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IMPROVEMENTS IN U.S. INTERNATIONAL SERVICE STATISTICS UNDER THE "BOSKIN INITIATIVE"

AUTHORS

J. STEVEN LANDEFELD
CHRISTOPHER L. BACH

Bureau of Economic Analysis
U.S. Department of Commerce

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Introduction

Background.- In 1990, the President's Economic Policy Working Group on Improving the Economic Statistics, which was chaired by Michael Boskin, Chairman of the President's Council of Economic Advisers, asked a subgroup on Services Statistics to examine economic statistics in this area and to work with the statistical agencies to develop a comprehensive plan for improving service sector statistics. In examining service statistics, the subgroup noted:

> One of the most important problems with the U.S. statistical system is that it has been unable to keep pace with a changing economy. Basic data collection for domestic services is still oriented toward manufacturing, agriculture, and mining, with far less data collected for service-producing than goods-producing industries. Similarly, and notwithstanding numerous recent improvements, data collection for international trade in services has not kept pace with the rapid rate of growth and innovation in the services traded.

After surveying the gaps in services coverage, the major statistical agencies -- the Bureau of Economic Analysis (BEA), the Bureau of the Census (Census), and the Bureau of Labor Statistics (BLS) -- and the subgroup developed a long-term plan for improving U.S. service statistics. The work plan included expansion of basic data collection, improved price indexes, methodological improvements in industry output and productivity estimates, and increased coordination among the statistical agencies and with businesses and researchers. The plan included improvements in both domestic and international economic activity.

Overview of improvements in international services.- In the area of international services, which is BEA's area of responsibility, a number of significant steps have been taken to improve the estimates of U.S. international services transactions. In the years just prior to "Boskin Initiative", BEA introduced new benchmark and annual surveys that covered 26 different types of international services, many of which had not been reported previously. Significant improvements were also made to the travel estimates, and new estimates of medical and education services were introduced.

As part of the "Boskin Initiative," BEA introduced many additional improvements in this June's balance of payments revisions to further improve the quality of service statistics. Other changes introduced were consistent with recommendations of recent International Monetary Fund and National Academy of Sciences working groups (Current service estimates and categories are shown in Table 1).

As a result of these improvements, service exports for 1991 were revised up $19.0 billion, from $144.7 billion to $163.7 billion. The revision was mainly due to improved and updated source data for travel, passenger fares, other private services, and the selected services covered by a benchmark survey. Services imports were revised up $9.5 billion, from $108.8 billion to $118.3 billion. The revision reflected changes in travel, passenger fares, other private services, and the selected services covered by a benchmark survey. The surplus on services was revised up $9.4 billion, from $35.9 billion to $45.3 billion.

Future work.- Efforts to make further improvements continue. BEA has been working with other government agencies, trade associations, and private organizations to extend and improve the coverage of U.S. international services transactions. At the moment, the largest remaining gap in the coverage of services appears to be in the area of financial services. The "Boskin Initiative" included funds to conduct a survey of financial services, but for the last three years Congress has not approved the requisite funds.

Once such gaps in BEA's "core" balance of payments data are filled, BEA hopes to expand its coverage of sales of goods and services through U.S.-owned companies abroad so as to more completely address the recommendation by the National Academy of Sciences for an alternative framework based on ownership rather than residence.[1] It should be noted, however, that in the last several years BEA has already significantly expanded the supplemental data it publishes on an ownership basis. In addition to the cross-border transactions in services that are included in the U.S. balance of payments, for the last two years BEA has published extensive data on services delivered to foreign

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[1] For a discussion of this alternative see National Research Council, Panel on Foreign Trade Statistics, Behind the Numbers: U.S. Trade in the World Economy (Washington, DC: National Academy Press, 1992); DeAnn Julius, Global Companies and Public Policy: The Growing Challenge of Foreign Direct Investment (New York: Council on Foreign Relations Press, 1990); and Evelyn Parrish Lederer, Walther Lederer, and Robert L. Sammons, International Services Transactions of the United States: Proposals for Improvement in Data Collection, Report prepared for the U.S. Department of State and Commerce and the Office of the U.S. Trade Representative, 1982.

markets through foreign affiliates of U.S. companies and on services purchased by U.S. persons from U.S. affiliates of foreign companies. These foreign sales are important, and for each dollar of service exports by U.S. companies located in the United States, there is roughly an additional one dollar of services sold abroad by foreign affiliates of U.S. companies.

Improvements to Date

The improvements introduced since the Boskin initiative was begun fall into include: (1). Conceptual improvements designed to better highlight important transactions and to harmonize BEA's international accounts with national and international concepts; (2). Improvements designed to reduce respondent burden and improve data quality through use of counterparty data; and (3). Improvements designed to fill gaps in coverage and improve the comprehensiveness of the estimates. These improvements were introduced this June in BEA's annual revision of the Balance of Payments Accounts along with dozens of other major improvements initiated under the Boskin initiative [2].

Conceptual Improvements and Harmonization Concepts

Many of the recent changes in the U.S. international transactions accounts are designed to move away from old balance of payment accounting concepts of net-flows to economic accounting concepts of gross flows, so as to better highlight the economic resource flows and economic activity

[2] Much of the description that follows is taken from the June issue of the Survey of Current Business, for more information on these and the other revisions see "Revised Estimates, 1976-91," pp. 67-113.

transactions rather than the net flows and balances. These changes also serve to increase the consistency between the U.S. national and international accounts and between the U.S. international accounts and the international accounts of other nations. The efforts to modernize and extend the U.S. international accounts are directly responsive to efforts by the United Nations and the IMF to harmonize statistical standards around the world.

Gross recording. -- Until now, the transactions of direct investors in royalties and fees and in other private services with affiliated foreigners in BEA's international transactions accounts have been presented on a net basis -- that is, receipts and payments have been netted against each other and entered as exports for U.S. direct investors and as imports for foreign direct investors in the United States. Effective with the June revisions, these transactions are now presented on a gross basis -- that is, all receipts for royalties and fees and for other private services are now recorded as exports, regardless of whether they are receipts of U.S. or of foreign direct investors, and all payments are now recorded as imports, also regardless of whether they are payments of U.S. or of foreign direct investors. Although gross exports and imports are changed significantly, the current-account balance is unaffected by this change.

The restatement of various categories of services from a net to a gross basis better highlights the international flow of resources. Previously, there might have been large gross flows of service transactions between countries that netted to zero, or near zero, when there were actually a large volume of transactions occurring.[3] This approach for gross recording of these service transactions also increases the consistency of the U.S. current account with the forthcoming fifth edition of the IMF Balance of Payments Manual, the OECD's revised Benchmark Definition for Direct Investment, and the forthcoming System of National Accounts (SNA) methodology and the current treatment in the U.S. national income and product accounts.

Nonresident taxes. -- Until now, estimates for several components of the current account have been presented after deduction of nonresident taxes withheld by either the U.S. Government or foreign governments. These components include royalties and fees, other private service payments, direct investment income (both dividends and interest), and portfolio dividend payments. Effective with the June revision, these components are now presented before deduction of nonresident taxes withheld. Offsetting entries are made in the unilateral transfers account. The change is made beginning with estimates for 1982 and is made to both the receipts and payments sides of the accounts. Source data for most of the estimates of taxes withheld are obtained from the Internal Revenue Service. An exception is taxes withheld on direct investment dividends which are reported to BEA on its direct investment

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[3] For transactions in direct investment income with affiliated foreigners, dividends have previously been recorded gross in table 1 and remain so. An exception to the gross recording principle is made for interest income, which will continue to be recorded net as at present. Thus, interest receipts and payments on U.S. direct investment abroad will continue to be netted against one another and the net amount recorded as exports, and interest receipts and payments on foreign direct investment in the United States will continue to be netted against one another and the net amount recorded as imports. The rationale is that net interest income, for some purposes, must be related to the direct investment position estimates to measure the cost of debt capital; it would be impossible to make such a comparison if the interest income estimates were presented on a gross basis.

surveys. For the most recent years, BEA prepares estimates of taxes withheld.

This new treatment of taxes not only is consistent with international and national accounts standards, but it also allows analysts to better track gross transactions and, through the unilateral transfers item, international tax receipts and expenditures between the United States and the rest of the world.

Use of Couterparty Data

Major statistical changes introduced in this year's revisions include the expanded use of data provided by other countries, such as source data on travel from Mexico and Canada. With the rapid expansion of international economic activity, it has become increasingly clear that such data exchanges between countries can significantly improve statistical quality and reduce respondent burden. Some of these source data improvements are in response to recommendations by an IMF and National Academy of Sciences working group recommendations on ways to improve U.S. international statistics.

Travel--Mexico. -- Bilateral travel payments and receipts between the United States and Mexico have until now been estimated independently by the two countries. However, some of BEA's estimates are based on outdated surveys, and other key source data are believed to be erroneous. Therefore, in consultation with balance of payments statisticians at the Bank of Mexico and after a careful evaluation of the strengths and weaknesses of the Mexican estimates, BEA has accepted the Mexican estimates and will substitute them into the U.S. accounts.

BEA has for many years incorporated key subcomponents of the Mexican estimates, particularly for U.S. payments associated with travel to the Mexican interior. However, a major change that comes with full-scale substitution is a significant reduction in the estimated number of U.S. travelers to the Mexican border area and, thus, in the estimates of U.S. expenditures there. The previously used U.S. source data, are believed to have overstated the number of U.S. travelers by a significant margin.

On the U.S. receipts side of the accounts, BEA had previously used the Mexican estimates for border-area transactions. The adoption of Mexican estimates of expenditures in the U.S. interior shows significantly more expenditures than did the U.S. estimates, which were based on outdated surveys.

The result of these changes is to lower U.S. payments $1.6 billion and to raise U.S. receipts $1.2 billion for 1991.

Travel--Canada. -- Canada has substantially revised its estimates of Canadian expenditures in the United States for 1990 and 1991 to account for the surge in Canadian expenditures here, particularly in the area just south of the U.S.-Canadian border. Economic conditions conducive to making consumer purchases in the United States, as well as the introduction of a new goods and services tax at the beginning of 1991 encouraged these expenditures, which previously were grossly underestimated. These expenditures include purchases of used automobiles amounting to $193 million in 1990 and $310 million in 1991, which are not recorded in the merchandise trade statistics of either country. The revisions increase U.S. receipts (Canadian expenditures) $1.4 billion for 1990 and $1.9 billion for 1991.

Comprehensiveness: Services Benchmark and Other Gaps in Travel and Transportation Coverage

One recommendation that regularly is included in working group recommendations is the importance of comprehensive estimates, either through new surveys and data sources to fill emerging gaps in coverage or through benchmarks to identify and fill gaps in coverage. Regular benchmarks are particularly important to assuring comprehensiveness since their coverage is significantly broader in scope than the quarterly and annual survey that are used to extrapolate between benchmarks. Benchmark surveys are an occasion to expand sample frames, to lower, or raise, exemption limits, and to collect data on existing and new series in order to uncover gaps in coverage and provide a firm basis for the nonbenchmark estimates. It is for these reasons that various groups including the IMF and NAS working groups emphasized the importance of benchmark surveys. In the past year, BEA completed an expanded benchmark survey of selected international services.

Other private services--benchmark survey. -- Estimates of other private services have been revised to incorporate preliminary results from the benchmark survey of selected transactions with unaffiliated foreigners for

1991. The previous benchmark survey covered 1986. (The added detail available in benchmark years is shown in Table 2.) As a result of the new benchmark survey, other private services receipts increase $2.1 billion, and payments $1.1 billion, for 1991.

The coverage of the benchmark survey was expanded by introducing a new exemption criterion, by utilizing new sources of information on potential respondents, and by adding new types of services.

On the benchmark survey for 1991, the basis for qualifying for exemption was changed from a per-transaction basis to an overall basis; respondents were required to report all sales or purchases with unaffiliated foreigners for any covered service for which total transactions exceeded $500,000. On the 1986 benchmark survey and on the annual surveys for 1987-90, respondents were only required to report individual transactions in excess of $250,000. The new basis for exemption resulted in more complete coverage of services for which individual transactions tended to be small but for which the total value of transactions may have been sizable. In particular, coverage of legal services and of database and other information services was significantly enhanced.

One new services group covered by the 1991 benchmark survey was "miscellaneous disbursements," which include outlays to fund news-gathering costs of broadcasters and the print media; production costs of motion picture companies and companies engaged in the production of broadcast program material other than news; and costs of maintaining tourism, business promotion, sales, and representative offices, including costs for participating in foreign trade shows. Another newly covered service was payments for the use or lease of rights to natural resources, such as oil, or of mining production royalties and lease bonus payments.

For primary insurance transactions, reported data on claims recovered by U.S. persons on insurance purchased from foreign insurance companies were collected for the first time on the 1991 benchmark survey. Previously, BEA had estimated these claims.

Travel and passenger fares--cruise. -- In the 1980's as cruise activity increased and BEA's data sources and estimating methods became increasingly outdated, it became clear that there was a gap in the international accounts' coverage of this component of travel and transportation. As a result, this June new estimates of U.S. international cruise transactions were introduced. The estimates are derived from information on passenger fares, discounts, commissions, number of passengers who travel on foreign cruise lines, and foreign ship operators. The estimates are divided into three components: Fares, on-board spending, and passengers' expenditures at ports of call, and each is estimated separately for both receipts and payments. Fares are entered in the passenger fare accounts, and on-board spending and passengers' expenditures at ports of call in the travel accounts. The estimates are limited to activity in the North American market (those along the Atlantic and Pacific coasts of North America), plus the Caribbean and Hawaii. Residency of the operator is determined by the location of a company's headquarters for cruise operations.

Payments to foreigners for fares were $280 million in 1991; for on-board spending, $67 million; and for spending in foreign ports, $299 million. Receipts from foreigners for fares were $156 million in 1991; for on-board spending, $31 billion; and for expenditures in U.S. ports, $23 million. The net impact on the passenger fare and travel accounts is to increase net payments $436 million for 1991.

Passenger fares--interline settlements. -- To fill a second gap in travel and transportation coverage, BEA's data on passenger fare receipts and payments have been revised to include new estimates of interline settlements between U.S. and foreign airlines beginning with 1990. Receipts from these transactions occur when passengers purchase tickets on foreign airlines but must transfer to U.S. airlines to reach their final destinations; in such cases, a portion of the total fare paid initially to foreign airlines is subsequently assigned to U.S. airlines in the settlement process. Payments occur when passengers purchase tickets on U.S. airlines but must transfer to foreign airlines, in which case a portion of total fares paid initially to U.S. airlines is assigned to foreign airlines in the settlement process.

Source data are obtained from BEA Form BE-37, "U.S. Airline Operators' Foreign Revenues and Expenses." On this form, U.S. airlines are asked to separately identify interline settlements and to report them quarterly. Allocations of receipts and payments by major country or area are developed by BEA from estimates of international travel receipts and payments. As a result of the new estimates, receipts increase $1.6 billion, and payments $1.8 billion, for 1991.

Other transportation--rail transport. -- The third gap that was closed in travel and transportation was that other transportation receipts were revised to include new estimates of U.S. rail carriers' revenues for transporting foreign-owned goods shipped in transit in the United States. These shipments consist mainly of containerized goods that arrive by ship at U.S. ports and that are then hauled by rail to another U.S. port for transport to final destinations in other countries. Such shipments are often referred to as "landbridge" shipments.

Source data are obtained from the Interstate Commerce Commission (ICC) and the Department of Transportation (DOT). Sample data on freight revenues and shipping weights are obtained from railroad waybills and are expanded by ICC and DOT to cover all such shipments. The data are adjusted by BEA to exclude transactions of U.S. ship operators with U.S. rail carriers for the shipment of foreign-owned goods. Allocations of revenues by major country or area are developed by BEA from Census Bureau data on in-transit exports and imports.

As a result of the inclusion of U.S. carriers' receipts for transporting foreign-owned goods, "other transportation" receipts increase $475 million in 1991.

Future Work:

Although, as noted above, much work has been done in improving U.S. estimates of internationally traded services, there is one major piece of unfinished business, financial services. The Omnibus Trade Act of 1988, identified a number of major gaps in the coverage of international trade in services. Most of these gaps have now been filled except those in the rapidly growing area of financial services. The Boskin initiative tried to address this by proposing a major new survey of financial services. However, as of yet the Administration has been unable to obtain funding for this survey.

Despite the inability to obtain funding for a major new survey, BEA has been able to make some marginal progress in improving the international services by methodological improvements and modifications of existing surveys. BEA has made imputations based on average fees and related transactions volumes to arrive at rough estimates of a limited number of financial services and to make a partial estimate of banks' non-interest income from foreign residents. In addition, next year, BEA will include a series of questions on its existing survey of selected services of non-financial firms' purchases of financial services.

In addition to these partial improvements in the financial services area, BEA hopes to expand its use of couterparty data from other countries, in order to improve a number of service categories. BEA will also -- through its use of benchmark surveys, bilateral reconciliations, and use of other data sources -- be examining the existing data on international transactions in services for gaps in coverage arising from newly emerging services and transactors.

Expansion of the Balance of Payments Framework

Although exports, imports, and factor income from abroad recorded in the balance of payments accounts remain the variables of primary interest for macroeconomic analysis of jobs and output in a country, sales through foreign affiliates have an increasing importance to the domestic economy beyond the effect of these foreign affiliates profits on net factor income from abroad. As a result of these backward and forward linkages, as noted above, several groups, notably a working group of the National Academy of Sciences, have recommended that BEA develop a supplement to the existing resident balance of payments framework, which would be based on net sales of U.S.-owned companies to foreigners and net sales of foreign-owned companies to U.S. residents.

Although developing such a framework is a major undertaking, BEA thinks the proposal has some merit and already has developed a substantial data base --especially in the services area-- on the cross border sales of services as well as the on sales through foreign affiliates. For the last several years BEA has been publishing detailed presentations of the cross-border sales of services alongside data on sales through affiliates. In 1990, the latest year for which data on both types of transactions are available, U.S. firms received $138.1 billion from the cross-border sale of services, somewhat more than the $118.6 billion that their majority-owned foreign affiliates (MOFA's) received from the sale of services abroad (table 3). Foreign firms, in contrast, received somewhat less from the cross-border sales of services to U.S. persons than their majority-owned U.S. affiliates (MOUSA's) received from the sale os services in the United States--$97.0 billion, compared with $110.1 billion.

A portion of both the cross-border and affiliate sales of services represents trade between parents and affiliates or between affiliates of the same parent company. Of the $138.1 billion in U.S. cross-border sales of services, $22.0 billion represented U.S. parent companies' sales to their foreign affiliates, and $4.4 billion represented U.S. affiliates' sales to their foreign parents. By comparison, of the $97.0 billion in U.S. cross-border purchases of services, $5.2 billion represented U.S. parents' purchases from their foreign affiliates, and $5.7 billion represented U.S. affiliates' purchases from their foreign parents. Of the $118.6 billion in MOFA sales abroad, $13.3 billion was accounted for by sales to other foreign affiliates within the same multinational company.

Table 1.—Private Services, 1986–91

[Millions of dollars]

Line		Exports						Imports					
		1986	1987	1988	1989	1990	1991	1986	1987	1988	1989	1990	1991
1	**Total private services**	77,097	86,802	100,683	117,966	138,136	152,252	64,475	73,432	80,367	84,079	97,015	100,029
2	Travel	20,529	23,718	29,665	36,571	43,418	48,757	25,913	29,310	32,114	33,418	37,349	36,958
3	Overseas	15,850	18,043	22,313	26,939	30,806	34,518	20,311	23,313	25,260	25,746	28,929	28,104
4	Canada	2,701	3,309	4,150	5,385	7,093	8,499	3,034	2,939	3,232	3,396	3,541	3,705
5	Mexico	2,178	2,366	3,202	4,247	5,519	5,741	2,568	3,058	3,622	4,276	4,879	5,149
6	Passenger fares	5,545	6,966	8,925	10,525	15,140	15,627	6,564	7,318	7,768	8,258	10,608	10,636
7	Other transportation	15,784	17,334	19,456	21,095	22,942	23,625	16,715	17,788	19,534	20,664	23,401	23,297
8	Freight	4,651	5,068	5,904	6,326	7,179	7,237	10,786	10,724	11,712	11,705	12,586	11,947
9	Port services	10,574	11,575	12,820	13,901	14,730	15,332	5,254	6,392	7,099	8,176	9,920	10,421
10	Other	559	692	732	868	1,033	1,056	674	673	724	784	896	929
11	Royalties and license fees	7,927	9,914	11,802	13,064	16,470	17,799	1,302	1,844	2,585	2,602	3,133	3,984
12	Affiliated	5,988	7,629	9,156	10,207	13,081	14,014	908	1,296	1,410	1,778	2,196	2,857
13	U.S. parents' transactions	5,808	7,400	8,893	9,858	12,705	13,500	109	155	126	146	265	183
14	U.S. affiliates' transactions	180	229	263	349	376	514	799	1,141	1,285	1,632	1,931	2,674
15	Unaffiliated	1,939	2,285	2,645	2,857	3,389	3,785	484	547	1,175	824	937	1,127
16	Industrial processes	n.a.	1,678	1,982	2,051	2,452	2,586	n.a.	459	525	612	715	881
17	Other	n.a.	608	663	806	937	1,199	n.a.	88	650	212	222	246
18	Other private services	27,312	28,869	30,835	36,711	40,166	46,444	13,901	17,172	18,365	19,137	22,522	25,154
	Affiliated	8,183	8,176	9,123	11,542	13,307	14,639	3,875	5,200	5,853	7,150	8,702	9,570
	U.S. parents' transactions	5,375	5,340	6,363	8,363	9,267	9,614	2,351	2,893	3,271	4,022	4,910	5,163
	U.S. affiliates' transactions	2,808	2,836	2,760	3,179	4,040	5,025	1,524	2,307	2,582	3,128	3,792	4,407
	Unaffiliated	19,129	20,694	21,712	25,169	26,859	31,805	10,026	11,972	12,512	11,987	13,821	15,585
23	Education	3,495	3,821	4,142	4,575	5,127	5,752	433	452	539	586	658	737
24	Financial services	3,301	3,731	3,831	5,036	4,338	4,689	1,769	2,077	1,656	2,056	2,342	2,430
25	Insurance, net	1,970	2,295	1,509	1,572	1,834	2,063	2,201	3,241	2,628	823	1,845	2,639
26	Premiums	4,414	4,832	4,805	5,259	5,766	6,169	7,217	8,538	8,954	9,909	10,147	11,428
27	Losses	2,444	2,537	3,296	3,687	3,932	4,106	5,016	5,297	6,326	9,086	8,302	8,789
28	Telecommunications	1,827	2,111	2,196	2,519	2,660	2,794	3,253	3,736	4,576	5,172	5,500	5,563
29	Business, professional, and technical services	4,428	4,280	5,426	6,152	6,797	10,403	1,252	1,319	1,848	1,971	1,990	2,642
30	Advertising	94	109	145	145	130	179	77	128	188	228	245	291
31	Computer and data processing services	985	649	1,198	978	1,000	1,714	32	74	107	46	44	110
32	Data base and other information services	124	133	196	205	283	403	23	25	39	31	94	51
33	Research, development, and testing services	282	177	231	375	384	550	76	114	182	133	210	250
34	Management, consulting, and public relations services	306	327	344	300	354	661	60	67	73	143	135	170
35	Legal services	97	147	272	397	451	1,173	40	56	98	81	111	222
36	Construction, engineering, architectural, and mining services	759	868	790	939	705	1,293	301	163	307	443	266	323
37	Industrial engineering	96	304	278	219	504	540	75	103	133	53	75	31
38	Installation, maintenance, and repair of equipment	1,033	1,087	1,276	1,717	2,031	2,493	467	486	616	704	714	627
39	Other	649	680	697	878	945	1,388	99	93	107	109	135	567
40	Accounting, auditing, and bookkeeping services	21	27	37	124	119	154	28	37	31	22	57	73
41	Agricultural services	4	7	4	3	4	42	5	7	4	2	(*)	12
42	Mailing, reproduction, and commercial art	(D)	22	29	9	8	18	12	9	8	8	8	39
43	Management of health care facilities	1	0	(*)	0	0	7	(*)	0	2	(*)	(*)	10
44	Medical services	490	516	541	598	628	672	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
45	Personnel supply services	(D)	38	(D)	2	1	46	25	7	10	10	5	16
46	Sports and performing arts	32	11	(D)	43	47	75	21	25	40	54	44	59
47	Training services	73	80	54	109	138	294	7	9	10	13	17	43
48	Miscellaneous disbursements	n.a.	n.a.	n.a.	n.a.	n.a.	82	n.a.	n.a.	n.a.	n.a.	n.a.	315
49	Other unaffiliated services [1]	4,108	4,456	4,608	5,315	6,112	6,104	1,117	1,147	1,264	1,379	1,486	1,575

Table 2.—Added Detail Collected in the 1986 and 1991 Benchmark Surveys of Selected Services Transactions With Unaffiliated Foreign Persons

	Millions of dollars		Percent	
	1986	1991	1986	1991
U.S. receipts				
Advertising	94	179	100.0	100.0
Through agencies	76	110	80.9	61.5
Direct sales by media	18	69	19.1	38.5
Computer and data processing services	985	1,714	100.0	100.0
Data entry, processing, and tabulation	6	17	.6	1.0
Systems analysis, design, engineering, and custom programming	112	397	11.4	23.2
Software services, excluding custom programming	646	1,055	65.6	61.6
Equipment leasing (except financial leasing)	22	41	2.2	2.4
Integrated hardware/software systems	174	84	17.7	4.9
Other	25	120	2.5	7.0
Data base and other information services	124	403	100.0	100.0
Business and economic data base services	27	175	21.8	43.4
Miscellaneous data base services	45	94	36.3	23.3
General news services	6	77	4.8	19.1
Other	46	57	37.1	14.1
Telecommunications	1,827	2,794	100.0	100.0
Message telephone services	1,417	2,564	77.6	91.8
Private leased channel services	15	14	.8	.5
Telex, telegram, and other jointly provided (basic) services	358	123	19.6	4.4
Value added services	33	79	1.8	2.8
Support services	4	14	.2	.5
U.S. payments				
Telecommunications	3,253	5,563	100.0	100.0
Message telephone services	2,785	5,051	85.6	90.8
Private leased channel services[1]	155	388	4.8	7.0
Telex, telegram, and other jointly provided (basic) services	289	78	8.9	1.4
Value added services	2	19	.1	.3
Support services	22	27	.7	.5

1. Includes payments to Intelsat, which is treated as an international organization in the U.S. balance of payments accounts, for the use of channels on communications satellites.

Table 3.—Delivery of Services to Foreign and U.S. Markets Through Cross-Border Transactions and Through Sales by Affiliates

[Millions of dollars]

	1986	1987	1988	1989	1990	1991
U.S. cross-border (balance of payments) transactions:						
U.S. sales (exports)	77,097	86,802	100,683	117,966	138,136	152,252
U.S. purchases (imports)	64,476	73,432	80,367	84,079	97,013	100,029
Sales by nonbank majority-owned affiliates:						
Sales to foreign persons by foreign affiliates of U.S. companies [1]	72,849	87,011	100,813	99,226	118,643	n.a.
Sales to U.S. persons by U.S. affiliates of foreign companies	n.a.	62,553	73,165	94,169	110,107	n.a.

n.a. Not available.

1. Due to definitional and methodological improvements made in connection with the 1989 benchmark survey of U.S. direct investment abroad, the figures shown in this line for 1989 forward are not comparable to the figures shown for 1986–88. If the 1989 figure were placed on the same basis as the figures for 1986–88, sales in 1989 would have been $119,296 million.