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6 Developing a Data System for International Sales of Services
Progress, Problems, and Prospects

Bernard Ascher and Obie G. Whichard

Long before the advent of computers, television, or jet aircraft, "trade in services" was taking place regularly. Sea captains, explorers, engineers, tradespeople, money changers, travelers, couriers, and camel drivers engaged in a variety of international transactions involving such services as transportation, banking, construction, communications, and tourism. Most of these services were regarded as activities necessary to support trade in goods, rather than as parts of an integral business sector with distinct economic significance of its own.

Notwithstanding its lengthy history, trade in services has emerged only recently as a generic subject within international economics and as a concern of government policy makers and statisticians. The heightened interest in trade in services—and in its statistical measurement—has occurred in concert with the increase in the scope of services trade that has resulted from improvements in transportation, communication, and information-processing technologies, as well as from the general increase over time in the share of services in economic activity.

This paper describes recent U.S. government efforts—essentially, those made during the 1980s—to develop, expand, and improve a data system for international sales of services. It consists of six sections and an appendix. Section 6.1 provides background information on the context in which interest in services-trade statistics developed and on the data inadequacies that existed before steps to improve the statistics began to be implemented. Section 6.2

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The views expressed in this paper are those of the authors and not necessarily those of the U.S. government agencies with which they are affiliated.

examines and identifies the types of transactions to be covered and the information needed to measure and analyze international sales of services. Section 6.3 reports on the progress made to date in improving the data. Section 6.4 discusses a number of unresolved conceptual and technical problems that have received scrutiny within the United States or in international forums. Section 6.5 assesses the prospects for achieving further progress. Section 6.6 is the conclusion. The appendix gives a more detailed account of the improvements summarized in section 6.3.

6.1 Background and Introduction

It was not until the 1970s that the term "trade in services" began to appear in discussions of international trade among business and government groups. Led principally by insurance and other financial institutions, information-based companies, retailers, and travel organizations, various service businesses began to see a commonality of interest in dealing collectively with the U.S. government. At the same time, advancements in transportation, communications, and information-processing technologies made the internationalization of services virtually inevitable and helped accelerate the demand by U.S. service-producing industries for equal treatment with goods producers in trade promotion and trade liberalization initiatives. Through these efforts to attain government assistance, international trade became a rallying point for service industries. Trade considerations became a driving force behind the quest for better statistics on services generally, including indicators of both domestic and international activity.

6.1.1 Data Inadequacies

Data on trade in services are not as comprehensive, detailed, timely, or internationally comparable as data on trade in merchandise. Estimates of the value of U.S. international trade in services vary substantially, partly because of differing definitions of services trade and partly because of differing estimates of missing information. Although the dimensions of services trade are becoming more clearly defined as data improvements are made and as the subject receives more study, the findings of several studies conducted during the early to mid-1980s illustrate the uncertainty that existed at the time data improvement efforts were beginning to be made.

According to Economic Consulting Services (1981), in a study based on sixteen service industries with an important stake in international trade, the total value of U.S. services exports for the year 1980 was roughly $60 billion; this figure contrasts sharply with the figure then available through official statistics ($36 billion) (Krueger, 1981). A second study, by the U.S. International Trade Commission (1982), estimated foreign revenue generated by fourteen service industries operating overseas to be about $90 billion in 1980. A third study, by the U.S. Congress, Office of Technology Assessment (1986), esti-

mated that services trade in 1983 ranged from $154 billion to $181 billion, consisting of $67–$84 billion in direct exports and $87–$97 billion in affiliate sales (excluding banking). A press release issued with the report (September 11, 1986) stated that "as much as half of U.S. service exports may escape the official statistics."

It is important to note that the primary sources of statistics on international services (balance of payments accounts and surveys of direct investment) were not designed to provide all of the information needed for trade policy purposes, nor were they designed to provide the kind of detail now being sought on services transactions. Although the U.S. data collection system on international transactions is among the best in the world, it does not provide information to suit all specific purposes. As the global economy has evolved and the role of international services has expanded, there is new and added need for more comprehensive and detailed information. Historically, worldwide collection of balance of payments statistics has focused on certain major categories of services, such as travel and transportation. Information on other services has tended to be fragmentary, with little uniformity among countries in the range of services covered.[1]

International comparability of data is hampered by both informational and presentational differences among countries. Few countries collect balance of payments data in the same detail as the United States, and no other country conducts regular surveys of services sold through direct investment enterprises. Where information does exist, use of a standardized format or classification system will facilitate comparability on an international level, as it has in the case of merchandise trade classified according to the Standard International Trade Classifications (SITC) system. Attempts to establish such a system for services trade are currently underway in international forums.

Before commenting further on the state of international services data in the period before data improvement efforts began (i.e., before the early 1980s), it is necessary to spell out in more detail the types of transactions that are to be covered.

6.2 Types of Services and Transactions to be Covered

Services have been defined in a variety of ways: *positively*, as intangible and invisible economic outputs; *residually*, as outputs other than those considered as goods; and *functionally*, as activities that bring about a change in the condition of a person or a good.[2] In most cases, the classification of an output is

1. Information on available balance of payments data on services in OECD countries is presented, with as much detail by type of service as could be assembled, in Organisation for Economic Cooperation and Development (1989).

2. The positive and residual definitions have been so widely used as to have attained almost a generic status, and cannot readily be attributed to specific persons. The functional definition was introduced by Hill (1977).

the same under each definition, and all of them would include services involved in international trade such as the following: banking, insurance, and other financial services; transportation; communications services; data-base and other information services; computer and data-processing services; management and consulting services; accounting, legal, and other professional services; advertising; franchising; tourism, lodging, recreation, and entertainment; and education and training.

Although differences of opinion remain, trade in services in the broadest sense incorporates all transactions that involve the movement of producers, consumers, knowledge, information, or legal instruments across borders, as well as movement of the services themselves. Trade in services differs from trade in goods in many respects. The export of goods almost always involves consumption or use in a country other than the one in which the goods were produced. The export of services, on the other hand, can involve consumption or use in the exporting country, the importing country, or even a third country. Production of services can take place in any of these locations as well.[3]

While technology makes it possible to deliver some services from remote locations, such as television broadcast of live sports or entertainment events or telefax transmission of architectural drawings, other services remain dependent upon on-the-spot performance, such as retail banking and insurance services or construction of buildings and bridges. To encompass these different means by which services are rendered internationally, the compilation of statistics on international sales of services must include information, not only on the cross-border transactions that are recorded in balance of payments accounts, but also on services performed or delivered through affiliates established within other countries (often termed "establishment transactions").

Cross-border transactions are transactions between residents and nonresidents. They are recorded in the nation's international transactions, or balance of payments, accounts. Examples of cross-border transactions include the movement from one country to another of: (i) passengers and cargo (transportation services); (ii) voice, video, and data (communication and information services); and (iii) intellectual property rights (patents; trademarks; franchises; distribution rights for books, records, films, and tapes; and broadcasting and recording rights).[4] Other forms of cross-border transactions are the travel-related services consumed by nonresident tourists,

3. The various possible combinations of places where production and consumption may occur are discussed in McCulloch (1987) and in Stern and Hoekman (1987). For discussions of the possibilities for production and consumption to occur at different locations—sometimes referred to as "disembodiment" of the service—see Bhagwati (1984) and Sauvant and Zimney (1985). Although many examples of disembodied services have been given, usually involving the use of communications technologies to transmit work products to the customer, available data for U.S. multinational companies show that a preponderance of sales of services is local (i.e., to customers in the same country as the parent or affiliate making the sale).

4. Payments and receipts for rights to use intellectual property may be considered a form of factor income, rather than nonfactor services. They sometimes are considered as services, however, and are included in this review of data needs for the sake of completeness.

students, and medical patients, and the services produced by business consultants, engineers, lawyers, and others visiting the country in which their clients are located.

Establishment transactions include sales of services (such as accounting, advertising, and insurance) through branches, subsidiaries, or other affiliates in another country. Sales by these entities in the countries in which they are located are not balance of payments transactions, because they are between residents of the same country. For the United Sates and many other countries, establishment transactions provide an important channel for delivering services internationally. In some cases, because of the nature of the service, such transactions may be the only practical means of performing services in, or delivering services to, foreign markets. For services such as banking and insurance, a local presence may be required by law to conduct business in a given country. The United States is currently the only country that regularly collects statistical information on establishment transactions. However, other countries have begun considering the collection of such information, as interest in services has grown and as the role of establishment transactions in the delivery of services to foreign markets has become more widely recognized.

Although the term "services" has historically been used in balance of payments presentations to refer to current account transactions other than merchandise trade and unilateral transfers, services are generally defined less broadly for purposes of trade policy or corporate planning. (Both the broad and the narrow definitions of services are included in the term "invisibles," which is composed of services in the broader sense and unilateral transfers; see Sapir 1982.) For these particular purposes, services generally are taken to exclude factor income—that is, returns to the factors of production of land, labor, and capital, such as returns on investments or wages of nonresident workers.[5]

In one sense, the focus of this paper is on this narrower definition of services, inasmuch as we do not consider factor income. In another sense, however, our focus is broader than the balance of payments accounts. We consider in addition to the traditional measure of "exports and imports" of services the sales of services abroad through foreign affiliates of U.S. companies and the sales of services in the United States through U.S. affiliates of foreign companies. For many purposes, including applications to trade policy or corporate planning and the measurement of international markets for services, it is more

5. A recent shift in usage toward the narrower definition can be noted. In the official U.S. balance of payments presentation, "services," which previously had been used in the broad sense, was more narrowly defined in June 1990 to exclude investment income. In January 1989 *The Service Economy,* a publication of the Coalition of Service Industries, began publishing a "True Services Balance," which was defined similarly but confined (as is this paper) to private services transactions (see Sinai 1988). However, inasmuch as both measures contain some flows of factor income, neither of them is in complete conformity with the narrow definition.

relevant to gauge the value of *sales* of services through foreign affiliates than the value of *earnings* derived from these affiliates.[6] In this regard, the use of sales revenue as the common denominator for measuring services transactions is parallel to the treatment of merchandise trade, whose statistics are based on the value of sales, not on the value of profits.

6.2.1 Specific Information Needed

Ideally, a statistical system for services should satisfy the need for a variety of data to quantify and analyze world markets for services. Such analysis requires information both on trade flows and on services activity within individual countries. The information should provide answers to the following basic groups of questions:

1. What types of services were sold in a given time period? This would include some detail on the specific type of service, such as the kind of insurance, training, or communication. A uniform classification system, applicable to all types of transactions, would be useful in this regard.
2. At what price, and in what quantity, was each type of service bought or sold? What was the total revenue involved in the transaction?
3. How was the service conveyed? Through what channels did the trade occur? To what extent were services delivered to, or obtained from, foreigners through cross-border transactions and to what extent through establishment transactions? In the case of the cross-border transactions, where was the service actually performed—in the country of the buyer, the country of the seller, or in a third country? Were the services sold in conjunction with the sale of goods or equipment?
4. What was the nationality of the seller? The buyer? And what was the relationship, if any, between the buyer and seller of the services? To what extent were the transactions between affiliated parties (e.g., between parent and affiliate or between affiliates of the same parent company) and to what extent were they between unaffiliated parties?

To facilitate further analysis of the significance of trade, an additional group of questions would seek information on market size:

5. What is the extent of domestic production and consumption of tradable services and, thus, what portion of production is exported and what is the market share of imports? What is the level of production and consumption of these services in other countries?

6. Investment earnings in the current account of the balance of payments include returns to investment in goods as well as services operations, in addition to income from portfolio investment and ownership of real estate. For these reasons, investment income in the balance of payments does not reflect the sales of services by U.S. affiliates abroad on the same basis as export sales of services by the parent companies in the United States. See Sapir (1982) and Stalson (1985).

The above questions provide criteria for judging the extent of improvement needed or attained in developing a data system with extensive detail on a wide variety of services provided internationally.

6.3 Progress

The basic approach to improving U.S. statistics has been a pragmatic one—building on or adapting existing sources of information, rather than creating a new system. Under this approach, services trade statistics are drawn primarily from two sources: the balance of payments accounts, which are compiled from survey data and a variety of other sources; and the data-base on the operations of direct investment enterprises, maintained by the Bureau of Economic Analysis of the U.S. Department of Commerce.

In general, these two sets of statistics correspond to the two broad groups of transactions identified in the previous section. Balance of payments statistics cover cross-border transactions (that is, transactions between residents and nonresidents). The statistics on direct investment include information on establishment transactions (i.e., sales by U.S.-owned affiliates in foreign countries and by foreign-owned affiliates in the United States); these are not balance of payments transactions.

6.3.1 Impetus for Data Improvement

The impetus for data improvement has stemmed both from an increased emphasis on services in U.S. trade policy and from a recognition that better information on services trade was needed for compiling the balance of payments and national income and product accounts.

By including services in the definition of "commerce," the Trade Act of 1974, for the first time, provided the President with authority to include services in trade negotiations. The Trade and Tariff Act of 1984 made this authority more explicit.[7] It also contained a number of other provisions dealing with services, including some pertaining to statistics. Specifically, it: (1) provided for the establishment of a services-industry development program, including various studies and reports; (2) called for a data-base to be established to help evaluate government policies and actions pertaining to services; (3) provided for mandatory reporting of trade in services; and (4) called for a benchmark survey of services transactions between U.S. persons and unaffiliated foreign persons. The Omnibus Trade and Competitiveness Act of 1988

7. The authority was utilized in September 1986, when services were formally placed on the agenda for the Uruguay Round multilateral negotiations being conducted in GATT. The *Economic Report of the President,* transmitted to the U.S. Congress in January 1987, took note of the possible link between these negotiations and the success of data-improvement efforts, stating that "developing better measures of activity in the services area could be an important by-product of the Uruguay Round trade negotiations."

extended and built upon these provisions. It provided, inter alia, for expansion of existing surveys to cover eight specified groups of services and for information on services to be included in a National Trade Data Bank to be established under the Act.[8]

Within the executive branch, an Interagency Task Force on Services Trade Data, chaired by the Office of the U.S. Trade Representative, was established in 1982 to review existing statistics and to examine specific needs of data users. Other functions of the task force are: to recommend data improvements; to coordinate the work of the various U.S. agencies with an interest in the data; to work with the private sector to develop needed information and to assess the feasibility, cost, and burden of collecting the data; to identify technical, legal, administrative, and financial problems arising from the data improvement program; and to recommend ways of resolving these problems. A number of private business groups and numerous individual firms have, at one time or another, been consulted in the development or evaluation of specific data-collection proposals.

6.3.2 Steps Taken

This section demonstrates the improvements in coverage of sales of services by presenting two tables, one containing information on cross-border transactions in 1979 (before the improvement effort began) and in 1988, and one presenting data on establishment transactions in 1988. (Data on establishment transactions are not available for 1979.[9]) A more comprehensive summary of recent steps to improve U.S. statistics on services trade appears in Appendix A.[10]

The improvements in coverage of cross-border transactions over the nine-year period spanned by table 6.1 are striking. At the beginning of the period, information on cross-border transactions was confined to travel, transportation, telecommunications, royalty and fee transactions with unaffiliated parties, construction and related services (available only for U.S. sales), reinsurance, and film rentals. Information on services transactions with affiliated parties was collected and recorded in the balance of payments accounts, but receipts and payments were netted for each type of direct investment (U.S. abroad and foreign in the United States), so that the data did not reveal the full two-way value of the transactions, as required by the format of the table.

8. The eight groups of services are: banking services; information services, including computer software services; brokerage services; transportation services; travel services; engineering services; construction services; and health services.

9. Information on the operations of foreign affiliates of U.S. companies and of U.S. affiliates of foreign companies had been collected for some time (see e.g., Pizer and Cutler 1957). However, as explained later in this section, the breakdown of sales needed to derive establishment transactions in services was not collected.

10. Appendix A updates and expands upon an earlier summary of improvements discussed in Ascher and Whichard (1987).

Information on most business, professional, and technical services was unavailable.

By 1988, estimates of the transactions with affiliated parties had begun to be made available on a gross basis, thus permitting the separate identification of U.S. sales and purchases. Information had also become available on transactions with unaffiliated foreigners in a variety of business, professional, and technical services, largely as a result of new Bureau of Economic Analysis surveys. Estimates of educational services, medical services, and (some) financial services had begun to be made using indirect methods.

Despite some missing elements, enough information is available to permit a meaningful total on cross-border transactions in services to be struck for 1988, whereas this could not be done for 1979. Measured U.S. sales of services to foreigners in 1988 were $95 billion, and U.S. purchases of services from foreigners were $80 billion. (If coverage had been the same as in 1979, the figures recorded would have been roughly $75 billion for sales and $69 billion for purchases.[11]) For both sales and purchases, travel and transportation accounted for the largest shares of the total.

For establishment transactions, sales of services to foreign persons by majority-owned affiliates of U.S. companies were $101 billion in 1988, while sales of services in the United States by U.S. affiliates of foreign companies were $107 billion (table 6.2).[12] Sales were largest for U.S. and foreign affiliates in finance (except banking), insurance, and real estate, and in "services."[13]

A number of data improvements during this period are not evident from the tables. For several services, data have improved in quality because of a change in the basis for reporting from voluntary to mandatory. Also, some surveys have been expanded to collect additional types of information, including surveys on insurance, construction, and intangible assets. Other improvements include expanded collection of information on domestic services activity by the Census Bureau, institution of an international price program by the Bureau

11. It should be emphasized that these figures are only rough calculations, intended to illustrate the order of magnitude of the data improvements. They were made by assuming that: (a) services transactions between affiliated parties would have been gauged using U.S. parents' net receipts from foreign affiliates (which appear in the U. S. balance of payments accounts under "exports") as the measure of U.S. sales and using U.S. affiliates' net payments to their foreign parents (which appear under "imports") as the measure of U.S. purchases: and (b) transactions between unaffiliated parties would have been measured as the sum for 1988 of items shown in table 6.1 for both years. A more precise estimate would require quantifying the effects of a variety of factors discussed elsewhere in this paper, such as the change in the basis for reporting on several surveys from voluntary to mandatory, changes in data sources, and changes in the scope of existing surveys.

12. See the note to table 6.2 for information on the comparability of the figures on sales of U.S. and foreign affiliates.

13. Here "services" corresponds to the Services division of the SIC. As indicated in the note to table 6.2. a broader group of industries is designated as services-producing for purposes of distributing sales between goods and services.

Table 6.1 **U.S. Cross-Border Transactions in Services, 1979 and 1988 (millions of dollars)**

	1979		1988	
	U.S. Sales	U.S. Purchases	U.S. Sales	U.S. Purchases
Total	n.a.	n.a.	95,480	80,017
With affiliated foreigners[a]	n.a.	n.a.	18,148	6,886
With foreign parents	n.a.	n.a.	3,266	3,539
Royalties and license fees	n.a.	n.a.	238	1,205
Other services	n.a.	n.a.	3,028	2,334
With foreign affiliates	n.a.	n.a.	14,882	3,347
Royalties and license fees	n.a.	n.a.	8,455	119
Other services	n.a.	n.a.	6,427	3,228
With unaffiliated foreigners	n.a.	n.a.	77,332	73,131
Royalties and license fees	1,204	309	2,522	1,086
Travel	8,441	9,413	28,935	33,098
Passenger fares	2,156	3,184	8,771	7,932
Other transportation	9,971	10,906	18,939	19,675
Freight	3,432	6,701	5,364	11,845
Port services	6,390	3,684	12,820	7,099
Other	149	521	755	732
Education	n.a.	n.a.	4,142	543
Financial services	n.a.	n.a.	3,831	1,656

Insurance	n.a.	n.a.	1,669	2,655
Primary insurance, net	n.a.	n.a.	1,500	561
Reinsurance, net	218	835	169	2,094
Telecommunications	1,101	1,244	2,203	4,577
Business, professional, and technical services	n.a.	n.a.	5,536	1,869
Accounting, auditing, and bookkeeping	n.a.	n.a.	37	31
Advertising	n.a.	n.a.	154	176
Computer and data-processing	n.a.	n.a.	1,255	107
Data-base and other information services	n.a.	n.a.	196	39
Engineering, architectural, construction, and mining (net)	1,054	n.a.	1,074	465
Installation, maintenance, and repair of equipment	n.a.	n.a.	1,289	618
Legal services	n.a.	n.a.	271	98
Management, consulting, and public relations	n.a.	n.a.	362	73
Medical services	n.a.	n.a.	541	n.a.
Research and development, commercial testing, and laboratory services	n.a.	n.a.	236	182
Other	n.a.	n.a.	121	80
Film rentals	284	63	784	40

Source: U.S. Department of Commerce, Bureau of Economic Analysis.
Note: n.a. = not available.
[a]Data on trade in services with affiliated foreigners were collected in 1979, but receipts and payments were netted for each type of direct investment (U.S. abroad and foreign in the United States), so that the two-way flow of trade could not be discerned. Because the net figures are shown in the U.S. balance of payments accounts, the sales and purchases figures shown here exceed exports and imports as recorded in those accounts.

Table 6.2 **U.S. Establishment Transactions in Services, by Industry, 1988 (millions of dollars)**

Industry of affiliate	Sales of services to foreign persons by foreign affiliates of U.S. companies	Sales of services to U.S. persons by U.S. affiliates of foreign companies
All industries	100,733	107,050
Petroleum	7,199	2,677
Manufacturing	11,440	5,493
Wholesale trade	11,341	1,580
Finance (except banking), insurance, and real estate	36,937	67,911
Finance, except banking	(D)	16,963
Insurance	20,673	39,967
Real estate	(D)	10,981
Services	27,702	16,471
Hotels and other lodging places	(D)	2,680
Business services	16,393	6,315
Motion pictures	3,388	(D)
Engineering and architectural services	2,612	1,383
Health services	684	(D)
Other services	(D)	3,484
Other industries	6,114	12,919
Transportation, communication, and public utilities	5,665	11,278
Other	449	1,641

Source: U.S. Department of Commerce, Bureau of Economic Analysis.
Note: D = suppressed to avoid disclosure of data of individual companies. Data for foreign affiliates cover only affiliates that are majority-owned by U.S. direct investors; data for U.S. affiliates cover all U.S. affiliates (i.e., all U.S. business enterprises owned 10 percent or more by a foreign direct investor). Data for foreign affiliates include, while data for U.S. affiliates exclude, investment income included in operating revenues of finance and insurance companies (see section 6.4 for discussion). The sales considered as sales of services in this table are those associated with the Services division of the SIC; and with finance (except banking), insurance, and real estate; agricultural, mining, and petroleum services; and transportion, communication, and public utilities. The exclusion for banking reflects the limitation of the data to nonbanks.

of Labor Statistics, and revision of classification systems. Information on these and other improvements is provided in Appendix A.

6.4 Problems

Most of the improvement efforts described in the preceding section can be characterized as pragmatic measures directed at closing gaps in coverage, expanding the amount of detail provided, or reorienting the data to facilitate use in a wider variety of applications. Progress is also needed in articulating and resolving a variety of conceptual and technical problems and in reaching a consensus on treatment of borderline cases.

This section discusses a number of problem areas and borderline cases. Several of them are being considered in connection with international exercises, including the development, under United Nations auspices, of the Central Product Classification, the revision of the United Nations System of National Accounts, the deliberations carried out over several years in a statistical working party of the Trade Committee of the Organisation for Economic Cooperation and Development, and the work done in anticipation of the eventual revision of the International Monetary Fund's *Balance of Payment Manual* (1977). Some of the other problems discussed here have been the subject of deliberations within the Interagency Task Force on Services Trade Data.

6.4.1 Separating Domestic and International Transactions

Sometimes it is difficult to distinguish cross-border transactions from establishment transactions. In the case of a service performed in the country of a foreign customer, for example, when should it be considered to have been provided by a U.S. person (a cross-border transaction) and when should it be considered to have been provided by a foreign affiliate of a U.S. person (an establishment transaction)? International guidelines are of only limited help in answering such questions. The IMF *Manual* (1977) provides guidance in the case of installation of equipment, where a one-year rule is applied: an affiliate is considered to exist only if the duration of the operations exceeds one year. This rule could be applied analogously to other services. In practice, the rule has not sufficed in every situation.[14] In view of these difficulties, the United States has established a number of supplementary criteria that focus on the nature of the operations rather than on their duration.[15] It has outlined them in various discussions and questionnaires at the international level, and other countries and international organizations have expressed an interest in them as a means of more fully articulating the definition of a resident enterprise for purposes of categorizing international transactions.

14. For example, a permanent establishment may be set up to install equipment or perform other services (such as construction) in the country in which it is located; it would not make sense to consider the services provided by such an establishment as cross-border simply because they involve installation of equipment (or construction) in periods of under one year. Also, in many cases companies may not be able to accurately forecast the duration of projects.

15. In the case of activity abroad by a U.S. entity, if the entity is incorporated abroad it is considered a foreign affiliate, resident in the country where the activity occurs. If it operates abroad but is not incorporated there, its status is determined after considering it in relation to several other criteria related to the nature of the foreign operations. Typically, an entity operating abroad is considered a foreign affiliate if it: pays foreign income taxes; has a substantial physical presence abroad (e.g., plant and equipment or employees); maintains records that would permit preparation of separate financial statements, including an income statement and balance sheet (not just a record of disbursements and receipts); and takes title to, and has receipts for, goods it sold or received funds for its own account for services it performed. If some or all of these criteria are not met, the entity probably cannot be construed, or accounted for, as a separate foreign business enterprise, and its transactions are attributed to the U.S. parent company. Analogous criteria are applied to determine the status of activities in the United States by a foreign entity.

6.4.2 Interpretation of Data on Establishment Transactions

Several problems in interpreting statistics on establishment transactions should be recognized. For example, some may view affiliates that have been acquired by foreigners as domestic entities, whose activities do not become international in character simply because of a change in ownership. Similarly, some long-established subsidiaries of foreign companies may be regarded as local companies, but are actually foreign-owned. Cases in which there are multiple owners with differing nationalities, such as international consortia and joint ventures, could similarly pose problems of interpretation, because sales are not prorated according to the nationalities of the various owners. Similar problems of interpretation may arise in comparisons of establishment transactions with cross-border transactions, since the two will normally differ with respect to the principal location of value added and the attribution of value added to the various factors of production in the countries involved in the transactions. Also, problems of duplication may arise where there are indirectly held affiliates whose sales could be included in the establishment transactions of both the country of the ultimate beneficial owner and the countries of intervening foreign parents in the ownership chain. Finally, no information on *purchases* of services by affiliates is available.

As indicated in the note to table 6.2, the data on U.S. and foreign affiliate sales are not strictly comparable: the data for foreign affiliates are restricted to affiliates that are majority-owned, whereas the data on U.S. affiliates cover all affiliates; also, the data for foreign affiliates include investment income of finance and insurance companies, whereas the data for U.S. affiliates exclude such income. (As explained in Appendix A, the latter comparability problem is being resolved.)

Although the U.S. statistics on establishment transactions are unique—to our knowledge no other country regularly collects such information—they are limited by a lack of information on the *type* of service. The only information collected is whether the sales are of goods or of services. The industry of the seller usually provides some guide to the type of service sold, but cases often arise involving sales outside a company's primary industry (for example, computer and data-processing services sold by a computer manufacturer, an aircraft manufacturer, or a bank).[16]

6.4.3 Uses of Data Limited by Balance of Payments Conventions

As noted earlier, balance of payments data are a primary source of information on international services transactions. However, such data cannot serve all specific purposes, and as new uses of the data have materialized, it has become clear that additional data are sometimes needed.

Transportation services provide a case in point. To gauge a country's market

16. For further discussion of the U.S. system of data on establishment trade in services, see Whichard (1987, 1988c).

for international transportation services, the balance of payments accounts are a ready source of information; indeed, transportation, as a necessary accompaniment of trade in goods, has among the lengthiest histories of coverage by such accounts. Partly because of balance of payments conventions, however, these accounts do not provide all the information needed for purposes of trade policy or market analysis.

In principle, the balance of payments should record transactions in transportation services, as in the case of other services, that are between residents of different countries. For transportation, this principle would be difficult or impossible to implement in its pure form, since it would require knowledge on a case-by-case basis of who owned goods at the time of shipment and who paid the freight. To circumvent these difficulties, the IMF, in its *Manual* (1977), recommends that a special convention be adopted for transportation. The convention—one of three presented in the *Manual*—uniformly values merchandise f.o.b. at the point of exportation and assumes that charges for shipment are, in effect, always paid by the importer, who in some ultimate sense does bear these charges, even if the payment is sometimes embodied in payments for imported merchandise, rather than made directly to a transportation company.

In the case of the United States, which follows the convention, exports (sales) of transportation services are recorded as U.S. carriers' receipts for carriage of U.S. exports, irrespective of whether the payments to these carriers were in actuality made by U.S. or foreign persons. Similarly, imports (purchases) of transportation services are recorded as foreign carriers' receipts for carriage of U.S. imports, irrespective of whether the payments were actually made by U.S. or foreign persons. These measures, while useful for compiling the balance of payments accounts and while having the virtue of allowing for the uniform valuation of merchandise, may be difficult to use or interpret for purposes requiring identification of the actual parties to contracts for transportation services. From the broader standpoint of data needed to support analyses in the maritime or aviation areas, the balance of payments information is inadequate, since such analyses may require information on the total value of transportation between a country and its trading partners.[17] In the case of the United States, a major step in meeting these broader needs would be for information on U.S. carriers' receipts for carriage of U.S. imports and on foreign carriers' receipts for carriage of U.S. exports to be devel-

17. The broader data needs could perhaps be met with balance of payments data if a different convention were followed. The alternative conventions for recording transportation transactions discussed in the IMF *Manual* provide for recording a wider range of transactions than does the recommended one, which was selected partly on grounds of practicality and partly because the additional information was not deemed to be of primary interest for balance of payments purposes. As we have noted elsewhere (Ascher and Whichard 1987), the alternative conventions can be characterized as "grossing up the transactions to include all those related to the international transportation of goods, and then providing offsetting entries for those assumed to be between residents of the same country."

oped. Although these are domestic transactions by balance of payments conventions, some of them are, in reality, international, and the availability of information on them as a supplement to the information now compiled for balance of payments purposes would enable the full two-way value of international transportation markets to be gauged.

6.4.4 Noninterest Income of Financial Institutions

Noninterest income of financial institutions is composed largely of fees and commissions for a variety of services, such as fiduciary activities, data processing, consulting, and payments and settlements services. Such income also includes some nonfee activities—namely, gains and losses from foreign exchange and from sales of assets. In addition, some of the data that are the most difficult to collect involve the newer financial and investment services, which are the areas of rapid growth and internationalization. For example, U.S. data on fees and commissions earned from underwriting and trading in government and private securities generally are sparse or lacking. The same can be said of fees earned on the newer financial instruments, such as swaps, options, and futures, fees earned for managing foreign customers' accounts, and fees associated with investment advice and the arrangement of mergers and acquisitions.

Some noninterest income of financial institutions consists of gains and losses on sales of assets.[18] According to current IMF guidelines and U.S. practice, such income should not be recorded in balance of payments accounts as service income since it does not correspond to the production of a service, but rather to a change in the value of existing assets. Trading gains of professional dealers (banks and money changers) should perhaps be an exception, however. Rather than an explicit fee, a differential between buying and selling rates is maintained to cover the costs of providing the service. Thus, the dealer's income would reflect both gains from foreign exchange trading and any explicit fees and commissions.[19]

6.4.5 Separating Services from Goods

It is not always easy to distinguish services from goods, especially when they are sold or provided jointly in a package.[20] The payments for leasing super-computers or other big ticket items, for example, may represent payments for a variety of elements, including depreciation, interest, taxes, insurance, technical services, and maintenance, that may represent payments for

18. This is true of noninterest income as reported by U.S. commercial banks on the Call Report (Consolidated Report of Condition and Income) to the Federal Financial Institutions Examination Council.

19. In the U.S. National Income and Product Accounts, a similar practice is already followed with respect to trading gains of securities dealers.

20. Similar problems may arise when a group of services is bundled. See Ascher and Whichard (1987).

services performed or for the use of goods. Under balance of payments guidelines, financial leasing (i.e., a lease arrangement that provides for the recovery of all, or substantially all, of the cost of the goods, together with carrying charges, and contemplates a transfer in title to the lessee upon expiration) is regarded as a means of payment for goods, whereas operational leasing is regarded as a service that makes possible the use of goods or equipment without ownership by the user. Goods sold with service contracts or extended warranties also incorporate services whose values generally are recorded as a part of the merchandise cost. The sale of sophisticated machinery frequently includes the cost of providing engineering assistance and maintenance to assure that the equipment is operating properly and the cost of training workers to operate the machinery. Another example of goods commingled with services is expenditures by tourists for goods such as souvenirs and gifts, which presently are included indistinguishably in the travel accounts of the U.S. balance of payments together with expenditures for services such as lodging, local transportation, and entertainment. Similarly, the value of transportation as reflected in data on port service expenditures includes the value of jet fuel in aircraft and diesel fuel in oceangoing vessels, neither of which can now be separately identified.

Construction is a special case because of its mixture of manufacturing and nonmanufacturing activities and also because its final product is tangible. Construction of bridges and buildings can be regarded wholly or partly as on-site manufacturing. Yet certain activities are separable from the physical construction process and can be performed at off-site or remote locations—the conception, design, and planning of the project, as well as the contracting, subcontracting, and procurement of materials, etc.

6.4.6 Services and Manufacturing

It has frequently been observed that whether a particular activity is associated with goods or services may depend on the organization of production. For example, customized production on a contract or fee basis for individual customers may be treated as a service, whereas the same activities performed in a factory setting would be treated as goods.[21] Similarly, an activity that is considered a service if performed as a separate activity by a specialized firm (such as an accounting or legal firm) will not be reflected as such if performed in-house by a goods producer. Bhagwati (1984) has observed that through a "splintering" process services functions may be spun off to such specialized firms with the result that, from the standpoint of final demand, the composition of output may be shifted statistically toward services without any ac-

21. The U.S. Standard Industrial Classification includes "establishments primarily engaged in customizing automobiles, trucks, and vans except on a factory basis" in services (Division I), but includes "establishments primarily engaged in customizing automobiles, trucks, and vans on a factory basis" in manufacturing (Division D).

tual change having occurred in the composition of activities that produce the output.

While it is generally accepted that this splintering process will occur in the case of specialized business services, there is less agreement where the activity spun off is more directly related to the process of producing goods. In some countries, for statistical purposes, certain intermediate production steps (e.g., cutting, sewing, dyeing, electroplating) are classified as services, particularly if they are performed on a contract or subcontract basis by an outside firm. In the United States these functions are treated as integral parts of manufacturing operations, and their values are recorded as goods.

Recently, similar issues have been discussed as they relate to "processing" (essentially, transactions in which value is added to goods not owned by the entity engaged in production) and to repair. Examples of processing range from activities such as bottling and packaging that have only a minor effect on the good being processed to factory-type assembly operations or offshore oil refining done on a contract or fee basis on parts, components, or materials owned by others. A variety of alternative treatments of processing as goods-producing or services-producing has been suggested.[22] The current U.S. practice, which to some extent is dictated by available methods of data collection, is to include goods for and after processing in merchandise trade on a gross basis; but other countries exclude goods for processing from merchandise and record the processor's fee as a service.[23]

Similar questions have been addressed with respect to repair. Repair is now treated uniformly as a service in U.S. balance of payments accounts. However, there have been proposals at the international level to record some types of repair as merchandise.[24]

22. For example, in the Central Product Classification (CPC), a provisionally adopted United Nations system for classifying goods and services, all processing would be considered a service. This is perhaps the most controversial feature of the CPC and one that has not found much support in the United States. Continuing with the example of oil refining, it may be of interest for some purposes to know how much of the amount that was refined in a given period was refined under contract for others. However, for analysis of the production of commodities, it is generally more useful to have all of the production of a given commodity classified in a single category.

A second treatment was tentatively agreed upon by an expert group of national income accountants and balance of payments compilers meeting under joint UN/IMF auspices in 1987 in connection with the revision of the System of National Accounts. The consensus of this group was that a distinction should be made between processing resulting in a major change or alteration in the goods being processed and processing not resulting in such a change or alteration. The former would be considered manufacturing, and the goods processed would be included on a gross basis in merchandise trade. In the latter case, the processing would be considered, and the processor's fee recorded, as a service. In practice, the two cases would be distinguished on the basis of differences between the classification of the processor's output and that of the goods received for processing.

23. In a recent survey of recording practices in member countries, the IMF found that about 60 percent of the countries from which responses were received recorded processing transactions in merchandise trade, while 40 percent recorded them in services.

24. The CPC would treat all repair as a service, whereas the UN/IMF expert group (referred to in footnote 22) agreed that repair should be divided into two categories—major and minor—

6.4.7 No-Charge Services

Certain services may be performed without charge and their cost absorbed in charges for other services or products. For example, charge-card companies provide a means of checking the creditworthiness of cardholders at the point of retail sale. This service to retailers is performed electronically, instantly, and even internationally. The automatic teller machine provides another example of services provided without explicit charge. Should the value of this service be imputed and reflected somehow in services statistics? An imputation is made in the National Income and Product Accounts of the United States for services performed without charge by financial intermediaries, including an imputation for international transactions. (The imputed charges of U.S. financial intermediaries for services provided to foreigners in 1988 was $7.0 billion, in comparison to the estimated $3.8 billion in explicit charges shown for financial services in table 6.1.) No similar imputation is now made in balance of payments accounts, but proposals to provide for one have been made in reviews of balance of payments accounting standards.

Many types of services may be performed free of charge within corporations (Vernon 1971–72). These may include intracorporate communications and various types of technical, management, and administrative services provided by headquarters to both domestic and foreign subsidiaries. Although U.S. data cover intracorporate services transactions, including allocated expenses, it is unlikely that the reporting system can capture the full range of services rendered, if for no other reason than that modern communications technologies make it possible for consultations between central administrative offices, research and development centers, engineering offices, and foreign subsidiaries to be conducted on an ongoing and informal basis. These informal services are vital to the operations of the multinational firm, yet there is no practical means for closely monitoring them. Even if they could be precisely identified, accurately valuing them would be extremely difficult because they are not purchased through market transactions.

6.4.8 New Services

Any statistical system must provide for coverage of new activities that may emerge in the future. Usually, provision is made for services (or products) not elsewhere specified. Although such categories are provided by almost every classification system, it is often difficult to assess the composition of data reported in them. Thus, it is important to revise classifications regularly, so that new services can be placed in more descriptive categories.

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similar to the categories agreed to for processing. Repair of "investment goods"—e.g., overhaul of ocean vessels or commercial aircraft—would be included in merchandise trade, while repair of other goods, such as personal automobiles, would be treated as a service.

6.5 Prospects for Further Improvements

Evaluating prospects for achieving further improvements in statistics on trade in services involves answering several questions: What tasks remain to be accomplished? What obstacles stand in the way of accomplishing them? How likely is it that these obstacles can in fact be overcome? In other words, what is attainable?

Many of the needed data improvements appear to be attainable, given sufficient time and resources to compile the information. However, it is not possible to judge precisely what, in a practical sense, can be accomplished, inasmuch as unforeseen obstacles are likely to arise as the work progresses.

In surveying available information on U.S. international trade in services in relation to the criteria of the "ideal" data system outlined in section 6.3, it can be seen that while considerable progress has been made over several years, much work remains. Information on financial services needs to be improved, and statistics on transportation services need to be expanded beyond those provided for by balance of payments conventions. Prospects for improvements in both areas have been given new impetus by the 1988 Trade Act (see section 6.3). Also, price information needs to be developed for a wider variety of services. Statistics on establishment transactions disaggregated by type of service are needed, with a level of detail comparable to that of cross-border transactions. Data on local purchases of services by affiliates also are needed. If the data for merchandise trade, for which information on several thousand product categories is released monthly, are to be used as a standard, improvements in detail and frequency also are in order. Finally, more study of the concept of establishment transactions is needed, both to better relate the notion to established economic accounts and to provide additional insight into the proper use of existing data.

In the United States, three types of obstacles must be overcome before these or other tasks can be accomplished: budgetary, legal or administrative, and technical. Although the budgetary obstacles are probably the ones that in the current environment many would think of first, they may in fact be the least important. Funds are required to implement almost any of the remaining improvements, whether by instituting or expanding surveys or by utilizing existing information to make estimates. However, the amounts required for immediate needs are relatively small, and if a compelling need can be demonstrated they probably can be obtained.[25]

The major legal or administrative hurdle involves the Paperwork Reduction Act, under which information-collection proposals by government agencies are required to be approved by the Office of Management and Budget. The act's requirements are numerous. Their essence is that it must be demonstrated

25. As a point of reference, the annual survey of U.S. direct investment abroad and the benchmark and annual surveys of selected services transactions with unaffiliated foreigners together required augmenting BEA's budget by only about $1 million per year.

that the information has utility, can be provided by respondents without undue burden, and is not already available from existing sources. Agencies are given an information-collection budget under the act, and it is sometimes possible to expand one statistical program only by contracting another one, in order to remain within the parameters of the budget.

Despite the mandate of various trade laws, securing approval of a new survey may involve deliberations among statistical agencies, OMB, user agencies, and respondents. The process is time-consuming, but it is not impossible to obtain approval for new initiatives. The most recent experiences in securing approval for major new initiatives were with respect to the new annual survey of U.S. direct investment abroad (which was first conducted for 1983 and which also included many nonservices items) and the benchmark and annual surveys of selected services transactions with unaffiliated foreigners (first conducted for 1986). Both surveys were the subject of lengthy deliberations and both were ultimately approved. The benchmark survey of transactions with unaffiliated foreigners was initially disapproved, however, and a reduction in the scope of the survey and extensive consultations with the respondent community were necessary before it was cleared.

The major technical obstacles to data improvement concern recordkeeping systems of the businesses that must be the ultimate source of information. Some of the information needed on services trade is not now maintained by most companies in the ordinary course of business. For example, a company might not record transactions by country, or it might not maintain information by type of service, particularly for purchases.

When businesses cannot readily supply information needed by the government, three courses of action are possible: the companies can be required to develop a way to supply it (sometimes—following a one-time effort to establish mechanisms for tracking transactions—with a reduction in burden from the original estimate); exemption levels or other sampling techniques can be utilized to limit the burden; or the government can decide to do without the information. For surveys of international services transactions, the most common approach has been the use of exemption levels, which have made it possible to screen out of the reporting system very small companies or transactions that, while they may account for a significant portion of the universe in terms of *numbers*, do not have a significant impact upon its *value*.

It should be clear from the foregoing that the obstacles to improving data on services trade are not insurmountable, but neither are they trivial. A remaining task is to assess the prospects for overcoming them in some of the specific cases identified as needing further work.

For finance, the obstacles to data improvement are great, but the importance of the sector at least increases the chance that improvements will be forthcoming. The obstacles stem partly from conceptual problems peculiar to the sector. A major problem, alluded to earlier, lies in defining the boundaries between services, factor income, and capital gains. Business recordkeeping

and government reporting systems that provide or require most items on a worldwide consolidated basis increase the difficulty of segregating the international transactions of multinational financial institutions or of disaggregating them by country, as is required for the analysis of trade in services. Finally, banks already have a heavy reporting load, and government agencies are reluctant to add to it. BEA and Federal Reserve staff have been consulting with major banks and other financial institutions in an effort to determine what information on financial services could be supplied and whether the best method of developing additional information is likely to involve additional survey work or intensification of efforts to produce estimates, or both.

In transportation, the major need is for information on transactions in international transportation that are not covered by balance of payments accounting conventions. As noted earlier, these transactions include U.S. carriers' receipts for carriage of U.S. imports and foreign carriers' receipts for carriage of U.S. exports. They also include similar transactions in passenger transportation, most of which is accounted for by air transport. The domestic carriers' receipts can be estimated using existing information available from the Census Bureau. Those of foreign carriers are not available from existing sources. It has been extremely difficult in the past to obtain reliable information from surveys of these carriers, and it would be difficult to obtain additional information from them. Probably the best that could be expected is that rough estimates might be made using indirect methods in conjunction with existing information.

Disaggregation of establishment transactions by type of service should probably be regarded as a long-term goal. Additional information cannot be obtained without imposing further burden on respondents, and the government would face added processing costs. One possible solution would be for the information by type of service to be requested only on benchmark surveys, which are conducted every five years. (A similar approach has been used with respect to data on U.S. merchandise trade reported on BEA's benchmark and annual surveys of direct investment; product detail is requested on benchmark surveys, but not on the annual surveys.)

Developing information on local purchases of services by affiliates is probably not feasible, particularly if the information requires a breakdown by type of service. Companies usually find purchases data difficult to report and do not ordinarily maintain their records in a way that would permit purchases to be reported by type of service. Insight into typical patterns of purchases might best be obtained through case studies of particular companies, rather than through surveys of large numbers of firms.

The frequency of reporting of statistics on services trade will probably never match that available for merchandise. Because services (unlike goods shipments) are not accompanied by customs documentation as transactions occur, statistics must be secured in other ways, mainly from periodic surveys of companies engaged in international transactions. In some cases, other types

of information, such as might be provided by trade associations, is used instead.[26] Data on merchandise trade are compiled on a monthly basis through the use of customs documentation, but it is not realistic to expect surveys on services to be conducted with the same frequency. Most nonsurvey information is available no more frequently than annually. Thus, the best that can be expected is probably annual or, in some cases, quarterly data.

6.6 Conclusions

The efforts to improve U.S. statistics on trade in services during most of the last decade have resulted in a lengthy list of improvements: new surveys have been introduced and existing ones improved; transactions in some services have begun to be estimated using indirect methods; an international price program has been instituted; information on establishment transactions has been developed; and the legal basis for data collection has been improved. In the absence of these improvements, current estimates of both U.S. sales and purchases of services would be significant understatements.

In addition to providing a more accurate statistical profile of services trade, the data-improvement efforts have helped to focus attention on the manner in which business in services is conducted internationally. As a consequence, the concept of international trade in services is becoming better understood, and more detailed and pertinent information is becoming available. Although progress is relatively slow and statistics on trade in services are in their infancy, the conceptual framework is in place and should facilitate further progress.

The data-improvement efforts in the United States are being followed with interest by the rest of the world. Progress in this country will help spur other countries to develop better data on their own services trade.

Appendix A
Summary of Improvements

As summarized below, the improvements made to statistics on international services in recent years include not only the expansion in coverage evident in table 6.1, but also a number of other measures that have raised the quality of the data or provided types of information not reflected in the table.

26. In other countries, still other methods may be used, including compilations of foreign exchange requests by banks. The bank method is essentially unavailable in the United States, because of the absence of foreign exchange restrictions and the dollar's role as a key currency. A discussion of the various methods of data collection used worldwide can be found in International Monetary Fund, Working Party on the Statistical Discrepancy in World Current Account Balances (1987).

Mandatory authority for data collection. Mandatory authority for collecting data on trade in services was provided by the Trade and Tariff Act of 1984. The authority was provided by amending the International Investment Survey Act of 1976, which had provided authority to collect data on international investment, to include trade in services; the act was redesignated as the International Investment and Trade in Services Survey Act. A number of services surveys that had been voluntary were made mandatory under the amended act. As a result, the response rate to these surveys has increased, and the quality of the resulting statistics has improved. Because many firms have a policy of responding only to those requests for information for which a response is required by law, authority to require reporting has been essential to the success of new surveys.

Surveys of selected transactions with unaffiliated foreigners. One of the most pressing needs for improved statistics on services trade was in the area of miscellaneous cross-border transactions with unaffiliated foreigners. While transactions with affiliated foreigners had been collected for some time in surveys of direct investment, and specialized surveys of transactions with unaffiliated foreigners were conducted for a few services of longstanding importance, there was a variety of services (mainly business and professional services) for which no vehicle for collecting information existed. A benchmark survey of U.S. services transactions with unaffiliated foreigners for 1986 was conducted to close as many of the gaps in information as was practical to attempt in a single survey. In general, the services covered by the survey were those sold or purchased by businesses; thus, the survey did not cover such items as expenditures by individual students or medical patients. Also, the survey did not cover transportation, banking or other financial services.

The survey covered U.S. sales and purchases of eighteen types of services, most of which had not been reported previously.[27] An annual survey has been instituted to keep the results up to date between benchmark surveys, which are taken at five-year intervals. It covers the same eighteen services, but lacks certain detail that was collected on the benchmark survey.[28]

27. The services are: advertising; computer and data-processing services; data-base and other information services; telecommunications; research, development, and testing services; management, consulting, and public relations services; legal services; industrial engineering; industrial maintenance, repair, installation, and training; agricultural services; management of health-care facilities; accounting, auditing, and bookkeeping services; educational and training services; mailing, reproduction, and commercial art; personnel supply services; sports and performing arts; primary insurance (purchases only); and construction, engineering, architectural, and mining services (purchases only). Sales of the services marked as "purchases only" are collected in specialized surveys sent to firms that sell such services. The results of the benchmark survey are summarized in Whichard (1988a).

28. Specifically, the benchmark survey collected information on gross income of advertising agencies, as well as the gross billings measure that represents U. S. sales of advertising services, and three types of services in which policymakers and others have shown particular interest (telecommunications, computer and data-processing services, and data-base and other information

Development of information on establishment transactions. Initial efforts to identify data needs in the area of services trade were directed at cross-border transactions. However, it soon became obvious that for many services a more common channel of delivery was through establishment transactions. Unlike most countries, whose statistical systems were set up to provide information only on cross-border transactions, the United States also possessed, in the form of surveys that obtained financial and operating statistics for direct investment enterprises, a vehicle for collecting information on establishment transactions. Benchmark surveys, usually conducted once very five years, had existed for some time for both inward and outward direct investment. In 1977, an annual survey of U.S. affiliates of foreign companies was instituted. A similar survey was instituted in 1983 for U.S. parent companies and their foreign affiliates.[29]

Although financial and operating information was first provided on an annual basis for inward investment, surveys of outward investment were the first to focus particularly on services. They did so, beginning with the 1982 benchmark survey, by requesting that sales or gross operating revenues be disaggregated between sales of goods and sales of services. The latter were identified based on their association with specified industry groups (see note to table 6.2). For U.S. parents, sales of services were further disaggregated according to whether they were to a U.S. or a foreign person and whether the person was or was not a foreign affiliate of the U.S. parent. For majority-owned foreign affiliates, sales of services were disaggregated according to whether they were to persons in the country of the affiliate, to U.S. persons, or to persons in other countries. In each case, sales were further disaggregated between sales to affiliated persons (i.e., to the U.S. parent or its other foreign affiliates) and sales to unaffiliated persons.

Similar information began to be collected for U.S. affiliates of foreign firms beginning with the 1987 benchmark survey of foreign direct investment in the United States. However, as a result of the experience gained with the survey of U.S. direct investment abroad, an additional refinement was introduced to obtain a more precise measurement of services sold by finance and insurance companies. For such companies, income from investments is ordinarily included in operating revenues along with revenues from the performance of services. On the survey of U.S. direct investment abroad, this income had been included in sales of services because it had to be allocated to either goods or services and was related to activities in a service industry. In the 1987 sur-

services) were further subdivided on the benchmark survey. The annual survey only collects the billings measure for advertising and does not subdivide the other three services.

29. Financial and operating data had been collected for outward investment in earlier years, but there had been no annual survey for the years immediately preceding 1982. Balance of payments-type data on both inward and outward direct investment (i.e., on transactions between parents and affiliates) have been collected quarterly for many years.

vey of foreign direct investment in the United States, a separate category was provided for investment income included in gross operating revenues, in order to make the sales-of-services category more closely correspond to the performance of services. This change is being carried over to the surveys of U.S. direct investment abroad beginning with the 1989 benchmark survey.

Survey of foreign contract operations. Beginning in 1983, BEA's annual survey of foreign contract operations (which then mainly covered, and which has since been restricted to, construction, architectural, engineering, and mining services) was expanded to permit recording of transactions on a gross basis. In addition to data previously collected on net U.S. receipts, information is requested on gross income or operating revenues (the measure of U.S. sales comparable to that collected for other types of services), merchandise exports included in gross income, and foreign outlays or expenses.[30] In 1987, the survey was further expanded to include a question on new contracts awarded during the year.

Tourism and travel in-flight survey. In the fourth quarter of 1982, the U.S. Travel and Tourism Administration of the U.S. Department of Commerce instituted an in-flight survey of non-U.S. residents departing from the United States. Collection of information from U.S. residents began in January 1983. These surveys provide estimates of total expenditures, disaggregated by type of purchase, such as lodging, transportation, meals, entertainment, and gifts. Most of the resulting information is sold on a subscription basis, mainly to businesses and to tourism-promotion agencies of state, local, and foreign governments. The data have recently begun to be used in estimating the travel and passenger-fares accounts of the U.S. balance of payments. They replace data from a more limited BEA survey that was discontinued.

Greater use of gross recording methods. Historically, estimates of a number of services have been provided only on a net basis, and thus total sales and purchases have been obscured. Recently, gross estimates have begun to be made instead. One example of this, involving construction and related services, has already been noted. The other items involve services transactions between affiliated parties, including both royalties and license fees and other services. For a given type of direct investment (U.S. abroad or foreign in the United States), purchases (or U.S. payments) of services were netted against sales (receipts) before sample data were expanded to universe estimates, with

30. For construction, a large share of value added is typically accounted for by local factors of production (e.g., labor and materials). Information on payments to these factors is needed for balance of payments accounting purposes and for purposes of analyzing impacts on host-country economies. Although local outlays or expenses also occur in connection with other services involving travel by the producer to another country, they are less likely to be significant, and it is only in the survey of construction and related services that an attempt has been made to collect statistical information on them.

the result that only net sales or purchases were available. Because the modern multinational enterprise often contains specialized affiliates to perform specific functions for the entire global enterprise, services often flow not only from the parent to the affiliate, but also in the other direction. Consequently, the net figures did not provide a good guide to the two-way flow of trade.

Census of Service Industries. The 1982 Census of Service Industries was the first such census to include questions on sales to nonresidents. The questions appeared on forms for four industries: computer and data-processing services; management, consulting, and public relations services; equipment renting and leasing services; and engineering, architectural, and surveying services. In the 1987 census, the group of industries covered by these questions was expanded to include four additional industries: advertising, accounting, legal services, and research and development.

BLS International Price Program. The difficulties of developing price information for services are well known and stem in large measure from the difficulties in measuring services output.[31] Until recently, such price information as existed for traded services took the form of broad deflators used for national income accounting purposes and not intended, or able, to provide information on individual services.

In 1984, a special task force was formed in the Office of Prices and Living Conditions of the Bureau of Labor Statistics to explore the possibility of developing indexes for services applicable to producer prices and international trade. The initial attempts to construct indexes have mainly involved transportation, because of its importance in trade, the availability of data with which to construct sample frames, and the relative ease with which the service can be defined. (An index has also been developed for electricity.) Several quar-

31. Hill (1977, p. 315) summarizes the situation thusly:

> There is little understanding about the nature of the physical units in which most services should be quantified, and consequently their prices are also vague and ill defined. Indeed, a price, perhaps the most fundamental concept in economics, is meaningless unless the physical unit to which it refers can be identified and specified. It is a sad reflection on the state of economics that there is so little perception of the physical characteristics of most services, that the outputs of major industries such as health and education are usually measured by their inputs, thereby making the measures useless for most analytic purposes.

Kenessey (1989, p. 3), however, has suggested that the difficulties in measuring services output may have been exaggerated:

> The very size and diversity of the service sector make output measurement a complex task, but by no means an impossible one. Both the goods and services sectors contain unique activities that defy easy quantification. But the bulk of economic activity in most divisions of the SIC is comprised of mass produced or well standardized goods or services. The bulk of legal work after all, is not in leveraged buyouts, but in real estate closings, divorces, wills, and criminal litigations, which differ from case to case, but can be defined as items of output fairly closely. The same is true for large segments of medical services, banking, and several other services industries.

terly indexes are currently being published.[32] Additional transportation indexes, for liner freight, air freight, and port fees, are under development. Another service sector, communications, is under consideration as an area for future work.

Revision of classification systems. Rapid changes in technology in areas such as computer and communication services have made it difficult for classification systems to keep pace with the range of services traded. However, several developments relating to classification of services have recently occurred at the national and international levels. They include adding codes for services on survey forms and expanding or modifying classification systems.

One of the earliest developments occurred when, in revising industry codes for direct investment surveys in preparation for its 1982 benchmark survey of U.S. direct investment abroad, BEA added about a dozen new codes for services. When in 1987 the U.S. Standard Industrial Classification (SIC) was revised, particular attention was given to services. The new SIC provides specific codes for many types of services, such as on-line information retrieval services and computer-integrated systems design, that had hardly been thought of in 1972, when the previous version was released.[33] In preparation for the 1987 benchmark survey of foreign direct investment in the United States, BEA revised its industry coding system for international surveys to reflect the new SIC categories and again expanded the number of industry codes for services.[34] In 1987, BEA revised its survey on transactions in nonfinancial intangible assets to include detail on the type of asset involved; seven categories were provided, compared to the two that had existed previously.[35]

32. Four quarterly series of price indexes are published for international air-passenger fares. Two are for receipts of *U.S. carriers* from: foreign residents on international flights, computed on a balance of payments basis; and all passengers on international flights, regardless of nationality. These series have been published since the fourth quarter of 1986. Two additional series are for payments to *foreign carriers* from: U.S. residents on international flights, computed on a balance of payments basis; and all passengers on international flights, regardless of residency. These series have been published since the second quarter of 1988.

Two quarterly indexes are published for crude-oil tanker transportation: an import crude-oil tanker freight index, measuring changes in rates actually paid for foreign operators, computed on a balance of payments basis; and an inbound crude-oil tanker freight index, which tracks changes in tanker freight rates paid for all inbound crude-oil shipments regardless of nationality of vessel operator. These series have been published since the second quarter of 1987.

Regional subindexes are published for all of these series.

33. In the absence of specific codes, the newer activities were relegated to residual catchall categories or assigned on an ad hoc basis to whatever categories seemed most appropriate.

34. It is not always possible for BEA to translate increases in the number of codes into the provision of more detailed published data, both because of space constraints and, more fundamentally, because of the legal requirement to protect the confidentiality of company-specific data.

35. No comprehensive classification scheme could be found to provide guidance on the categories. Categories were provided for rights related to: industrial processes and products; books, records, audio tapes, etc.; trademarks; performances and events prerecorded on motion picture film and TV tape; and broadcast and recording of live performances and events. A sixth category covered business-format franchise fees. The remaining category was a residual under which transactions in any other intangible assets or rights could be reported.

On the international level, no product-based classification system has existed until very recently, when the Central Product Classification (CPC), prepared under United Nations auspices, was adopted on a provisional basis. Although certain aspects of the CPC are controversial (as reflected in its provisional status), it does represent an initial attempt to provide international standards for a product-based classification of services. The International Monetary Fund has been considering expanding its list of standard components of balance of payments accounts to include more services items. Discussions to date have used the CPC as a point of departure, although it will probably not be possible for balance of payments accounts to achieve complete consistency with the CPC.[36]

Medical services. In June 1987, estimates of U.S. medical services receipts were introduced into the U.S. balance of payments accounts. The estimates are for services performed at nonprofit and state and local government hospitals in the United States for foreigners who travel to the United States for treatment. The estimates did not require a new survey, but were made based on consultations with administrators of hospitals likely to provide services to foreigners (major medical centers, university hospitals, and hospitals in areas frequented by foreign tourists). Estimates of U.S. payments for medical services rendered abroad are not available, but these payments probably are much smaller than the receipts.

Educational services. In June 1989, estimates of U.S. receipts from foreign students in the United States and expenditures of U.S. students abroad were introduced into the U.S. balance of payments accounts. The estimates are made by BEA using information from the Institute for International Education and other sources. The first year covered by the estimates is 1981.

Primary insurance. Beginning with the survey for 1987, BEA revised a survey that had previously covered only international transactions in reinsurance to cover sales of primary insurance as well. (U.S. purchases of primary insurance appear on the benchmark and annual surveys of selected services transactions with unaffiliated foreigners.)

36. There are several reasons why complete consistency with the CPC is unlikely to be achieved. First, in comparison with worldwide production and consumption of services, international trade is skewed toward certain services that are more tradable than others. Thus, an hierarchy (e.g., based on numbers of digits) suitable for classification of services generally would, if applied to international trade, give too much prominence to some services, yet slight others. Second, the CPC categorizes items according to type of *product* (including services), but certain types of balance of payments transactions—government and travel, in particular—are categorized by type of *consumer.* Finally, agreement by balance of payments compilers on some of the more controversial aspects of the CPC, such as its treatment of manufacturing-type "processing" activities as a service (see discussion in section 6.4) may not be possible.

Domestic services. The availability of information on domestic services activity helps to place international trade data in context. A number of developments in this area have occurred in recent years. The Census Bureau has expanded its quinquennial economic censuses and its annual sample surveys to cover a greater number of services. The expansion responds to the growing interest in services and in some cases substitutes for statistical programs of other government agencies that were cut back or discontinued as a result of deregulation (Aanestad 1988). Also, the Federal Reserve has recently developed experimental output indexes for services, similar to its indexes of industrial production (Kenessey 1989). Leading, coincident, and composite indicators for the service sector have been developed privately, under the auspices of the Center for International Business Cycle Research at Columbia University (Moore and Layton 1988). These and other efforts to improve statistics on domestic services activity will help provide a more complete statistical depiction of that activity and be useful in drawing comparisons with statistics on international trade in services.

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Comment Samuel Pizer

Much of the discussion in this paper is concerned with the issues and requirements of GATT negotiations on services. This is separable from the issue of achieving better statistics for international transactions in services, as defined for use in the balance of payments accounts, and the two issues should not become confused. In particular, international *trade* in services has a specific meaning, and does not include sales by affiliates in other countries. The latter may be relevant for market analyses, however.

As noted in the paper, there has been a lot of progress recently in improving the coverage of services in the U.S. balance of payments accounts. Few other countries have gone much beyond the more or less standard items, and the accuracy of the available data certainly needs improvement. International agencies are heading toward a standard expanded list of services to be used in the balance of payments context. It will be less detailed, probably, than a list suitable for the System of National Accounts (SNA), primarily because the latter involve many services that are not significant in international trade. These lists tend to settle definition questions de facto.

Quite distinct from the balance of payments data are data on the transactions of affiliates established in foreign countries. There are some questions about the definition of "affiliate," but when the IMF definitions are followed

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the distinction between an international transaction and a transaction by an affiliate is clear in most cases. Where there are questions about residence they usually involve such activities as construction, transportation, offshore drilling, which are not often large in the scheme of things. In any case, for the balance of payments compiler, the net result for the international accounts is what counts most, rather than the distribution among particular items in the accounts.

Measurement of the sales or purchases of services by foreign affiliates is not to be confused with international transactions of the home country, as it sometimes is in critiques of the accuracy of balance of payments data. Only the United States has even made a beginning in collecting data on transactions of affiliates in foreign markets, and there is scant evidence of interest in other countries in monitoring the activities of foreign affiliates of their companies. However, with respect to inward investment, most countries are interested in the activities of foreign firms in their home market; but up to now this has referred mainly to the manufacturing sector and petroleum, not to most services. In this situation, negotiations will probably have to get along without these data—at least on a global scale.

Because many services cannot readily be traded between residents and nonresidents, they depend on the establishment of a permanent affiliate to reach the local market. For these types of services, the main issue seems to be freedom to form such establishments and to have them treated in the same way as other national enterprises. This is no different from the issues raised by international direct investment in general, and presumably the same set of principles is involved. On the other hand, these services have many quite distinct operational differences, and presumably these will require some specialized rule-making. Coming back to the theme of this conference, these considerations suggest that the development of global statistics is not a prerequisite for agreement on principles, and that, on the other hand, a great deal of specialized information may be necessary for negotiations affecting particular kinds of services. It may be that pushing for development of such data in the context of the balance of payments accounts is not the best procedure.

Another issue of interest in international services has been the apparent attempts by some countries to interfere with the free interchange of information, especially in the newer technological forms. At one level, this is an issue of principle: most would agree that such interference is wrong. At the level of measurement it might be useful to have more information on the value and volume of such information flows, as well as much more precise definitions of what such information consists of. That is, we need to know what is to be measured that is not already captured elsewhere in the international accounts (for example, intercompany payments for such services, or rentals paid for entertainment material or news transmissions are already entered into the accounts of most countries).

The paper identifies a number of well-known problem areas and borderline

cases, and suggests some steps to be taken to achieve improvements. Fortunately, most of the special cases mentioned do not involve significant payments or receipts for most countries, and in some cases the issue will probably be dealt with as conventions are adopted by international statistical agencies. As to the suggested solutions of some of these data shortcomings, they may demand too much in the way of compliance by U.S. companies or of expenditures of scarce talent and money by the U.S. government. Even so, possibilities for improvement are far more realistic in the United States than in other countries, where resistance to questionnaires is even greater.

Under the prevailing conditions, it is remarkable that the U.S. data in this field have advanced to their present situation—which seems to be rather good coverage for purposes of the balance of payments accounts.