

**Working Paper 241**

**Challenges and Prospects  
in the Measurement of  
Trade in Services**

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ISBN 81-7791-197-X

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The Institute for Social and Economic Change,  
Bangalore

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# CHALLENGES AND PROSPECTS IN THE MEASUREMENT OF TRADE IN SERVICES<sup>1</sup>

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## Abstract

*Economic literature has been eloquent in acknowledging the significant contribution of service and trade in services to economic growth. However, such studies fail to provide a workable definition of services and their trade, keeping apart the measurement of the same. Such an approach, consequently, has limited the understanding of the economic dynamics of services and trade in services. This in turn has restricted the development of a database that can capture the full essence of services and trade in services. Further, with the evolution of the General Agreement on Trade in Services (GATS), the demand for statistics on mode-wise trade of GATS has further compounded the problems of statistics on services and their trade. Since liberalisation of the service sector is an important segment of modern day globalisation, maintaining statistics on GATS mode-wise trade in services will be imperative for any country. It not only facilitates an understanding of the comparative advantage of a country in a specific service trade and negotiation strategies of its partner countries, but also to set its own negotiation strategies for a multilateral trade platform. It is in this context that this paper illuminates the need for data, gaps and revisions required in the existing data in order to capture the GATS mode-wise trade in services. In addition, the paper highlights the multilateral and regional attempts to maintain statistics in line with GATS.*

## Introduction

Services have attracted escalated attention from economists over the last few decades. Stylised facts show the significant contribution of services as nearly 69 per cent of the value added<sup>3</sup> to world GDP. Further, while the value added of services is nearly 40 per cent of GDP in low income countries, it has increased to 59 per cent and 72 per cent in middle income and high income countries, respectively<sup>4</sup> (World Bank, 2009a). These facts indicate the significance of services in the economy in recent years. Indeed, starting with Adam Smith, services have been of interest to many economists but not to the extent of goods mainly because, till the later part of the last decade, economic thinkers considered services as invisibles<sup>5</sup>, non-tradable, and non-storable. As a result, no conceptual framework was developed to deal with the economic dynamics of services. More often than not, services were considered as intermediaries in the production of goods. This has resulted in not only undermining and concealing the contribution of services to the production of goods but also to the growth of the national economy.

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<sup>1</sup> I am thankful to Magdeleine Joscelyn of Economic Research and Statistical Division of the World Trade Organization for answering my queries relating to database on trade in services and also to the anonymous referees for useful comments on the earlier version of this paper.

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<sup>3</sup> Value added is defined as the 'net output of an industry after adding up all outputs and subtracting all intermediate inputs' (World Bank, 2009b, pp.365)

<sup>4</sup> Also see Hoekman, B. 2006, World Development Indicators, 2009, and CIA World Fact book, 2009 for similar results on the contribution of services to GDP.

<sup>5</sup> In fact, countries like India report services under the 'invisible' category and provide data on invisibles!

Perhaps, a major contributory factor for the lack of conceptual attention to services by economists was due to the absence of a workable definition of services. As Melvin (1995) points out, the foremost problem in the measurement of service output is to define services and to draw a line between goods and services. Apart from a few attempts, it was Hill who provided a formal definition of services in 1977. Much of the literature on services prior to Hill (1977) focused on the analytical aspects of the structural composition of an economy in terms of the primary (agriculture), secondary (manufacturing) and tertiary (service) sector. Such a residual approach to the structural composition of an economy considers activities of the service sector as those activities that do not fit into the primary (agriculture) or secondary (manufacturing) sectors<sup>6</sup>. Interestingly, while analytical attempts to understand the various aspects of the composition of the service sector of an economy have been substantially dealt with, providing a practical definition of what constitutes a service has received scant attention.

It is evident from the above discussion that economists have tried to define the scope and composition of the service sector rather than provide a workable definition of services. Even Hill (1977) fails to capture the dynamic characteristic of services. Nevertheless, in the absence of a definition of services, at the least, Hill's contribution could be seen to identify certain characteristics and the nature of services. Indeed, Hill's definition appears to have provided a think tank for other economists about the definition of a service and facilitated the economic thoughts on service transactions (both domestic as well as international). In fact, Hill's definition of services inspired volumes of research on service transaction, like that of Bhagawati, 1987 and Grubel, 1987, to mention a few. However, much of this research is based on Hill's definitions of services. Therefore, attempts to define services are still primal. Although, there have been limited endeavours to define services, there is also lack of consensus on a workable definition of services which can capture the varied characteristics and composition of a service<sup>7</sup>. Besides lack of consensus, the application of the methodologies for the classification of services by different countries was not universal. This in turn compounded the problem for international agencies compiling data on services. These definitional and analytical dilemmas also led to the under-reporting of the contribution of services by many statistical databases. This in turn affected the development of data sources on services. These inconsistencies are also ostensible and more severe in the case of international transactions in services, which is more varied and complex in nature than domestic service transactions. Perhaps, trade volume of services is less than its share in output and employment owing to the definitional problems in the data collection on services (Rajan and Graham, 2002). Problems of data are further compounded by the emergence of GATS demanding a different set

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<sup>6</sup> It was Clark who first used the residual approach of classifying economy and defines services as 'those economic activities not included under primary and secondary sector'. On the other hand, further studies like the famous Ballassa (1964), Paul Samuelson (1964) and Kravis-Heston-Summer (1978) work on how the real price of services rise with the per-capita income and Bhagawati's (1984) alternative factor endowment explanation on the same issue using followed by still another explanation provided by Clague (1985) and Panagariya (1985) based on specific factor model. For a discussion, see Bhagawati (1987). The linkage between per capita income and service sector GDP can also be seen in Eichengreen and Gupta, (2009)

<sup>7</sup> Even the multilateral framework of GATS is silent on the definition of services. GATS only considers the way a service could be traded and the guidelines for multilateral negotiations on services.

of mode-wise trade<sup>8</sup> data which is unusual to statistical agencies maintaining data on traditional trade statistics. Absence of GATS mode wise data hinders the interest of member countries for international negotiations on services because data on trade in services are imperative to understand the comparative advantage of a country in specific services and the extent a particular negotiation (concession) would affect the growth of that specific service.

With this backdrop, this paper illustrates the data requirement, the available data, limitation and gaps of the available data for an economic analysis of trade in services in general and GATS mode-wise analysis in particular. In this regard, the paper highlights recent efforts by various international statistical agencies to develop a statistical database on trade in services to deal with the growing demand for the data on trade in services. At the end, the paper prescribes a set of variables on trade in services that were required to be maintained by any database on services and ways of their collection.

### **Caveats in the statistics on trade in services**

International service transactions may involve the movement of labour and capital or may be made on-wire. Therefore, from the viewpoint of service trade, it is essential that the database on trade in services include statistics on separated services as well as services provided through the movement of capital and labour, separately. This will provide important information on the significance of services traded to an economy. Information on the barriers imposed by government on the trade in services, the right to establishment and hiring of non immigrants service suppliers is also imperative (Stern and Hoekman, 1987). Therefore, any data source on service trade should, at least, provide statistics at a disaggregated level of services (or at least those services covered by GATS), GATS mode-wise break up of trade in services backed by direction of trade by partners, information on prices, exchange rates, etc. In this respect, Stern and Hoekman, 1987 point out that in the database on the production and trade in services, size of the barriers and elasticities of demand and supply for all the four kinds of trade are least required. To develop any database on services, following GATS classification of services and mode-wise trade is useful because GATS is an internationally accepted framework for negotiations on services.

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<sup>8</sup> GATS defines four modes of service delivery in line of the above suggested modes by Bhagwati (1984), and Sampson and Snape (1985). Therefore, much before GATS, a thought on the service trade had already been provided. Under GATS, a service can be traded, depending on the nature of service supplied and the movement of the service supplier or consumer, through four modes. It defines the modes as the supply of a service

- (a) From the territory of one member into the territory of any other member - Mode 1. Example of Mode 1 trade could be telemedicine.
- (b) In the territory of one member to the service consumer of any other member- Mode 2. Medical tourism is the most quoted example.
- (c) By a service supplier of one member, through commercial presence in the territory of any other - Mode 3. Example could be the flow of FDI in health sector. Service negotiations involve the negotiations on "commercial presence" which is even new to international trade law as these issues were independently handled by the states.
- (d) By a service supplier of one member, through presence of natural persons of a member in the territory of any other member - Mode 4. Example of Mode 4 may be the movement of nurses from one WTO member to another to supply the service in the other. Here the "supply of a service" includes production, distribution, marketing, sale and delivery of services. Therefore, GATS covers each stage of supply of a service. From the view point of trade in services as defined by GATS, it is clear that it accepts that the four modes cover trade in both factor (Mode 2, 3 and 4) as well as non-factor services (Mode-1). Also, it is seen that GATS through the four modes tries to capture all the dynamics of service trade and believes that all services are traded as GATS does not exclude any services supplied except services supplied in exercise of government authority.

A data source thus developed would not only be helpful in understanding the comparative stance of a country in the world market for services but also enhance the understanding of a commitment (gains and losses) a country makes or would be making. It would also show a picture of the disaggregated services in which a country has a comparative advantage and thereby make a commitment at GATS. In this regard, Stern and Hoekman (1987) caution that negotiations on services require a comprehensive database and the absence of such a database may affect the participation of some countries in multilateral negotiations. The existence of such a database would motivate countries to participate in industry and sector specific service negotiations because it can show their comparative stance in gains in services. However, developing such a database is costly particularly for developing and less developed countries and therefore, the process of improvement in data on services has to be spread over a long period of time. As pointed out by Linder (2000), the development of a detailed database on service is not easy since production of services a joint process (simultaneity in production and consumption) and no physical object is seen in the transaction. Therefore, it is difficult to measure service output. However, international data agencies handling data on services have not adapted to the features of services; therefore, they face the problem of collection of data on services. This may be because of the low priority given to services. It may also be due to the fact that some goods trade is actually inherit service trade also. In other words, the commodity trade may contain certain hidden value added. In addition, the lack of an international standard for the classification of services and the lack of a universal definition of service to understand the transaction have caused most of the problems relating to data on services. There are also inconsistencies in the classification of factor services by combining them with non-factor services.

It is evident from the discussion in the earlier section that services lack definition while their measurement received much attention in the literature. However, unlike services, much of the work on trade in services is confined to defining trade and exploring the patterns of such trade. Adequate research was not devoted to the development of a statistical base for the measurement of trade in services till recently. Although, the database on services exists, it is not sufficient for any kind of negotiations on trade in services as it provides an aggregated picture of such trade. In this regard, Karsenty, 2000, acknowledges that during the Uruguay round, the GATS negotiations were conducted without proper statistics. The absence of quantitative information on mode-wise trade in services had hidden the relative importance of such modes of service transaction. As a result, the sectoral commitments made in different modes could not be evaluated with the statistics on different modes of trade in services. However, the absence of such data could not hamper the trade negotiations because the goal was to develop rules and provisions for trade liberalisation rather than achieve such liberalisation from the negotiation round. Nevertheless, the growing number of negotiations on service trade liberalisation has largely escalated the need for statistics on trade in services. Data on trade in services are helpful in providing information on areas of comparative advantage and precedence areas of concession to other member-countries, thereby facilitating GATS negotiations. Whichard (2001) points out that the remarkable growth of trade in services has raised considerable demand for a comprehensive database on trade in services. There is no lack of consensus over the fact that trade statistics is imperative for not only understanding trade dynamics but also for trade negotiations

because it shows the economic importance of a sector, assesses the impact of trade policies, shows the strengths and weakness of a particular economy and the opportunities in the markets of different trading partners (Whichard, 2001, Maurer *et al*, 2008). Besides, a detailed database on services would help in indirect measurement of the impact of existing barriers to trade in services (Whichard, 2001). However, the existing data on trade in services is more aggregated and does not talk about bilateral trade of specific services in a specific mode of supply provided by GATS for trade in services. The existing database on services does not provide any information on service-wise prices and quantities and GATS mode-wise trade in services. There is no database with information on barriers to trade in services. Further, as Rajan and Graham (2002) point out, certain international service transactions need the physical proximity between consumer and provider but conventional trade statistics does not record them. They also point out that services embodied in the goods (designing, maintenance, etc) are captured in the trade statistics on goods and not on services. In this sense, a re-export of goods may be an enterpo'trade in services not recorded under services but under goods and escalate the merchandise trade volume compared to services trade. Further, Cave (2002) points out that the data on trade in goods includes data on re-export also whereas the data on service trade is incomplete in capturing all the modes of such trade.

On the other hand, most of the economists seem to be applying the empirical definition of international trade in services adopted by statistical agencies to collect data on such trade rather than adhering to a definition that could capture all the dynamics of trade in services. Welsum (2003) provides reasons for the setback in attention on services as non-storability, no consensus on the definition of services and its measurement and regulations in the service industry that makes trade in services difficult. He points out that a detailed database on services is of recent origin and may not be reliable due to non-harmonisation of rules and regulations. Further, Nayyar (1988) recognises the following three reasons for the setback in attention to trade in services by economists for longtime (which also reflect and summarize the reasons already mentioned above): Firstly, services are considered equal to goods, therefore, it was thought that the theories of trade in goods are adequate to explain the dynamics of trade in services. Secondly, services used to be considered as non-tradable, therefore, the question of international trade in services did not arise. Thirdly, the conceptual problems associated with international trade in services.

In this context, Lipsey (2006) points out that during mercantilism, imports were considered a liability to the nation. This means a close look at the trade in goods was already in place and the data maintenance on trade in goods goes back to 300 years. However, ignorance in the compilation of data on trade in services can be described in the words of Lipsey (2006) - 'export and import of services have been something of an orphan in international measurement of trade'.

Further, Welsum (2003) points out that the data on trade in services is very limited and non reliable because abstract concepts are used to abstract measurements and there is no international coding system for trade in services. Making the situation worse is that measurement of trade in goods has international guidelines devised by the United Nations (1998) in the "International Merchandise Trade Statistics: Concepts and Definitions" and is co-ordinated by the International Trade Statistics Task Force. Such an internationally acceptable guideline for the compilation of data on trade in services was

non-existent till recently. At present, the United Nations (2001)'s "Manual on Statistics on International Trade in Services (MSITS)" provides an internationally acceptable methodological framework for the compilation of data on trade in services. Further, Lipsey (2006) acknowledges that unlike goods, the documentation of data on trade in service is a daunting task because neither it undergoes customs checking nor is there an international service code for a particular trade in service (Also see Welsum, 2003). This leads to invisibility of service trade at the borders. In addition, in the case of services, either there is on-the-wire trade or the consumer or the producer moves between countries for transaction depending on the cost of doing so. This varied nature of international service transaction also creates problems in data collection. Nevertheless, statistical work on various modes of international trade in services is on-going and regular revision of the database on trade in services is made. However, international agencies like the International Monetary Fund (IMF), World Bank, Organisation for Economic Co-operation and Development, United Nations, etc., have been co-coordinating and working together with regard to developing statistics on international trade in services. One of the widely used sources on trade in services is the IMF's Balance of Payment (BoP) statistics. As an annual publication, it provides data on factor as well as non-factor services. The IMF's BoP provides data on services on invisibles under the current account and classifies the income earned from factor services (worker's remittances) as transfers and not as a part of invisible trade. This is based on James Meade's concept of the 'Balance of Payments' (Bhagwati, 1987). Although it cannot be used as a direct measure for GATS mode-wise trade, the data on trade in services provided by the IMF's BoP can be used to estimate proxy measures of such (mode-wise) trade in services. To facilitate such an understanding, a Manual on Statistics on International Trade in Service (MSITS) was developed which provides recommendations for the measurement of trade in services via different modes. Based on the data provided by Balance of Payment Manual (BPM) MSITS provides a detailed approach to measure different modes of service transactions. The major contribution of MSITS is the approach it provides for the estimation of Foreign Affiliate Trade in Services (FATS) statistics to capture Mode 3 trade apart from Mode 4 statistics. However, MSITS is being revised and has adopted new approaches to measure Mode 4. This is discussed later.

To collect and compile data on trade in services, the IMF has developed a methodology over time. A significant source for data on trade in services is the Year Book of Balance of Payments Statistics (BoPs) published by the IMF. On an average, a Year Book provides data for the previous seven years. However, the major drawback of the Year Book is that the IMF continuously revises the methodology of collecting data and thereby the data of a particular year changes with every new Year Book. Therefore besides, compiling a time series data using different year books is not advisable because the methodology of reporting data changes every year and will give incomparable data. Nevertheless, the IMF maintains online data that provides time series data using similar methodology. The online data captures similar variables in trade in services as reported in the Year Book of BoPs under the following headings,

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<sup>9</sup> Apart from all these efforts, in line with IMF BOP framework, OECD countries have developed a database on bilateral service transaction for major services between OECD countries and the rest of the world. However, the coverage of the database is limited to the OECD countries, therefore, IMF BOP statistics still has its own importance for data on service transaction for non OECD countries even though it does not capture direction of service trade among countries.

1. Transportation: includes all transport services performed by residents of one economy for another and involving the carriage of passengers, movement of goods (freight), rental of carriers with crew and related support and auxiliary services.
2. Travel: covers goods and services consumed by travelers.
3. Government services not included elsewhere like those provided/acquired by the diplomats, embassies etc., on behalf of the home country.
4. Others Services: covers those services which do not fall under transportation services, travel services and government services

It also provides information on

1. Compensation given to employees: comprising wages, salaries and other compensation received by individuals working abroad for less than one year.
2. Workers' Remittances: transfers from workers who stay abroad for a year or longer.

For the compilation of BoP data, the IMF borrows data from different countries on a regular basis in accordance with the methodology it has developed for the purpose.

### **Ambiguities relating to the concept of 'residency'**

The BoP follows a double entry accounting system in which a transaction is recorded twice, i.e., in the credit as well as the debit account. However, the IMF's BoP statistics is not free of limitations. For instance, to record international trade in services between countries, it adopts a 'residency' approach that defines 'residency' in terms of economic interest. For instance, in the case of an individual, the residence of the individual is the household where he/she is a member irrespective of his/her place of work (IMF, 2009). The base of deciding the residency status of an individual is the principle dwelling of his/her household which in turn shows his/her economic interest. Although, the IMF's BoP manual defines residency in terms of economic interest of the economic agent, it applies the one-year rule of residency for practical purposes (Karsenty, 2000). In other words, if a person stays in a country for more than a year, then it is considered as his/her residence irrespective of economic interest in terms of principle dwellings of his/her household. Therefore, like migration statistics, to determine the 'residency' status of an economic agent, the IMF follows the one-year rule where an economic agent who stays abroad for more than one year is considered a resident of the host country<sup>10</sup> and any transaction of services between a resident and a non-resident of a country is considered as trade in services. For instance, if a tourist of country 'B' visits country 'A' and uses hotel and other services in country 'A', then

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<sup>10</sup> However, in this regard, exceptions are students, medical patients, international military forces, and ambassadors, etc.. Interestingly, the mobility of students imposes a different problem. For instance, the educational services consumed by students are treated as international trade in services in case the student is not a resident of the host country (these are recorded under the export of trade in services in the host country's BOP) where as it is treated as the domestic consumption of educational services if the same student is considered as the resident of the host country. However, if a foreign student becomes the resident of the host country, then it is considered as the re-import of the services. This is considered as the service import from home country by the host country and it is not recorded under balance of payment statistics (Lipsey, 2006). However, Grubel (1987) points out that if a student returns back to the home country after completion of the course, it is an addition to the capital stock of the home country and therefore, should be recorded in the home country's BOP where as it should not be recorded in the host country's BOP as it does not add or subtract anything from the capital stock of the host country.

it is considered as export of hotel and other services for country 'A' while it is considered as import of hotel and other services for country 'B'. For more examples, see Grubel (1987). In this regard, Welsum (2003) confirms that the definition of trade in services provided by GATS does not go along with the BoP classification of trade in services. This is because GATS definition of service transaction through four modes is a legal definition meant for negotiations whereas IMF's definition of service transaction in terms of 'residency' is for statistical measurement (see Karsenty, 2000). It would be noteworthy to mention here that while the BoP employs a 'resident' approach to trade in services (transaction between resident and non resident of a country which means the person in question has to be a permanent resident of that particular country), GATS adopts a territory approach to address the trade in services between a consumer and a producer. GATS notion of 'residency' includes nationality, territorial location and ownership or control of the economic agent (Karsenty, 2000). Therefore, GATS adapts a more broader concept of 'residence' compared to BoP.

### **Methodological inconsistencies**

One of the most glaring difficulties of the IMF's BoP method is that of maintaining time series statistics based on a consistent methodology. The IMF keeps revising the methodology in the form of a Balance of Payment Manual (BPM) to compile detailed data on trade in services. The recent revision is the sixth version of the manual. However, the problem here is that with every revision, the IMF requests more detailed disaggregation of data on trade in services from countries but it is not always easy for countries, particularly less developed countries, to collect and compile data as per the IMF's BoP manual and its continuous revisions. Every revision has its own cost in terms of break up in the time series data on services. For instance, in its fourth revision (BPM4) of the BoP manual, the IMF considered certain factor services in the class of non-factor services. However, in the fifth revision of its manual (BPM5) in 1993, the IMF revised it and now the factor services are reported separately from non-factor services. The problem here is that with every revision, countries have to provide data as per the new revised format not only for recent years and coming years but also for the previous year to maintain a time series data. However, this is a difficult task. For instance, the revision from BPM4 to BPM5, demanded that countries adopt BPM5 to previous years and convert the data prior to 1993 according to BPM5 which is difficult for countries. Therefore, there is data missing from 1986 to 1992 (see Linder, 2000). Further, in 2008, the IMF came out with the sixth revision of the BPM, which meant countries had to adopt the data collection process as per BPM6 and convert the previous year's data to the BPM6 format. This is a daunting task and the cost of data compilation escalates with every revision of IMF's BoP as it identifies new areas of service trade apart from the conventional forms. Data with new formats generated by the IMF from time to time includes a border classification of services that would apparently escalate the figures of service trade although these might have already traded but not reported. Therefore, the growth rate of overall services would be misleading due to revisions by the IMF. What makes the situation worse is the fact that the IMF's BoP CD-ROM, which provides a time series data on services, excludes certain countries prior to 1972 due to non-compilation of the definition and measures of trade in services with the current definitions (Lipsey, 2006). The IMF's BoP does not provide data on the direction of trade in services between countries Nayyar (1988). Therefore, it is

difficult to analyse the dynamics of bilateral and regional trade between countries and countries may not be able to identify important partners for individual services which may hinder their trade negotiations. Moreover, the data on the barriers and their effect is either not available or their collection is at the preliminary stage. Although, the IMF covers a wide range of countries, its standard classification of services is so aggregated that it is difficult to understand data availability for specific services (Whichard, 2001). Further, both the expenditure incurred by a foreign traveler in the host country as well as the expenditure of a traveler on the return journey to his home country is included under the aggregate category of travel account, which compounds the problem of classification of expenditures under travel account. Travel includes both goods and services making it complicated to measure the trade (Linder, 2001). Spair (1985) provides an account of the limitations of the BoP statistics related to service transaction that occurs through foreign investment activities. Since services require proximity between producer and consumer as production and consumption is simultaneous, it mostly occurs between residents of a country. Therefore, service transaction between the residents and non-residents requires foreign investment activities. However, the data based on BoP statistics does not provide sufficient evidence of foreign investment activities related to services because it provides the information on the income earned from foreign investment and not on the foreign investment activities *per se*.

### **Problems of 'real' Vs 'nominal' trade**

One of the important criticisms of data on trade in services in general and data based on the IMF's BoP in particular is that problems of real versus nominal value of trade in services exist. This is because the price data in services is at an infant stage or does not exist in many countries, and therefore, it is difficult to calculate real trade data that excludes price movements (Lipsey, 2006). However, the existence of such a deflator is important while dealing with time series data. The absence of a price deflator does not allow any analyses of changes in the trade volume due to change in price or change in quantity, let alone mentioning the value of trade only. It is also very difficult to convert the data on trade in services in constant prices in the absence of an appropriate deflator (Nayyar, 1988). For methodological work on price indexes refer 'Developing a Revised Manual for the Export and Import Price Indexes' of Electronic Reference Group, IMF. The price deflator is unavailable not only for the aggregate trade in services but also for individual services. Further, the law of one price is not applicable here as international prices of different services vary from their domestic prices on account of the aggregate nature of service statistics, composition of international service transactions and the cost of crossing the border also adds to it (Whichard, 2001). The exclusive definitions of output of certain services (for instance the consultancy and legal services) also create difficulties to relate such output with prices (Whichard, 2001).

### **Issues of incomparability across time series**

Lipsey (2006) states that though data on trade in services is being compiled not all countries provide complete information about their respective data. Countries provide information only on certain specific services. Inconsistencies in the reporting of data between countries have created many problems in

understanding the true volume of trade in services. However, Lipsey (2006) shows that over time a growing number of countries have report data on time. Another persistent problem with the IMF's BoP statistics is the impact of the growing number of countries reporting data on the analysis of such data (Lipsey, 2006; Whichard, 2001; Karsnety, 2000). For instance, in 2003, only 165 countries reported data to the IMF. It increased to 170 countries in 2006 and in 2008 escalated to 174 countries (Various issues of BoP Yearbook). All members of the IMF have to compile and report data for the compilation of BoP statistics. However, some countries are quick in compiling data while others are not. Therefore, fewer compilations in a particular year does not mean that countries have not reported the data for that year. It only means that those countries who fail to report the data for a particular year are indeed compiling the information for that year (Personal communication with the data dissemination team of the IMF). For example, some countries are very fast in compilation of data for the IMF's BoP up to 2008 while others may be compiling data for 2006. The latter countries may take more time to compile data for 2008. Therefore, while reporting the data to the IMF, their data will be updated only up to 2006 while others have reported data up to 2008. Since IMF keeps revising the BPM, it takes some time for some countries to adhere to the new guidelines of data compilation. On the one hand, the escalation in the number of countries reporting the data on services shows the rising interest of countries in trade in services. According to Whichard (2001), the growth in trade in services would be confusing because the number of countries reporting data and the categories of services for which the data is provided has been increasing over time. Therefore, one cannot be certain about the rise in overall export and import of trade in services due to the actual growth in service trade or due to more countries reporting data (Lipsey, 2006).

### **Box 1: Sources of compiling data on services and trade in services**

At present, there is a spate of international accounting standards that can be used for the classification of services and trade in services. For instance, the System of National Accounts (SNA) is an internationally accepted standard of recommendations for the compilation of indicators of economic activity in accordance with accounting conventions based on economic principles. In a crude sense, the SNA provides methodology for the compilation of various indicators of economic activities of an economy that facilitates the economic decision-making process. The SNA considers goods and services as a part of the standard presentation of accounts. The definition of services provided by the SNA is widely used because it is an internationally accepted definition that accommodates comparability of statistics between countries. The SNA revises its recommendations to facilitate a detailed compilation of measures of economic activities. In this regard, another internationally agreed accounting standard for the classification of services and trade in services is the Central Product Classification (CPC) which is the result of continuous efforts by the United Nations and other European communities for the harmonisation of classification of international products. Such thinking for harmonisation of international product classification goes back to the 1970s. Although, the first draft of the CPC was published in 1980s, after series of consultation meetings, the provisional CPC was published in 1991. However, based on the growing demand and the experience of the countries, the CPC is revised at regular intervals. The CPC provides a framework for the classification of products based on an internationally harmonised classification system facilitating international comparison of the data on products. It facilitates the classification of services to include the classification of the output of service industries. Prior to the CPC, there was no international classification framework for the classification of output of service industries. Since it is a well established internationally product classification, countries that do not have sufficient resources to develop product classification for their economy, can use the CPC for such an exercise. The CPC's revised version 1.1 covers 305 groups, 1,167 classes and 2,096 sub-classes of products. Based on the CPC, the GATS has developed the service sector classification list to classify trade in services. The International Standard Industrial Classification (ISIC) provides a framework for the classification of productive activities. It is also used as a benchmark for the development of national industrial classification system by some countries. The first version of the ISIC was published in 1958. It is revised periodically to cater to the needs of the changing composition of economic activities. Since it is also an internationally accepted framework, it provides scope for international comparability among countries. The ISIC is useful for the classification of service industries. The latest revisions of ISIC accommodate greater detail of the classification of service activities. There is an inter relationship between the CPC and ISIC. Although there is no one-to-one correspondence, for every CPC product classification a ISIC classification is available. On the other hand, the Balance of Payments and International Investment Position Manual are steps towards providing a framework for the compilation of statistics on the balance of payment transaction (including services) between an economy and rest of the world. As a part of its standard reporting, the manual covers trade in services. The manual maintains a harmonisation with the SNA in defining services and other concepts. The need for such a guideline for maintaining data on balance of payments items was felt as early as 1947. The first edition of the manual was published in 1948. The manual is revised in accordance with the economic and financial development and the growing demand for detailed data and various components of the balance of payments. The manual follows a double entry accounting system in which each transaction has a debit and a credit entry. It identifies the international service transaction as occurring between a resident and a non-resident. Therefore, the concept of residency is the basis of international service transaction. The manual uses the CPC for the classification of service products. An extended version of the manual, i.e., Extended Balance of Payments Statistics (EBOPs) developed by the OECD, Eurostat and IMF can be used as a framework for the collection of data on international trade in services. The EBOPs is an extended version of the Balance of Payment Manual's 5<sup>th</sup> Version. The data collected in the EBOPs are helpful for the multilateral negotiations on services. The Manual on Statistics International provides a methodological framework for the classification of data on trade in services according to GATS. It is the first international guideline for the compilation and classification of data on services as per GATS classification of trade in services.

**Source:** United Nations. 2008. System of National Accounts Version 1.1. United Nations Statistical Commission. United Nations. New York

\_\_\_\_\_. 2008. International Standard Industrial Classification (ISIC) Revision 4, Statistics Division. Department of Economic and Social Affairs. United Nations. New York

International Monetary Fund. 2008. Sixth Edition of Balance of Payments and International Investment Position Manual. Statistical Department. International Monetary Fund

United nations. 2002. manual on Statistics On International Trade in Services. Statistics Division. Economics and Social Affairs. United Nations.

### **Box.2: Concordance problems among different sources of compilation of statistics on services and trade in services**

There are difficulties in compatibility between the activity classification of CPC and ISIC with the traded service products classification of EBOPS. The CPC and ISIC classify enterprises as per their principle products. They ignore the secondary and tertiary products. This is more so in case of services. The CPC also does not cover all kinds of traded services. For instance, royalty and license fee in CPC classification do not adequately represent any service activity. Although the EBOPS tries to accommodate a large number of services based on product classification, international transaction in services is influenced by many stakeholders and their respective needs. Therefore, measuring trade in services in such a manner is difficult. Cave (2002) points out that EBOPS is based on the product classification to classify trade in services but certain services are conceptualised in a non-product classification. These are travel, government services and services traded between related enterprises in BPM5. Therefore, Cave (2002) suggests that a complete product-wise EBOPS classification will not cover all traded services. Since CPC and ISIC are internationally accepted standards for the classification of services and EBOPS for trade in services, a concordance between these three standards would be useful for the reporting related data. However, Cave (2002) confirms that concordance between the EBOPS categories of trade in services and the activity classification of CPC and ISIC is not transitive. For instance, the concordance provided by the MSITS between CPC and EBOPS shows that CPC classification of the service sector covers only a small part of EBOPS classification of trade in services. Cave suggests that the link between the EBOPS, CPC and ISIC be strengthened to make the three standards classifications more consistent which, in turn, will help compilers.

**Source:** Cave. W. 2002. *'Measuring international trade in services and New Demands on the Family of Classifications'*. Paper presented at the IAOS London, August 27-29.

Further, it may also happen that over time, countries report more categories of services not reported hitherto and may also escalate the volume of overall trade in services. Therefore, one cannot deny the fact that those countries which show a comparative advantage in services might have improved their collection of service trade data (Lipsey, 2006). Moreover, most of the countries provide data on travel, transport, insurance government, and other business services to the IMF's BoP statistics. Very few countries record and provide data in specific service categories under 'other services' (Whichard,2001)<sup>11</sup>.

### **Uncertainties in capturing trade through foreign affiliates**

The collection of data on trade in services through foreign affiliates is in its infancy and many of the internationally comparable standard guidelines are in the making (Whichard, 2001). The trade through multinational corporations is difficult to capture because of 'tax heavens'. The tax incentives provided by many countries have been attracting investment flows to these countries. These 'tax heavens' are used by many multinational companies to avoid payment of taxes. However, a firm can change the location of its assets based on paper transaction. This is mostly internal to the firm and makes the location of the production of the firms ambiguous particularly when such a firm is involved in the production of intangible services. This in turn leads to ambiguous measurement of trade in services by such firms.

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<sup>11</sup> The BPM5 divides the recording of services into transportation, travel and other services. The 'other services' category includes communication, construction, insurance, financial, computer and information services, royalty and license fee services, other business, personal, cultural, recreational and government services

This is because there is no shift of inputs between countries but the ownership of the input shifts between countries.

**Box.3. Sources of collection and compilation systems of data on India's trade in services**

India adopted the International Transactions Reporting System (ITRS) to record international transactions in remittances and trade in services. Under the ITRS method, the authorised banks are responsible for providing information on the statistics on the individual cross border transaction of their customers in terms of nature of transaction, the origin and destination of the transaction in a prescribed format. The responsibility of collecting data on India's trade in services rests with the Reserve Bank of India (RBI). The RBI compiles data as per the 5<sup>th</sup> edition of the BoP Manual. It provides data on travel, transport, insurance, government (not included elsewhere) and miscellaneous services. However, no mode-wise data is available on trade in services. It also provides data on software services under the miscellaneous services. The recording of separate data on software services is by virtue of the recommendations of the 2001 Indian National Statistical Commission. It recommended the adoption of appropriate methodology for the collection of data on software services. Although India provides mode-wise data on software services the breakdown of software services by the nature of service transaction in terms of contractual service supplier and intra-company transferee is not available (Magdeleine and Maurer, 2008). The RBI follows the IRTS to collect the data on trade in services or 'invisibles' (India still considers services as Invisibles. In fact, the publication carrying detailed data on services is called 'Invisibles in India's Balance of Payments') which are based on the data of banks or authorised dealers. To collect comprehensive data on trade in services a survey of unclassified receipts of small transaction is also regularly carried out. The RBI has extended its data collection on trade in services to the EBOPS and also reports data on migrant's transfers and compensation of employees recorded through IRTS. However, it includes both goods as well as service. Further, India provides data on trade through foreign affiliates in the recent past but such data includes both goods and services. The problem with the ITRS system is that remittances below a certain threshold are not reported separately. All such small transactions are presented as a whole. However, such a summing up of transaction may create problems of misclassifications and miscalculations. Further, the ITRS does not capture informal financial flows.

**Source:** Singh, B. 2005. "Service exports under Mode-4 of GATS: Explorative evidence from India". Meeting of the technical sub-group on movement of natural persons-mode held at Paris from January 31 to February 1, 2005 organised by the Department of Economic and Social Affairs. Statistical Division. United States.

Coates, K. 2006. "Measurement problems in household international remittances". IFC bulletin. 28. pp101-114.

The output is produced in the country of the multinational in the name of the foreign affiliate. However, the output is not subject to taxation in the country of production but comes under the taxation system of the country where the foreign affiliate is located. This is because the foreign affiliate records production in its own accounting books which is tax-free because the foreign affiliate is in a tax heaven. The production is also recorded as import by the country where it is produced because the ownership of the input still rests with the foreign affiliate. These trades have created difficulties in measurement for the IMF. (Lipsey, 2006). Further, Whichard (2001) points out that in the case of services, most of the statistics on trade in services record trade that occur through business firms whereas trade in services by individuals goes unrecorded. Such recording problems are compounded by online service transactions by individuals. For instance, an individual can buy a telecommunication or insurance service online using a credit card.

## **Problems in the measurement of mode wise trade**

Whichard (2001) points out that the absence of mode-wise data is another persistent problem associated with compiling trade statistics on services. Availability of such statistics will be useful in identifying barriers to each mode of service transaction and useful for GATS negotiations. However, such statistics is difficult to trace from business records because business firms do not capture such mode-wise trade in their accounting standards. Even if such a system exists, the multiple modes of supply for a specific service transaction make the collection of mode-wise statistics on trade in services intricate. The estimation of mode-wise trade using IMF's BoP statistics on its own is a challenge. This is due to the fact that the definition of modes of service transaction provided by GATS differs from that provided by national accounts (Cave, 2002). The IMF only reports data on the BoP of a country and in the absence of any direct source which provides statistics on GATS mode-wise trade, IMF's BoP statistics could be used as indicators of GATS mode-wise trade. As pointed out by Cave (2002), the balance of payment records the transaction between a resident and a non-resident of a country. The BoP does not provide clear data on the four modes of service transaction defined by GATS. For instance, apart from travel and government services, all other categories of services can be considered as Mode-1 but this could also include a part of Mode-4 transactions. The consumption abroad (Mode-2) is measured in terms of 'travel'. However, 'travel' does not make a distinction between expenditure on goods and services. Further, in cases where the consumer possesses ownership of the object being serviced abroad, such data is not recorded under 'travel' even if it is a case of consumption abroad. This data is recorded in other categories of BoP. The data on commercial presence is also not collected properly. Moreover, the data under Mode-4 is not without limitations. The earnings of the natural persons staying abroad for less than one year are recorded under compensation given to employees. It does not distinguish between the sector of employment in terms of the income earned from the goods and services sector (Cave, 2002). The BoP also does not record activity-wise dis-aggregation of natural persons. Further, the data on the number of foreigners and locals employed in a foreign affiliate firm will be useful in getting a clear picture of Mode-4 trade which the IMF's BoP does not capture. However, to a certain extent the data on commercial presence underestimates the trade. The data on 'inward FATS' and 'Outward FATS' will provide a clear picture. FATS statistics should cover not only those firms where the foreign participation is higher but also those firms where the foreign participation is lower. The latter category is not included in FATS statistics while GATS includes this under its definition of commercial presence. The sales of foreign affiliates to the country of origin should also be tracked to get a clear and complete picture of Mode-3. The availability of FATS statistics for a few years and countries also does not provide a comprehensive picture of such trade. In addition, Hoekman (2006) points out, the magnitude of FATS and other forms of trade in services are significantly affected by the accounting standards. For instance, licensing and franchising services are reported under the 'loyalty and licensing fee/leasing' category of BoP statistics. Such activities of assets are related to firms. If these activities were also included in FATS statistics, it would lead to double counting of such intermediate services.

Table 1: Link between GATS modes of international service transaction and BoP statistical framework

<b>Modes of supply</b>	<b>Relevant statistics domains</b>	<b>Inadequacies</b>
<b>Mode -1:</b> Cross Border Supply	BoP: Commercial services (excluding travel and construction services)	BoP does not allow a separation between modes 1 and 4
<b>Mode -2:</b> Consumption abroad	BoP: Travel	Travel also contains goods and it is not subdivided into different categories of services consumed by travelers Some transactions related to this mode of supply are also in other BoP category
<b>Mode -3:</b> Commercial Presence	FATS statistics	Very few countries produce FATS data
	BoP: FDI data (supplementary information)	FDI covers a large subset, not only (major) controlled companies
	BoP: Construction Services	No distribution between Mode-3 and 4
<b>Mode -4:</b> Presence of natural person  Labour mobility	BoP: Commercial Services (Excluding travel)	BoP does not allow a separation between Mode-1 (Mode-3 for construction services) and Mode-4
	BoP Statistics: Compensation of employees and worker's remittances (supplementary information)	Of interest for labour mobility

Source: Maurer *et al*, 2008

The measurement of Mode-4 has posed many challenges to national and international statistical agencies. From the beginning, Mode-4 has drawn the attention of statistical agencies. The unclear definition of Mode-4 - considering it as labour mobility, and the varied nature and classes of the movement of service suppliers - has compounded the challenges in its measurement. However, by virtue of the MSITS, which distinguishes Mode-4 from labour mobility, work commenced recently on exploring the statistical base for measurement of Mode-4.

### **Suggestive revisions in the collection and compilation of data on trade in services<sup>12</sup>**

It is evident from the above discussion that there is a growing demand for data and IMF BoP data is of limited use to estimate GATS mode-wise trade. To meet the growing demand for GATS mode-wise data a Manual on Statistics on International Trade in Services (MSITS) was prepared in 2002 by the Interagency Task Force on Statistics of International Trade in Services. As an internationally accepted methodological framework, MSITS provides guidelines for the collection and compilation of statistics on trade in service with special focus on the mode-wise trade of GATS. The major contribution of MSITS is the guideline for the compilation of statistics on Foreign Affiliate Trade in Services (FATS) which is an

<sup>12</sup> This section is based on the revised version of the Manual on Statistics on International Trade in Services, unless otherwise mentioned.

indicator of Mode-3 trade and is also helpful for the estimation of Mode-4 trade<sup>13</sup>. In the context of measurement of Mode-4 trade, the manual on statistics of international trade in services (MSITS) also marks a significant step taken by international statistical agencies. However, MSITS 2002 failed to conceptualise the measurement of Mode-4 trade, as the work on such measurement was underway. It would be noteworthy to mention here is that there is also concordance between the manual, SNA and BPM. Therefore, the methodology provided by the manual can be easily adopted and used with the help of the data collected for the compilation of national accounts and balance of payment statistics. Since both the SNA and BPM have undergone revisions, the manual is also being revised. The revised MSITS adopts a broader approach for the estimation of Mode-4 trade compared to its earlier edition. In its revised version (expected to be published in 2010), the manual provides a clear distinction between Mode-4 and labour mobility based on the nature of the work contract. However, the MSITS framework measures trade in services for statistical estimations and is not based on the legal definitions of trade in services provided under the GATS. The scope of GATS is much broader than MSITS (Magdeleine and Maurer, 2008). Further, MSITS does not provide any statistics. It provides guidelines for the measurement of trade in services.

The latest MSITS provides a set of elements which may facilitate the detailed recording as well as comparability of data on trade in services between countries. The manual provides for the adoption of these suggested elements in a phased manner and divides the elements into four core elements (priority elements) and other recommended elements (long term goals). However, there is no restriction on which recommendation is to be given priority. The adoption of these elements depends on the needs and priorities of a country. The four core elements are:

1. Implementation of BPM6 recommendation for the recording of statistics on trade in services
2. Adoption of EBOPs for the compilation of data on balance of payments.
3. Collection of complete statistics on FDI as per ISIC, Rev.4 activities
4. Compilation of data on FATS in terms of sales, output, value added, export and imports, etc. This is to be collected as per the activity (mentioned in ISIC, Rev.4), industry and major partner countries for an international comparability.

The other recommended elements of the collection of data on international trade in services are mentioned below:

1. Completion of the compilation of the data on international trade in services as EBOPS including the data collection on the memorandum items
2. Collection of additional variables on FATS such as compensation of employees, net worth, net operating surplus, etc.
3. Separate identification of trade between related and unrelated parties under the framework of transaction of services between residents and non-residents.
4. Allocation of international service transactions as per four modes international trade in services of GATS.

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<sup>13</sup> This is because in the multinational companies, the parent company sends employees to its foreign affiliate situated in another country for supplying a particular service on temporary basis. FATS could be helpful in tracing such information of employees deputed in foreign affiliates by the parent company.

5. Collection of the data on the natural person. This is to include foreigners in the compiling economy and natural persons of the compiling economy abroad. Therefore, collection of the data on natural person is to record the export and import of Mode-4 trade from the perspective of the compiling economy.

The manual proposes a conceptual framework for the measurement of trade in service which compilers can follow. It points out that data on different trade aspects of services largely affects the strategies of negotiation at GATS as against negotiations for the entire service sector (horizontal commitments). Trade negotiations also include sector specific commitment. It also provides a sense of the efficiency of different trade liberalisation measures of the economy. Therefore, in the absence of a detailed and comprehensive database on trade in services, it is difficult for countries to understand the stakes of different trade negotiations for them. However, the existing trade statistics provided by the BoP only records the transaction between residents and non-residents and therefore, trade through commercial presence and movement of natural person is difficult to assess. Also, the W/120 service classification list adopted by GATS, which is based on CPC, has not been revised since 1991 while the CPC has undergone several revisions. Further, the BoP statistics does not record data in accordance with CPC. The data requirement of GATS and that recorded by BoP statistics is different due to different objectives of these institutions. In this context, a detailed bilateral mode-wise service trade data disaggregated for specific services would be helpful to negotiators. The link between trade and output data of services will provide further insights on trade in services. Further, such detailed data would not only meet the needs of trade negotiators but also provide producers and consumers data on market dynamics. The data should also be available for a time span, which is not only costly but also burdensome to collect. These factors may hinder the detailed collection of data on trade in services. In addition to this, the problem of data on trade in services is compounded by the fact that certain services are recorded under trade in goods. Examples of this could be training, installation and maintenance services. Double counting of data, particularly in the case foreign affiliates, is a possibility. This happens in a case where there is sales service from the parent company to its foreign affiliate and then from the foreign affiliate to local consumers in the host country (where the foreign affiliate is located). These transactions are recorded under trade in services whereas the latter transaction is recorded in FATS statistics.

The problem associated with the maintenance of statistics on GATS mode-wise trade in services is the allocation of a particular service transaction to a specific mode of supply because a particular transaction may require a combination of different modes. For instance, the service transactions under construction need a combination of modes for international transaction. A particular construction assignment may need Mode-1, 3 and 4 to supply the service to a foreign consumer. The transaction may involve initial discussions over electronic media for finalisation of cost of the construction. This is Mode-1. Then the producer may sign a contract with the consumer. This may happen electronically which is Mode-1 trade or through the physical proximity between producer and consumer which falls under Mode-4 trade (here the assumption is that the producer of the service moves to the consumer). Further, the parent company may send its workers headed by a couple of supervisors to the construction site abroad. This is Mode-4. The supervision of the work may be done

by the parent company in consultation with the supervisors sent abroad and with the consumer. This happens electronically which is Mode-1. Therefore, in international transactions certain services need a combination of different modes. It is evident from the above example that the mode of a service transaction is defined in terms of the location of the producer and consumer. However, in certain cases it is difficult to locate the origin and destination of the trade and the mode/s of supply of service. These problems arise in the case of Mode-1 and 2 where the producer is not present in the territory of the consumer. All these factors make the estimation of service transaction difficult. This is even severe in cases where the service transaction involves a combination of modes of supply. The allocation of such a service transaction to a particular mode depends upon the compilers. Furthermore, different agencies (banks, software companies, migration officers, retailers, etc.), involved in data compilation adopt different accounting standards suited to their convenience which affects the nature of the data and its compilation in accordance with BoP or FATS is difficult.

For any analysis of trade in services, the value of exports and imports, and information on service FDI and service delivered through the movement of natural person is essential. Although, it is not possible to collect the information required by GATS, an ideal database on services should provide data on the individual service products or activities of the service supplier transacted, and the direction of such trade. For instance, the database on Mode-4 should provide, at the least, information on the origin and the destination of the service provider for different skills and occupations as per the length of stay of the provider. With regard to the mode-wise allocation of service transaction, the manual proposes a simple method which is derived from the GATS definitions and is based on international guidelines. This allocation criterion is based on the location of the supplier and consumer during the time of the service transaction. The manual suggests that if a service transaction requires a combination of different modes of service transaction like construction services, as mentioned above, such service transaction is allocated to the significant mode required for it (significant mode is the dominant mode of such service transaction which means that the major share of the service is delivered through that particular mode). In the case of construction services, much of the service is delivered through Mode-4 and the service transaction is facilitated by Mode-1 trade. Therefore, such service transactions can be allocated under Mode-4 trade. Further, the manual suggests that service components like transport, telecommunication, financial and insurance of BPM6/EBOPS could be allocated under Mode-1 because most of these services are provided without physical proximity between producer and consumer (electronically or on-line services). However, in service items like insurance the insurance agent moves to the consumer to motivate him about the contract while much of the service is provided on-line. In such circumstances, the service transaction is allocated to Mode-1 trade as majority of the transactions happens through such mode of service supply. Further, such a method shows that the allocation of transaction to a particular mode depends on the time and resources associated with it.

As already envisaged, the 'travel' category of the BPM6 measures the Mode-2 trade. This account includes the expenditure made by non-residents during their visit to the compiling economy. However, it includes the expenditure on goods and services by the non-residents. Only the expenditure on the service component of 'travel' is measured as Mode-2 trade under GATS. In this regard, the manual suggests that the expenditure on goods should be separately identified and it does not

correspond to any mode of trade under GATS as it only considers the trade in service component of any transaction. Classification of EBOPS and BPM6 for recording travel data is also useful because a wide range of components like health and education expenditure made by the non-residents during visits to the compiling economy is considered. Following the IRTS 2008 and TSA-RMF 2008 for covering the travel expenses will also be helpful for the trade negotiators.

The manual particularly stresses on the measurement of FATS and Mode-4 trade. For such an exercise, survey-based methods incorporating question to separately identify the mode-wise share of various service transaction is imperative. However, a survey method would be costly as well as burdensome to any country. Therefore, it is essential that compilers restrict such an exercise to cover only those services which are considered important for their economy. Regular labour and household surveys to collect information on various aspects of labour mobility in terms of the purpose of a citizen going abroad, duration of stay, remittances and employment status will also be useful to trace Mode-4 movements in the context of international migration. However, as Singh (2005) asserts, using survey methods for the collection of data on Mode-4 would be useful, but poor response by the respondent may lead to low quality of data on disaggregated services collected through such surveys. Additional information on Mode-4 can be collected from tourism and migration statistics. The manual further highlights that the link between trade and business registers will provide further information on most of the indicators related to trade in services like intra-firm trade, employment etc. However, such a survey has its limitation. For instance, as Whichard (2001) points out, the absence of mode-wise data is persistent problem associated with trade statistics on services. Availability of such statistics will be useful in identifying barriers to each mode of service transaction and is also useful for GATS negotiations. However, such statistics are difficult to trace from business records because business firms do not capture such mode-wise trade in their accounting standards. Even if such a system exists, the involvement of multiple modes of supply for a specific service transaction intricate the collection of mode-wise statistics on trade in services. Whichard (2001) suggests that case studies of specific service industries would be useful in allocating specific service transactions to different modes. Therefore, sectoral performance indicators (international frights carried, international telephone tariff, out turn of professionals like doctors, nurses, etc) could also be useful to get a sense of the market opportunities for trade in that particular sector and assessment of a sector from the view point of trade in services. The manual also suggests that the use of migration data, household and labour force surveys would be helpful in tracing out the Mode-4 trade. Since such surveys may not be able to collect information in their present form, additional questions have to be added to such surveys for the collection of data on Mode-4.

Apart from the revised manual and IMF BPM6, there were regional attempts to compile statistics on trade in services (see the table below). For instance, the OECD started initiatives to collect and compile data on bilateral trade in services between OECD countries. To a limited extent, it also covered bilateral trade in services between OECD and non-OECD countries. Apart from the data on bilateral flows, the major contribution of such a database can be seen in terms of extracting data for the export and import trade in services for non-reporting IMF members based bilateral exports and imports. However, coverage of countries is a major limitation of this database, as it does not cover most of the

Asian countries. Further, it does not provide a long term time series data on bilateral trade in services. It covers only the recent years. Moreover, it does not provide data on the bilateral flow of income and transfer category of BoP like compensation given to employees or workers' remittances which are important variables for the calculation of Mode-4. Further, like IMF BoP data, the OECD database is not in conformity with the GATS mode-wise trade in services which means like IMF BoP, it provides proxy measures for GATS four modes of trade in services.

Although efforts to collect data on foreign affiliates are in the initial stages, countries are increasingly trying to collect data on such trade. The data on Foreign Direct Investment (FDI) would be good indicator but it does not capture the entire essence of the statistics on trade through foreign affiliates. The data collection on FATS has already been started by the OECD and the UNCTAD. In fact, based on a questionnaire, the OECD conducted two surveys in 1995 and 1998 to collect information on inward and outward FATS according to activity and destination. The collection of data on outward FATS was more problematic than the inward FATS due to the confidentiality provisions maintained by host countries on investment related activities (Maurer *et al*, 2008). The IMF also provides data on FDI that is used as an indicator of FATS but it does not provide the direction of such flows to different partner countries and also industry of activity is not known in the statistics provided by the IMF. The following table shows the data collected by the OECD, Eurostat and the IMF on trade in services.

**Table 2: Data dissemination by different international organisations**

Publication	Country coverage	By type of services	By partner country
IMF Balance of Payments Statistics Database (book and CD-ROM)	IMF Members	Yes BPM5 and EBOPS (provided to IMF on voluntary basis)	No
Eurostat New Corons Database (on-line and CD-ROM)	EU members, Total EU. euro Area, EU candidate countries	Yes EBOPS	Yes 70 partner countries and partner regions (250 of total services)
OECD statistics on international trade in services, Volume 1. Detailed tables by service category (a joint publication by OECD and Eurostat) (Book, on-line and CD-ROM)	OECD members	Yes EBCPS	No
OECD statistics on international trade in services, Volume 2. Detailed tables by service category (a joint publication by OECD and Eurostat) (Book, on-line and CD-ROM)	29 OECD members, Hong Kong and Russian Federation	Total services Transport, travel and other commercial services n.i.e Government services n.i.e	Yes, 70 partner countries and partner regions
WTO's International Trade Statistics (book and CD-ROM)	All countries	Yes, summery data and analysis	Yes, summery data

Source: Maurer *et al* 2008

Although inadequacies in data like direction of trade and FATS statistics exist, international organisations are trying to disseminate more detailed data on trade in services. In fact, OECD countries

are maintaining data on trade in services as per EBOPS and FATS statistics as a regulation imposed by the European Parliament and the council of community statistics. On the other hand, the United Nations Statistical Division has been working towards the development of statistics on trade in services for non-OECD countries. Also, international agencies have been conducting various workshops to motivate countries towards MSITS. Further, project on improving the guidelines for the collection of data on trade in service by groups of countries is already in place. However, all these efforts would be meaningless, if the non-OECD countries do not develop detailed data on trade in services. At present, such a step is still at its infancy (Maurer *et al*, 2008). However, the question of comparability of data collected from various sources exists due to heterogeneous nature of standards and methodologies adopted by different countries. In this regards, Whichard (2001) suggests that international organisations would play the role of clearing houses that would provide a consistent presentation of data collected from different countries.

## Conclusion

The dynamics of trade in services has attracted the attention of economists since Adam Smith, but not to the extent of goods. This is because traditionally services were considered as invisible, non-tradable and non-storable and either considered as 'intangible goods' or intermediaries in the production of goods. Perhaps, it is this simple reason why economic theories do not consider services at all. Therefore, economists seem to be applying the conceptual framework of goods to services. However, services are different from goods. A car is a good while a haircut is a service. Nevertheless, over time particularly after the definition of services provided by Prof Hill in 1977, much thought has been given to considering services as different from goods. With a workable definition, Hill (1977) made it clear that since services are invisible and non-storable, unlike goods, their production and consumption occurs simultaneously. It is this simultaneity that made later economists to think of a service in terms of the physical proximity between its producer and consumer and a service which do not require such physical proximity. In this regard, the work by Bhagawati (1984) provides a stimulus. Such a classification of services created new avenues for economic thinking on trade in services. Further, the evolution of information technology worked as a stimulus for trade in services. For instance, health services require the physical proximity between producer and consumer where as Business Processing Outsourcing services does not require such physical proximity. All these developments have a certain impact on the data on trade in services. Since, economists did not consider services to be different from goods, the development of a database for the measurement of services and trade in services was never thought of. Apart from a few attempts to analyse the composition of the service sector following a residual approach (in which activities which cannot be put under agriculture and industry are considered as service), the measurement of service output and trade in services did not get the deserved attention till recently. Nevertheless, with the growing realisation of the fact that services are different from goods and their significant contribution to an economy, both national and international statistical agencies have started working on the development of databases covering services and trade in services. Noteworthy to mention here is that since there is a dearth of data on trade in services, the usual trade indicator cannot be applied to analyse trade in services. With the evolution of GATS, demand for

statistics on GATS mode-wise trade is also increasing. This is because of the imperativeness of such statistics for multilateral trade negotiations on services. In this regard, this paper explores the data need for the measurement of GATS mode-wise trade, lacunas in the existing data on trade in services in measuring GATS mode-wise trade, and the on-going methodological work to develop databases on different indicators of such trade. The paper finds that although the most widely used IMF BoP data is useful for the measurement of trade in services, it does not provide a good base for the measurement of GATS mode-wise trade. This is because IMF BoP data is provided to understand the BoP position of a country and not to measure GATS mode-wise trade. Since services are a part of the current account of BoP of a country, more often than not, service data provided in the BoP are used to analyse the trade scenario of services. Further, the paper highlights the on-going multilateral and regional efforts in developing a database on trade in services in general and GATS mode-wise trade in particular. In conclusion, the paper suggests various ways of capturing GATS mode-wise trade in line with MSITS (2010). In this context, the paper highlights the imperativeness of business, labour market and migration surveys to capture various modes of service trade provided by GATS.

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