically associated with cross-border transactions.

Following the approach BEA employed several years ago, distribution services are measured by multiplying the share of goods exports arranged by wholesalers by an estimate of the portion of wholesale trade that represents distribution services. Recent information available from the U.S. Census Bureau indicates that wholesalers accounted for 21.7 percent of the export value of goods.[17] The 21.7 percent share is

[14] See MSITS table V.2

[15] Paragraph 5.40 and 5.41 MSITS

[16] See Borga, "Improved Measures of U.S. International Services: The Cases of Insurance, Wholesale and Retail Trade, and Financial Services," Chapter 2 of the NBER's publication "International Trade in Services and Intangibles in the Era of Globalization," May 2009 at www.nber.org/chapters/c11606.pdf

[17] U.S. Census Bureau "A profile of U.S. Importing and Exporting Companies, 2012-2013" released April 7 2015 at http://www.census.gov/foreign-trade/Press-Release/edb/2013/index.html.

applied to the value of goods exports in 2014, $1.6 trillion, resulting in an estimate that U.S. wholesalers arranged for the export of about $350 billion of these goods. The previous BEA study assumed that distributive services accounted for 22 cents of every $1 of sales for these wholesalers. Therefore, using the same rate, the value of distributive services supplied by wholesalers for these goods exports was about $78 billion.

No data are available for the share of imports arranged by foreign wholesalers. However, under the assumption that the same share of goods was imported through foreign wholesalers as was exported through U.S. wholesalers, foreign wholesalers arranged about $500 billion of imports of goods in 2014. Assuming the same rate of 22 cents of distributive services for every $1 of sales for foreign wholesalers implies distribution services of about $113 billion.

Tourism and travel-related services (sector 9 of the W/120) is generally associated with mode 2. However, trade in this sector also occurs through other modes. For example, a nonresident tourist guide who accompanies a tour group of compatriots would fall under mode 4. The travel estimates shown in the table below under mode 2 include both business and personal travel because both represent mode 2. The exploratory estimates also include an “of which” category for sector 9 tourism-related travel that excludes non-tourism-related business, education, and health-related travel expenditures because of special interest in this area. Note that a portion of the BEA’s data for business travel represents tourism expenditures because business travelers often engage in tourism as part of a business trip. BEA follows international BOP accounting guidelines in which business travel covers goods and services acquired for personal use by persons whose primary purpose of travel is for business. Therefore, the “of which” tourism category is not complete because BEA is unable to tease tourism spending out of business travel.

Conceptually, travel expenditure on goods should be separately identified from travel expenditure on services such that only the services portion of travel expenditure should be allocated to mode 2. The goods portion should not be allocated to any mode of supply under GATS. However, this adjustment was not possible because of a lack of source data on travel expenditures by type.

The **education services** listed as part of travel services under mode 2 does not include services provided through distance learning technologies. These services provided through distance learning technologies are included under mode 1 as part of **other business services**. BEA collects transactions from institutions that provide education services through distance learning technologies on the BE-125, “Quarterly Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons,” under the category “educational and training services.”

Similar to education services, **health-related services** listed as part of travel services under mode 2 do not include services provided remotely. Remotely provided "telemedicine" services are recorded under mode 1 as part of **other business services**. These remotely provided services are collected on the BE-125.[18]

Education and **health-related services** could also be provided through mode 4 if educators and physicians travel abroad to provide their services. One example would be the services provided by physicians associated with the organization Doctors Without Borders. No provision is made for these services provided through mode 4 because BEA lacks source data on which to base a measure, and the value of these services is presumed to be small.[19]

Maintenance and repair services n.i.e. are assumed to cover services associated with the movement of equipment and therefore are included under mode 2.

As mentioned in the introductory section above, the exploratory estimates exclude exports of **government services**. However, imports include commercial services purchased in host economies, specifically, expenditures by government units in diplomatic and similar enclaves; expenditures by government personnel and their dependents; and other commercial services n.i.e. purchased by government. BEA uses data from the Department of Defense to estimate the second of these three items, commercial services purchased in host economies by government personnel and their dependents. The value of these expenditures was roughly $8 billion in 2014. This amount is an overestimate for GATS because it includes goods, and an underestimate because it excludes personnel from other U.S. government agencies stationed abroad such as the State Department. For the purpose of the exploratory estimates, it is assumed that these two discrepancies are offsetting.

Architectural and engineering services are split among modes 1, 3, and 4 in the exploratory estimates. This service type likely involves a significant portion delivered through mode 1 because the planning and design can be provided cross-border. Modes 3 and 4 come into play as they do for construction and mining.

Mode 4 includes the fees earned by athletes and performing artists, a type of "other" **personal, cultural, and recreational services** because these persons typically earn fees by traveling abroad to perform and participate in sporting events.

[18] The completeness of the coverage of BEA's data for this category is difficult to assess. However, BEA is revising the BE-125 survey to better capture this and other personal, cultural, and recreational services.
[19] The updated BE-125 survey should better capture these types of services as well.

B. Results

The results, which are shown in the following tables, indicate that mode 3, commercial presence, is the predominant mode of supply for both services supplied and services received. The value of mode 3 exceeds the value of the other three modes combined for both services supplied and services received. Mode 1, cross-border supply, is next largest for both services supplied and services received, followed by mode 2. Mode 4, the presence of natural persons, has the smallest value for both directions of supply.

U.S. Supply of Services by Mode
Exploratory Estimates for 2012-15
(millions of dollars)

SERVICES SUPPLIED				
MODE 1	**2012**	**2013**	**2014**	**2015**
Transport (excluding port)	62,224	63,922	67,144	62,931
Insurance services	16,790	16,696	17,312	17,142
Financial services	76,692	95,131	107,712	102,461
Telecommunication	13,749	14,471	13,736	12,645
Information services	6,207	6,770	7,156	7,299
Charges for the use of intellectual property n.i.e.	124,440	128,034	129,890	124,664
half of Computer services	6,277	6,589	7,076	7,976
three quarters of Other business services except Construction, Mining, Architectural and engineering, Sports and performing arts, and Professional and management consulting services	34,368	34,999	37,838	37,948
one third of Architectural and engineering services	4,470	4,248	4,038	3,806
two thirds of Professional and management consulting services	35,873	37,249	39,947	43,491
Distribution services	74,597	76,002	77,975	72,102
Total	**455,688**	**484,111**	**509,824**	**492,464**
MODE 2				
Travel (for all purposes including education and health)	161,632	177,484	191,325	204,523
of which: tourism (other personal travel from the ITAs)	*94,068*	*101,877*	*113,382*	*122,412*
Port component of Transport	21,720	22,854	23,557	24,290
Maintenance and repair services n.i.e.	17,186	18,568	22,132	24,036
Total	**200,538**	**218,906**	**237,014**	**252,849**
MODE 3				
Services supplied by US MNEs through their MOFAs to the local market	1,010,970	1,030,036	1,140,689	*NA*
half of Construction	1,591	1,052	908	1,263
half of Mining	1,766	1,856	2,005	2,203
one third of Architectural and engineering services	4,470	4,248	4,038	3,806
Total	**1,018,797**	**1,037,192**	**1,147,640**	
MODE 4				
half of Construction	1,591	1,052	908	1,263
half of Mining	1,766	1,856	2,005	2,203
one third of Architectural and engineering services	4,470	4,248	4,038	3,806
half of Computer services	6,277	6,589	7,076	7,976
one quarter of Other business services except Construction, Mining, Architectural and engineering, Sports and performing arts, and Professional and management consulting services	11,456	11,666	12,613	12,649
one third of Professional and management consulting services	17,669	18,347	19,676	21,421
Other personal, cultural and recreational services (Sports and performing arts)	891	710	803	790
Total	**44,120**	**44,467**	**47,118**	**50,107**

SERVICES RECEIVED				
MODE 1	**2012**	**2013**	**2014**	**2015**
Transport (excluding port)	71,464	76,827	80,309	82,298
Insurance services	55,513	53,420	51,824	47,772
Financial services	16,703	21,545	24,906	25,162
Telecommunication	7,169	7,341	6,759	6,242
Information services	1,744	2,041	2,461	2,413
Charges for the use of intellectual property n.i.e.	38,661	38,860	42,208	39,495
half of Computer services	11,933	12,826	13,547	13,893
three quarters of Other business services except Construction, Mining, Architectural and engineering, Sports and performing arts, and Professional and management consulting services	32,635	34,354	34,014	35,367
one third of Architectural and engineering services	1,602	1,699	1,804	1,874
two thirds of Professional and management consulting services	22,252	23,074	26,088	27,092
Distribution services	109,981	109,527	113,883	108,507
Total	**369,657**	**381,514**	**397,803**	**390,115**
MODE 2				
Travel (for all purposes including education and health)	100,338	98,120	105,529	112,873
of which: tourism (other personal travel from the ITAs)	*72,831*	*70,551*	*79,642*	*87,846*
Port component of transport	13,521	13,807	13,851	14,752
Maintenance and repair services n.i.e.	8,015	7,420	7,521	8,996
Purchases abroad by government personnel and their dependents	10,959	10,125	9,648	8,409
Total	**132,833**	**129,472**	**136,549**	**145,030**
MODE 3				
Services supplied to US persons by foreign MNEs through their MOUSAs	813,285	891,891	918,707	*NA*
half of Construction	1,632	1,266	1,083	1,471
half of Mining	771	947	881	1,047
one third of Architectural and engineering services	1,602	1,699	1,804	1,874
Total	**817,290**	**895,803**	**922,475**	
MODE 4				
half of Construction	1,632	1,266	1,083	1,471
half of Mining	771	947	881	1,047
one third of Architectural and engineering services	1,602	1,699	1,804	1,874
half of Computer services	11,933	12,826	13,547	13,893
one quarter of Other business services except Construction, Mining, Architectural and engineering, Sports and performing arts, and Professional and management consulting services	10,878	11,451	11,338	11,789
one third of Professional and management consulting services	10,960	11,365	12,849	13,344
Other personal, cultural and recreational services (Sports and performing arts)	819	947	939	1,103
Total	**38,595**	**40,501**	**42,441**	**44,521**

5. Estimates Prepared by other Countries

Information on estimates prepared by other countries is limited. Other countries may have begun to explore this area, but like BEA they are at the early stages and consequently have not made their work available. However, the OECD's Working Party on International Trade in Goods and Services (WPTGS) Informal Reflection Group on Detailed Services Statistics (IRG3) has begun to compile information from its member countries on the efforts by these countries to prepare estimates by mode.

IRG3 asked countries to provide "Any experiences regarding the estimation of Services by Modes of Supply, either using the simplified method or, in the case the breakdown is compiled using a survey, the detailed structure of questions and instructions for collecting services by modes."

Sturgeon, in a report commissioned by the United Nations Conference on Trade and Development (UNCTAD), suggests that countries have been reluctant to compile BOP statistics by mode of delivery due to high collection costs and difficulties with collecting mode of delivery concepts on their business surveys.[20]

Nevertheless, Canada, New Zealand, and India have taken steps to compile trade in services data by mode of supply.

A. Canada

Statistics Canada is exploring the possibility of leveraging an administrative data source to measure mode 4 services trade.[21] In addition, Canada has projects underway to develop inward FATS and expand their outward FATS.[22]

Canada's current estimates, which are based on enterprise surveys, do not distinguish mode 1 and mode 4. Canada is reluctant to add questions about modes of supply to their surveys because of the added response burden. As an alternative, they are considering using tax data to estimate mode 4. Canadian companies must report payments to nonresidents for services they performed in Canada that they did not perform in the ordinary course of employment. Canada notes that this alternative would only work for imports (debits) of mode 4.

One challenge identified in Canada's approach is that the tax data would not capture services provided by juridical foreign persons sent by foreign firms because these firms would likely pay the salary of their workers. Therefore, the Canadian estimate would just cover services provided by natural (self-employed) persons.

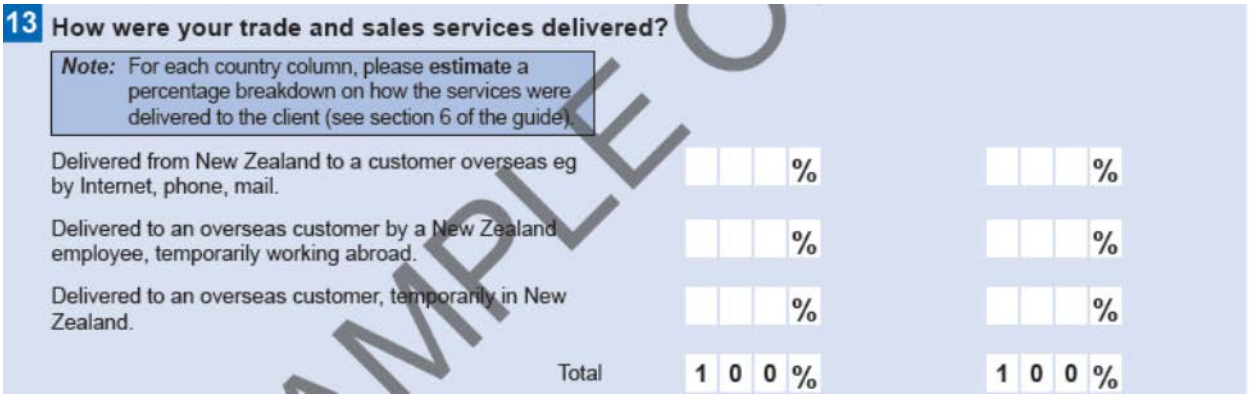
Statistics Canada notes other shortfalls, such as that tax data do not provide the type of service provided; however, Canada suggests that this information could be imputed

[20] See Timothy Sturgeon, *International Trade in ICT services and ICT-enabled services* STD/CSSP/WPTGS(2015)20, March 13, 2015, paragraph 33.
[21] See Denis Caron, Statistics Canada, *Modes of Supply in the Canadian International Accounts,* STD/CSSP/WPTGS(2015)8, March 18, 2015.
[22] "Development of Inward Foreign Affiliate Statistics (FAS) in Canada" and "Expanding Canada's outward foreign affiliate statistics." Presentations at the Statistics Canada/U.S. Census Bureau/U.S. Bureau of Economic Analysis Coordination Meeting, February 11, 2016.

based on the available information on the industry of the provider or the industry of the Canadian firm. Moreover, the tax data are not collected for statistical purposes, which may constrain the ability of Canada's compilers to use these data.

B. New Zealand

For the first time in 2011, Statistics New Zealand collected data on how commercial services are delivered overseas.[23] The information covers modes 1, 2, and 4. Mode 3 was not covered.[24] They included the following question as part of their survey instrument for collecting services trade:



13 How were your trade and sales services delivered?

Note: For each country column, please **estimate** a percentage breakdown on how the services were delivered to the client (see section 6 of the guide).

Delivered from New Zealand to a customer overseas eg by Internet, phone, mail.	%	%
Delivered to an overseas customer by a New Zealand employee, temporarily working abroad.	%	%
Delivered to an overseas customer, temporarily in New Zealand.	%	%
Total	1 0 0 %	1 0 0 %

Their results showed that cross-border supply accounted for 86 percent of commercial services supplied, which they thought appeared high. They speculated that "New Zealand's international connections and networks lack sufficient depth to facilitate trade via modes 2 and 4." Mode 2 (persons travelling to New Zealand) accounted for 3 percent. Mode 4 accounted for 12 percent. BEA's exploratory estimates for services supplied are quite similar: mode 1 accounts for 83 percent, mode 2 accounts for 5 percent, and mode 4 accounts for 12 percent of commercial services.

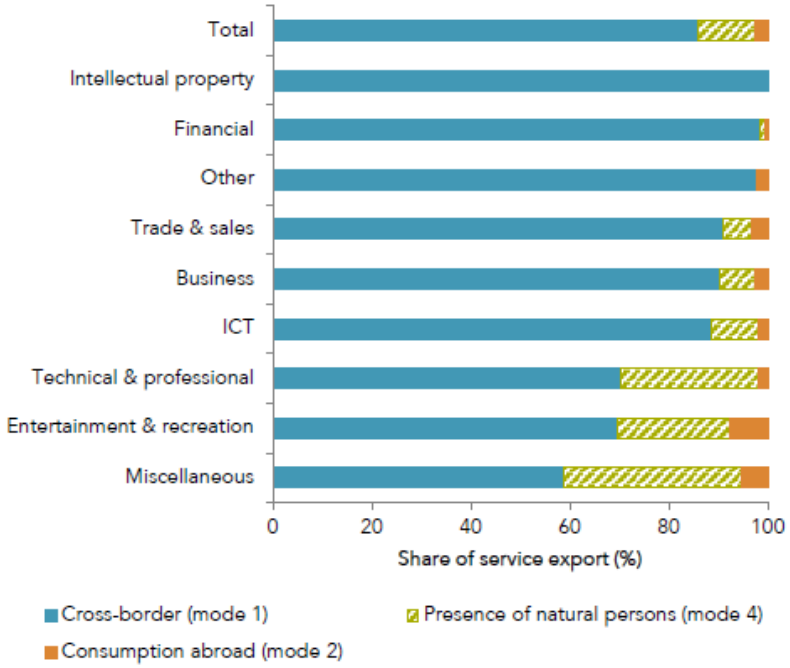
New Zealand's study reported that while most service types were dominated by cross-border supply, some types of services had a lower proportion of mode 1 supply than others (see figure below). The service types in the figure are not clearly defined, making

[23] Commercial services exclude travel and transportation.

[24] See Lisa Meehan, New Zealand's international trade in services: A background note, Research Note 2014/1, June 2014 prepared for the New Zealand Productivity Commission at http://www.researchgate.net/publication/265553284_New_Zealand's_international_trade_in_services_A_background_note.

it difficult to make a direct comparison with BEA's exploratory estimates. However, it is probably safe to assume that New Zealand's and BEA's coverage of intellectual property and of financial services are comparable. Both countries' estimates are almost entirely accounted for by mode 1 for these service types. Similarly, both countries attribute a small share of business, professional, and technical services to mode 4. New Zealand's ICT (information and communications technology) services comprise telecommunications, computer services, and licenses for computer software. New Zealand's coverage, which is similar to BEA's telecommunications, computer, and information services, appears to be less in line. New Zealand attributes roughly 10 percent to mode 4 whereas BEA attributes roughly 33 percent.

Figure 20 Commercial service exports by mode of supply and type of service, 2011



Source: Statistics New Zealand Census of International Trade in Services and Royalties

C. India

The Reserve Bank of India (RBI) collects data on its Survey on Computer Software and Information Technology Enabled Services (ITES) Exports[25] that includes data by type of

[25] https://rbi.org.in/Scripts/BS_ViewForms.aspx?FCId=40

service, importing country, and mode of supply. They included the following mode-of-supply question as part of their survey instrument:

6. Exports - Modes of Supply

Total invoice on software and IT services exports as per the Modes of Supply during the reference period

	Exports - Modes of Supply	Amount (in Rupees)
i.	Services provided/ rendered to foreign entities/persons from Indian office (Cross border supply)	
ii.	Services provided/ rendered to foreign entities/persons while they are on visit to India	
iii.	Onsite services provided by deputing employees abroad	
Total		**0.0**

The survey captured the following types of services:

3. Business Activity ***(According to the principal source of Export Revenue)***

Please provide approximate percentage share of various business activities, describing your company, in total business (A+B+C+D)

	A. IT Services	Percent Share
i.	Hardware and software consultancy and implementation services	
ii.	Maintenance and repair of computers and peripheral equipment	
iii.	Data recovery services, provision of advice, and assistance on matters related to the management of computer resources	
iv.	Analysis, design and programming of systems ready to use (including web page development and design), and technical consultancy related to software	

v.	Development, production, supply and documentation of customised software, including operating systems made on order for specific users	
vi.	Systems maintenance and other support services such as training provided as part of consultancy;	
vii.	Data processing services such as data entry, tabulation, and processing on a timesharing basis;	
viii.	Web page hosting services (i.e., the provision of server space on the internet to host clients' web pages)	
ix.	Computer facilities management	
x.	Non-physical exports of packaged software	
xi.	Any other IT service	
TOTAL (IT Services)		0.0
	B. ITES/BPO	Percent Share
i.	Customer interaction services	
ii.	Finance and Accounting, auditing, book keeping and tax consulting services	
iii.	HR Administration	
iv.	Procurements and logistics	
v.	Legal services (including IP management services)	
vi.	Business and corporate research	
vii.	Animation	
viii.	Gaming	
ix.	Medical transcription	
x.	Document Management	
xi.	Content development and management and publishing	
xii.	Pharmaceuticals and biotechnology	
xiii.	Any other ITES/BPO service	
TOTAL (ITES/BPO)		0.0
	C. Engineering Services	Percent Share
i.	Embedded Solutions	
ii.	Product Design Engineering (mechanical, electronics excluding software)	
iii.	Industrial automation and enterprise asset management	
iv.	Architectural and other technical services	
v.	Any other Engineering service	
Total (Engineering Services)		0.0
	D. Software Products	Percent Share
i.	Software products	
ii.	Own software products license revenues	
iii.	Resale of software	
iv.	Offshore Product Development	
v.	Any other Software Product related service	
Total (Software Products)		0.0
	E. TOTAL (A + B + C + D)	0.0

The results from the survey are found in an RBI bulletin, the latest covering the Survey on Computer Software & Information Technology Enabled Services Exports: 2013-14 from March 10, 2015.[26] The results presented in the article are based on the responses received from more than 1,000 companies. RBI states that responses are received from all the top IT companies. The instrument covers modes 1, 2, and 4. As for mode 3, RBI reports that it does not collect the precise information necessary for mode 3, so it attempts to estimate it. RBI cautions that its mode 3 estimate should "be taken as a rough estimate only."

[26] https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=15452

These results appear in the table below, which is taken from the bulletin. India's delivery of computer services by all four modes of supply stood at $82.8 billion in 2013 according to the RBI.

Software Services "Exports" by Modes, per cent, 2013

Mode 1 (cross-border supply)	69.0
Mode 2 (consumption abroad)	0.1
Mode 3 (commercial presence)	13.7
Mode 4 (presence of natural persons)	17.1

RBI's results are roughly equivalent to BEA's full exploratory estimates less travel, transport, construction, mining, and maintenance and repair. The equivalent BEA estimates would then be roughly $410 million for mode 1, $22 billion for mode 2, and $60 billion for mode 4. For mode 3, estimates of services supplied to foreign persons by U.S. MNEs through their MOFAs that are roughly equivalent in coverage to the RBI's ITES considering all industries less mining, manufacturing, real estate, and transport, leaving a value of roughly $1.1 trillion.

Therefore, BEA's estimates that are comparable to those shown in the RBI's table above are 26 percent for mode 1, one percent for mode 2, 69 percent for mode 3, and three percent for mode 4. The sharp differences between mode 1 and 3 might be explained by the RBI's admitted challenges in measuring mode 3.

6. Next Steps

BEA plans to move forward on several fronts:

a. BEA plans to share our exploratory work with our colleagues from the WTO for their comments. The WTO, in coordination with the OECD and other international organizations, has been driving the international statistical community's efforts to prepare estimates by mode.

b. BEA will compare our estimates and methods with those used by other countries as they begin to make headway. BEA will consider refining its work based on this

review. The OECD Secretariat has been making efforts to compile information from countries.

c. BEA is in the planning phase for its 2017 benchmark services survey. BEA will consider changes to this survey to collect services transactions by mode. BEA will also consider whether a new special survey is needed. This survey redesign will include an expanded scope as a result of a new budget initiative to enhance BEA's statistics on U.S. trade in services.

d. BEA will consider methods for developing estimates other than relying on collecting information on its business surveys. For example, BEA may be able to use administrative data sources to measure services provided by self-employed nonresidents working in the United States (part of mode 4 imports), following Statistics Canada's approach. For services provided by employees of foreign firms sent to the United States (the other part of mode 4 imports), BEA may consider how to estimate the value of these services if businesses cannot readily breakout these services on BEA's surveys.

e. BEA will consider other difficult questions with respect to collecting mode of supply information on BEA's business surveys. In particular, many if not most services transactions involve multiple modes. For example, a single legal service fee may cover the lawyer visiting the client (mode 4), the client visiting the lawyer (mode 2), and remote consultations by telephone (mode 1). Could a survey respondent reasonably be expected to know and allocate the value of this transaction across modes? If not, could BEA take the respondent's data and identify a reliable method for allocating the transaction across modes? Whichard touched on this matter in his response to the 1996 WTO questionnaire (see appendix).

f. In addition to possibly amending BEA's business surveys of services trade, BEA could also consider amending its direct investment surveys. For example, U.S. parent companies with foreign affiliates may be able to provide information on the employees that they send temporarily abroad, which might help measure mode 4.

g. BEA will consider ideas offered by independent researchers. For example, Sturgeon suggests that surveys include a question asking companies to estimate the percent of services transactions with [country X] that were delivered remotely in order to tease out mode 1 trade.[27]

[27] See Sturgeon paragraph 35

h. BEA will consider a reconciliation exercise with other countries that are sufficiently advanced in their work.

APPENDIX

United States Reply to World Trade Organization Questionnaire on Modes of Supply in Trade-in-Services Statistics(STD/SERV(96)14),Oct 1996

Part A. General Questions

1. Do you think it will generally be possible to collect or estimate data for trade in services components broken down by modes of supply [and in what time frame]?

Due both to limited resources for data collection and the need to limit reporting burdens imposed on businesses, we are not optimistic about the possibility of collecting significant additional information on trade in services broken down by mode of supply, even in the long-term. However, as noted below, some information already is available or could be developed from existing information.

2. Do you think that

(i) there are major conceptual impediments to statistical collection/estimation?

One difficulty may be in the categorization of transactions involving multiple modes of supply. For example, most of the work done by a consultant in performing a feasibility study for a foreign client may be carried out in the consultant's own country, yet on occasion the consultant travels to the country of the client to gather information; upon completion of the study, a report is mailed or transmitted electronically to the client. Should this be considered cross-border supply or movement of natural persons?

(ii) **there are major practical impediments to statistical collection/estimation?**

We can speak only for ourselves, but budget constraints and the need to reduce reporting burdens both are major practical impediments.

3. What do you think would be the best method to obtain data by modes of supply?

The first step should be to assess what is already known or can readily be inferred from existing information. For example, data on labor incomes paid to nonresident workers, while typically available only as an aggregate amount, provide information on "presence of natural persons".

Some countries have, or are developing, data on sales by direct investment enterprises; these data, while typically broken down by primary industry of enterprise rather than by type of service, correspond closely to the "commercial presence" mode of supply. What is

left unknown is the distribution among the three remaining modes of supply of resident/nonresident transactions in specific nonfactor services. However, in a number of cases the dominant mode can be inferred from the nature of the service. For example, travel by definition represents consumption abroad, resident/nonresident transactions in basic telecommunications services represent cross-border supply, and there may be other cases in which the principal or dominant mode either is obvious or could be determined through study.

Part B. Data Collection/Estimation Feasibility by Mode of Supply

An attempt to fill out this part of the questionnaire quickly revealed that the prospects for collection/estimation could not be as readily categorized as the chart seemed to presuppose. Instead, the following general remarks are offered.

1. Consumption abroad.--Although there may be other cases of services delivered to customers in the country of the provider, it appears that most such cases would be captured by the items travel and "other" transportation services (travel including, under both BPM5 and the OECD/Eurostat classification, expenses for educational and medical services and "other" transportation services including services procured in ports by nonresident carriers).

2. Commercial presence.--Services delivered through this mode are captured by FATS statistics, which the United States has collected for many years and which a number of other countries are beginning to develop, primarily for inward investment. Thus, these services are, or for a number of countries can be, covered. However, they normally would be classified on the basis of the primary industry of the service provider (including those primarily engaged in the production of goods), rather than by type of service provided. Due to budget constraints and the need to limit reporting burdens, we are not optimistic that additional information could be collected that would allow these data to be broken down by type of service.

3. The remaining modes.--Except for those cases in which a particular mode of supply would appear, by virtue of the nature of the service, to be dominant, we feel that it would be extremely difficult to break down transactions that are cross-border in the balance of payments sense (i.e., between residents and nonresidents) into the categories for cross-border supply and the two varieties of presence of natural persons. In addition to the general problems of reporting burdens and budget constraints, data collection likely would be complicated by transactions involving multiple modes of supply (discussed under Part A) and by the likelihood that company accounting systems typically do not maintain information on the basis of mode of supply.