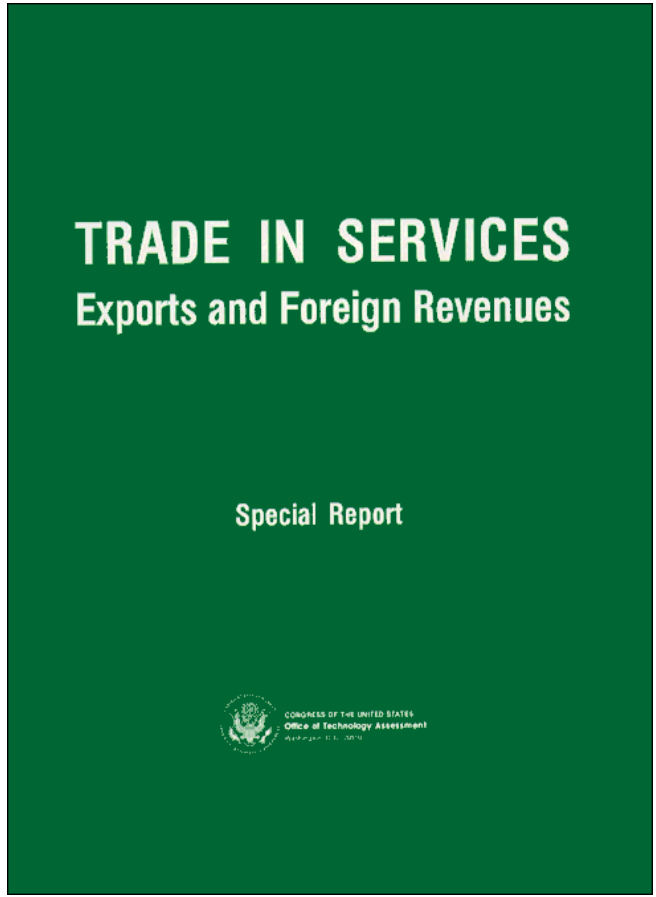
Trade in Services: Exports and Foreign Revenues

September 1986

NTIS order #PB87-118204





Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Trade in Services: Exports and Foreign Revenues—Special* Report, OTA-ITE-316 (Washington, DC: U.S. Government Printing Office, September 1986).

Library of Congress Catalog Card Number **86-600576**

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, DC 20402

Foreword

part of a larger assessment of international competition in the service industries, this special report gives a quantitative overview of U.S. international trade in services and discusses policy options for improving Federal Government data on services trade—data now subject to major sources of error. OTA's full assessment report on competition in the services, requested by the Senate Committees on Governmental Affairs and Foreign Relations and the House Committee on Small Business, will examine a broader range of issues, including:

- services trade in the world economy, and linkages between the services and manufacturing;
- competitive dynamics in international banking services, engineering and construction, technical licensing, and telecommunications, data processing, information services, and computer software;
- U.S. employment in service industries; and
- U.S. and foreign government policies toward services and the new round of multilateral trade negotiations.

The special report in this volume was prepared after the Senate Committee on Governmental Affairs requested separate publication of OTA's estimates of the impacts of services trade on the Nation's balance of payments. The Governmental Affairs Committee has expressed particular interest in the procedures used by Federal agencies for compiling such data, and the adequacy of the results for analyzing international competition in the services. The latter question is especially important given U.S. preparations for the next round of multilateral trade negotiations, scheduled to begin shortly under the auspices of the General Agreement on Tariffs and Trade.

In this special report, OTA examines alternative methods of defining and measuring international services trade—distinguishing, in particular, between direct exports (or imports) and the revenues of foreign affiliates of U.S. companies. The report estimates the level of U.S. international trade in services over the period 1982 to 1984, and compares these estimates with the official figures reported in the U.S. balance of payments.

OTA is grateful for the assistance provided by many individuals, inside and outside the Federal Government, during the preparation of this special report, Full responsibility for the contents rests with OTA.

Director

International Competition in the Services Advisory Panel

Robert Gilpin, *Chairman*
Princeton University

C. Michael Aho
Council on Foreign Relations, Inc.

Mark Anderson
AFL-CIO

John Bowles
Public Policy Analysis, Inc.

Robert B, Cohen
New York State Urban Development Corp.

Richard L. Crandall
Comshare

Ronnie L. Goldberg
New York Chamber of Commerce and Industry

Stephen D. Krasner
Stanford University

George Kohl
Communications Workers of America

Robert Kuttner
Brookline, MA

Martin Mayer
New York, NY

William Nolen
Highlands Insurance Co.

K. Nagaraja Rao
Wentworth Institute of Technology

Cathy A. Schoen
Service Employees International Union

Jeffrey J. Schott
Institute for International Economics

Ronald K. Shelp
Celanese Corp.

NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

OTA Project Staff: International Competition in the Service Industries–Special Report

Lionel S. Johns, *Assistant Director, OTA*
Energy, Materials, and International Security Division

Audrey Buyrn, *Industry, Technology, and Employment Program Manager*

John A. Alic, *Project Director*

Kenneth L. Conca

Contributors

Douglas R. Ostrom
H, Peter Gray
Jeffrey Hart
Kenan P. Jarboe
Mary Ellen Mogee
Philip Mundo
Jeffrey H. Taylor

Administrative Staff

Edna Thompson, *Administrative Assistant*
Andrea Amiri
Joyce Wills

Contents

Chapter *Page*

1. Summary 3
Principal Findings. 3
Policy Implications 5

2. **Measuring International Service Activity** 15

3. Services in the Balance of Payments. 21
Federal Government Figures for the U.S. Balance of Payments in Services 21
Federal Government Procedures for Measuring Services and Investment in the Balance of Payments 23
Travel. 26
Passenger Fares 28
Transportation 28
Fees and Royalties 29
Other Private Services. 30
Other Private Receipts and Payments. 31
Direct Investment Data 32

4. **OTA Estimates of International Service Activity** 37
Balance of Payments in Services. 37
Foreign Revenues in Services 41

5. **Individual Sector Summaries** 47
Accounting 47
Advertising. 51
Commercial Banking 53
Construction. 58
Data Processing 61
Educational Services. 63
Engineering, Architecture, and Surveying. 65
Franchising. 68
Health Services 70
Information Services. 72
Insurance 73
Investment Banking and Brokerage Services 77
Leasing 79
Legal Services 82
Licensing, ... 83
Management, Consulting, and Public Relations 86
Motion Pictures 88
Computer Software 89
Telecommunications 91
Transportation 94
Travel 98
Miscellaneous Services. 102

List of Tables

7able No. *Page*

1. Summary Comparisons of Balance of Payments and Foreign Revenues Figures for the Services 4
2, Categories for Invisible Transactions in the U.S. Current Account. 25
3. Summary of Deficiencies in BEA Database on Invisible Transactions 27
4.OTA Estimates of Service Balance of Payments, 1982-84 38
5.OTA Estimates of Foreign Revenues of U.S. Service Firms, 1982-84 41

Contents–continued

Table No.		Page
6.	OTA Estimates of U.S. Revenues of Foreign Service Firms, 1982-84	42
7.	Ratio of U.S. Exports to Total Foreign Revenues, 1983	43
8.	Foreign Revenues in Accounting Services	50
9.	Foreign Revenues in Advertising Services	52
10.	U.S. Commercial Bank Offices	53
11.	U.S. Banking System Assets by Type	54
12.	Foreign Banks in the United States by Organizational Form	56
13.	Foreign-Owned U.S. Banks Ranked by Size	56
14.	Foreign Revenues in Commercial Banking Services	57
15.	Foreign Revenues in Construction Services	60
16.	**New** Foreign Contract Awards of U,S, Construction Firms	61
17.	U.S. International Construction Activity by Region, 1982	61
18.	Foreign Revenues in Data Processing Services	62
19.	Foreign Revenues in Educational Services	64
20.	Foreign Students in the United States by Nationality	64
21.	U.S. Engineering, Architecture, and Surveying Establishments Indicating Sales to Nonresidents, 1982	66
22.	Percent of Receipts From Nonresidents for U.S. Engineering, Architecture, and Surveying Establishments Reporting Nonresident Sales, 1982	66
23.	Foreign Revenues in Engineering, Architecture, and Surveying Services	67
24.	U.S. Franchising Sales by Type of Business, 1984	68
25.	Foreign Operations of U.S. Franchisers	69
26.	Foreign Revenues in Franchising Services	69
27.	Estimated U.S. Health Care Expenditures, 1985	70
28.	Health Care Establishments in the United States Other Than Hospitals, 1982	71
29.	Foreign Revenues in Health Services	71
30.	Information Services Offered by U.S. Firms, 1982	72
31.	Foreign Revenues in Information Services	73
32.	Foreign Revenues in Insurance	75
33.	International Insurance Activity	76
34.	Foreign Revenues in Investment Banking and Brokerage Services	79
35.	Leasing as a Percentage of Business Investment in Equipment	80
36.	Receipts From Nonresidents for U.S. Leasing Establishments Reporting Nonresident Receipts, 1982	81
37.	Foreign Revenues in Equipment Rental and Leasing,	81
38.	Foreign Revenues in Legal Services	83
39.	Distribution by Industry of 1982 Net Licensing Receipts of U.S. Parent Firms From Their Foreign Affiliates	84
40.	Balance of Payments in Licensing	85
41.	U.S. Parents' Net Affilliated Receipts of Royalties and License Fees in Manufacturing	85
42.	Percent of U.S. Management, Consulting, and Public Relations Establishments Indicating Sales to Nonresidents, 1982	87
43.	Percent of Receipts From Nonresidents for U.S. Management, Consulting, and Public Relations Establishments Reporting Nonresident Sales, 1982	87
44.	Foreign Revenues in Consulting Services	87
45.	Estimated Percentage Distribution of Foreign Revenues in the U.S. Motion Picture Industry	88
46.	Foreign Revenues in Motion Pictures	88
47.	U.S. Software Firms with International Sales, 1984	90
48.	Type of Foreign Presence for U.S. Software Firms, 1984	90
49.	Foreign Revenues in Computer Software	91
50.	U.S. Telecommunication Industry Revenues by Market Segment	92
51.	U.S. International Telephone and Telegraph Communications, 1983	93

Contents–continued

Table No. *Page*

52. Foreign Revenues in Telecommunications Services . . . . . , 93
53. U.S. Revenues for International Voice and Message Communications Terminating in the United States, 1983 94
54. U.S. Payments to Foreign Carriers on International Voice and Message Transmissions Originating in the United States, 1983 94
55. U.S. Transportation Services Revenues 94
56. Foreign Revenues in Transportation Services 97
57, Geographic Distribution of U.S. Direct Trade in Transportation Services, 1984 97
58. Balance of Payments in Travel Services. 101
59. U.S. Travel Receipts and Payments by Region, 1984 102
60. Foreign Revenues in Miscellaneous Services . . . . . ,102

List of Figures

Figure No. *Page*

1. BEA Estimates of U,S, Current Account Receipts 21
2. BEA Estimates of U.S. Current Account Payments, ... 22
3 .BEA Estimates of U,S, Current Account Balance 22
4. BEA Estimates of U.S. Invisible Receipts, 1985 23
5. BEA Estimates of U.S. Invisible Payments, 1985 24
6, U.S. Service Exports, 1982-84 39
7. U.S. Service Imports, 1982-84 39
8. U.S. Balance of Payments Surplus in Services, 1982-84 39
9. Foreign Revenues in Services, 1982-83 43
10. Receipts of Accounting, Auditing, and Bookkeeping Firms by Type of Activity, 1982 . . 48
11, Geographic Distribution of Chargeable Hours for a Major U.S. Accounting Firm in 1985. 51
12, Net Interest Income and Other Operating Income, U.S. Insured Commercial Banks 53
13. Distribution of U,S. Banking System Assets by Type as of Dee, 31, 1984 54
14. Distribution of Assets Among the World's 500 Largest Banks, ... 54
15. Assets of U.S, Offices of Foreign Banks as of Dec. 31, 1984 . . . . . , 56
16.New U.S. Construction, 1985 59
17. Foreign Contract Awards of Major U.S. Construction Firms *60*
18. Foreign Students in the United States 65
19. U.S. Students Abroad, 1981 65
20, Total Billings of Top 500 U.S. Design Firms by Type of Project, 1984 66
21, Foreign Billings of Largest U.S. Design Firms by Region 67
22, U.S. Revenues of Foreign Design Firms, 1984 67
23. Foreign Franchising Outlets of U.S. Firms by Type, 1984 68
24, U.S. Franchisors by Region, 1984 69
25, U.S. Securities Industry Revenues, 1984 . . . . . , 77
26. Global Leasing Market 81
27. U.S. Unaffiliated Receipts of Fees and Royalties by Industry, 1982-84 85
28. U.S. Unaffiliated Fees and Royalties, 1984 85
29. Management, Consulting, and Public Relations Industry Receipts, 1982 86
30. U.S. Transportation Receipts, 1982 95
31. Net U.S. International Transportation Transactions, 1984 97
32, U.S. Revenues of Foreign Transportation Firms, 1983 98
33. International Travel by Purpose of Trip, 1984 100
34. U.S. Expenditures of Foreign Visitors, 1984 . . . . . ,101
35. U.S. Travel Surplus or Deficit by Region, 1984 101

Chapter 1

Summary

Chapter 1

Summary

Using data from government, industry, trade associations, the business press, and other sources, OTA has estimated the level of U.S. international service activity in 22 categories for the years 1982-84. OTA's estimates indicate that Federal Government balance of payments figures significantly understate both exports and imports of services. As much as half of the Nation's exports of services may escape the official statistics. The causes range from low rates of response on voluntary surveys to data categories that are conceptually flawed or outdated. (For example, the Nation's trade statistics make no explicit provision for computer software, one of the most critical service-related products in a high-technology economy,)

Although the responsible Federal agencies have been working to improve procedures for collecting data on trade in services, progress has been slow, impeded by concerns over added costs to both business and government. OTA's analysis, however, suggests that substantial improvements in the data on trade and investment in services would be possible at little or no additional cost. OTA's own estimates represent no more than 2 person-years of effort. The results reveal very large uncertainties. A relatively modest effort by the Federal Government could greatly reduce these uncertainties, narrowing the range of probable error and thereby providing more accurate data on the balance of trade in services. The benefits would include better understanding of the importance of service transactions relative to trade in goods and flows of capital in determining the Nation's overall trade position,

Thus far, U.S. preparations for the upcoming round of multilateral trade negotiations, where trade in services will be a major issue, have been hampered by a database that is not only incomplete but subject to substantial errors. Because the new trade round will probably extend into the 1990s, action now to revamp procedures for collecting and anaIyzing data on trade in services could help to support the evolving U.S. negotiating position. Such action would also aid U.S. negotiators in the bilateral discussions that have become a more prominent feature of the Nation's trade policy. On pages 7 to 11, OTA outlines specific options for improving the services database,

PRINCIPAL FINDINGS

1. *The current Federal Government system of reporting services in the balance of payments is subject to large errors*. These errors, much greater than those for trade in goods, arise in part from difficulties inherent in measuring production and trade in the services. Most services, as intangibles, cannot be stored, transported, or counted as they cross national borders. The historical origins of the services account as a residual category for all nongoods transactions create further sources of error. Procedures for data collection and estimation have not kept pace with the growth in volume and diversity of international service activity. (While the Federal Government collects trade statistics for about *10,000* categories of goods, the service account at its most disaggregated can be broken down into perhaps **40** categories.) Errors result from incomplete coverage of service activity, commingling of service transactions with investment income, misclassification of service activities, and the inability to assign value to some kinds of transactions,

2, Excluding banking (and services bundled with goods], OTA estimates that *the U.S. balance of payments understated exports of services by $25 to $47 billion in 1984* (table *1);* nonbanking *imports of services were*

Table 1.—Summary Comparisons of Balance of Payments and Foreign Revenues Figures for the Services[a] (in billions of current U.S. dollars)

	Exports	Imports	Balance	Overseas revenues of affiliates of U.S. firms	U.S. revenues of affiliates of foreign firms
Official U.S. Government figures:					
1983	$41.8	$35.4	$ 6.4	Not compiled	
1984	43.8	41.5	2.3		
OTA estimates:					
1983	$67-84	$52-66	$17[b]	$87-97	$69-75
1984	69-91	57-74	14[b]	Not available	

[a]Excluding banking; see ch. 4 for explanations of coverage.
[b]Based on midrange of OTA estimates for exports and imports.

SOURCE: Office of Technology Assessment.

underreported by an estimated $16 to $33bil-lion.1 The official balance of payments figures for both exports and imports, as compiled by the Commerce Department's Bureau of Economic Analysis (BEA), reflect errors of similar magnitude for 1982 and 1983. OTA's midrange estimates (ch. 4) suggest that the current account understated the U.S. service surplus (i. e., net exports) by $11 billion in 1982 and 1983, and $12 billion in 1984.

3, *Trade in services made a significant positive contribution to the U.S. balance of payments over the years 1982 to 1984.* OTA's midrange estimates suggest a 1984 surplus on services of roughly $14 billion. While much greater than the official balance of payments figure for services—a surplus of slightly more than $2 billion–the Nation's 1984 deficitof$114 billion on trade in goods far overshadows net service exports. Both the BEA's figures and OTA's estimates show a decline in the services surplus over the period 1982-84.

4. OTA estimates that U.S. service exports (again excluding banking services and services bundled with goods) came to $65 to $81 billion in 1982,$67 to $84 billion in 1983, and $69 to $91 billion in 1984. As table 1 indicates, *sales of services in foreign markets by the overseas affiliates of American firms exceed direct exports of services.*

U.S. affiliates overseas had sales totaling an estimated $92 to $102 billion in 1982 and $87 to $97 billion in 1983. (Figures for 1984 could not be estimated; the apparent decline in sales from 1982 to 1983 in part reflects rises in the value of the dollar relative to local currencies, rather than declines in foreign sales measured in those local currencies.) Similarly, service sales in the United States by affiliates of foreign firms substantially exceeded the Nation's direct imports of services. OTA estimates direct imports at $52 to $66 billion in 1983 and $57 to $74 billion in 1984, with service receipts of the U.S. affiliates of foreign firms coming to $69 to $75 billion in 1983.

5, The leading services exported directly from the United States were transportation services, travel services, construction, and licensing (table 5, page 41), OTA estimates that these sectors as a group accounted for 63 percent of U.S. nonbank service exports in 1982, 58 percent in 1983, and 57 percent in 1984.

[1]In fact, the underreporting in the current account is almost certainly greater; as discussed below, OTA's figures include only those service transactions which could be reliably estimated, and thus may not reflect the full impact of services on the balance of payments, Banking, in particular, has been excluded from these summary figures because Federal Government data on international banking does not permit separation of fee-for-service income from receipts and payments associated with foreign investment (see p. 40). The latter are conceptually quite different, and, in OTA's view, should not be considered as trade in services. Nor is it possible to estimate service exports from the United States by the U.S. affiliates of foreign firms in a number of service industries. For details, see Chapter 2: *Measuring International Service Activity.*

"Services in the U.S. Balance of Payments, 1982-84: Documentation of OTA Estimates," July 1986, available from the National Technical Information Service [NTIS), presents OTA's estimating procedures and assumptions in detail.

Transportation services, travel, and insurance accounted for the bulk of U.S. imports of services over 1982 to 1984, nearly three-quarters of the Nation's direct imports of nonbank services during these years.

6. While direct exporting is common in some service industries, in others, sales through foreign affiliates are far more important, The 22 service categories OTA has examined can be divided into three groups: those in which most or all foreign revenues are generated by direct exports (including travel, educational and legal services, and technology licensing); those in which most or all were generated by sales through affiliates (including insurance, accounting, and advertising); and those in which both direct sales and affiliate sales contributed significantly to totaI foreign revenues (including transportation, construction, consulting, and computer software).

7 For most U.S. service industries, like most goods industries, domestic output far outstrips foreign revenues (ch. 5). Prominent examples include construction, health services, and education. While thousands of companies (or other providers) populate most of the service industries, in many cases a few large firms generate most of the foreign revenues —whether these result from direct exports or sales by affiliates. For instance, domestic revenues of the roughly 50,000 U.S. accounting establishments came to about $19 billion in 1984, with OTA's estimates of foreign revenues totaling $4.1 to $4.7 billion. Of these foreign revenues, almost all were accounted for by affiliates of U.S. accounting firms, rather than exports, and almost all of these affiliates were associated with the "Big Eight" U.S. firms. Such observations suggest that liberalization of trade and investment in the services will, in at least some industries, benefit primarily the small number of large firms with substantial overseas activities.

POLICY IMPLICATIONS

Given the historical trends and modes of product ion characteristic of most service industries, exports of services can be expected to make a modest positive contribution, over the foreseeable future, to the U.S. balance of payments. But even though trade in services will remain small compared with trade in goods, the services are of considerable importance internationally. In some cases—ego engineering and construction contracts—exports of goods may follow from sales of services. In other cases, American service firms have followed American manufacturers overseas, High-technology goods exports, almost by definition, embody high service content in forms such as engineering or other professional knowledge. Linkages between overseas sales of goods and services, already strong, will grow as American companies seek new international business strategies, approaching their markets in global rather than national terms, In view of such trends, improving the system for collecting and analyzing data on services trade could help government policy makers evaluate future prospects for U.S. industries and develop effective negotiating strategies both bilaterally and in multilateral forums such as the General Agreement on Tariffs and Trade (GATT).

For reasons inherent in the production of services, U.S.-based firms will continue to do more overseas business through foreign establishments than through direct exporting of services. While foreign investment may be of great importance to particular companies, this does not necessarily make it vital for U.S. economic interests as a whole. Sometimes the indirect and strategic importance of foreign affiliates will be high.[2] Overseas offices of U.S. banks aid in exports of manufactures. When an American company manages an overseas construction

[2]This question will be analyzed in greater detail in OTA's forthcoming report *International Competition in the Service Industries.*



Photo credit Bechtel Power Corp

The Shoubrah El-Kheima generating plant, being built for the Egyptian Electricity Authority by an American construction company.

project, indirect benefits to the U.S. economy may greatly exceed those that can be directly traced to the contract. But in general, when U.S.-based firms invest in overseas affiliates in the services, these affiliates are staffed by local people and purchase in the local market; they may have little if any relation to economic activities within the United States. Exports from the United States and overseas revenues of affiliates should not be confused, nor should their potential benefits to the Nation's economy.

At present, the Federal Government does not collect enough statistical data on trade and investment in services to address such matters in much detail—e. g., the balance of interests at stake when offering concessions on trade in goods in exchange for relaxed barriers on services trade. Certainly the database seems inadequate to support negotiations during a long-running and complex round of trade talks—a problem acknowledged by the United States during the early stages of preparations for the forthcoming GATT round.[3] Perhaps most important, even given adequate data, the Federal

[3]See, for example, "U.S. National Study on Trade in Services: A Submission by the United States Government to the General Agreement on Tariffs and Trade, " prepared under the direction of the Office of the United States Trade Representative, Washington, DC, December 1983, p. 172.

The deficiencies in Federal Government data on trade and investment have been of concern to Congress for a number of years. See, for example, "Responses to Written Questions Submitted by Senator Roth," *Government Organization for Trade,* hearing, Committee on Governmental Affairs, U.S. Senate, June 4, 1981, p. 24. More recently, Title 111 of the Trade and Tariff Act of 1984 [Public Law 98-573] specifically authorized the President to collect and analyze data on U.S. trade in services. For a summary of executive branch authority and duties, see 22U.S. C. sec. 3101 (1986].

Government may not possess the analytical expertise to define objectives, weigh possible trade-offs, and develop effective alternative negotiating positions over the course of the upcoming trade round.

Consider, specifically, the decision by the United States prior to the 1982 GATT Ministerial to place a high priority on services in the next round—a decision taken in the midst of a period of deterioration in the ability of the world trading system to manage the impacts on trade in goods of nontariff barriers, bilateralism, and the national industrial policies that have become standard in many parts of the world. Would a better grasp of the prospects for U.S. exports of services have led to a different approach to the new round? Certainly the poor quality and coverage of the data impair the ability of policy makers to gage the importance of services trade—as a whole, on a sector-by-sector basis, or bilaterally.

The very large uncertainties in the data—illustrated by the ranges in table l—make it more difficult to design effective negotiating strategies as well as to weigh trade-offs among objectives. Note that, while the midrange estimates in the table offer a reasonable basis for comparisons with official statistics, the data are so poor and the uncertainties so large that OTA cannot even state with complete confidence that BEA's balance of payments figures understate rather than overstate the Nation's net exports of services. (The extremes of OTA's estimates for the 1984 services balance range from a deficit of $4 billion to a surplus of $32 billion, while the BEA figure is a $2.3 billion surplus.] Furthermore, because exports and imports affect calculations of gross national product and related macroeconomic statistics, errors in the balance of payments data reduce the accuracy of BEA estimates here as well. Improvements now could aid U.S. trade negotiators while the new trade round is underway, and into the future,

Although the responsible agencies have been making progress in improving the services database, this progress has been slow. Budgetary constraints and reluctance to impose additional reporting requirements on businesses are legitimate concerns, but OTA's analysis suggests that substantial improvements in the accuracy of the data would be possible without much additional cost to either the Federal Government or the private sector. The benefits of better analytical understanding of trade and investment in the services, and their impacts on other parts of the economy, should far outweigh any additional costs.

The remainder of this chapter outlines alternative approaches to improving the statistics. Table 3 (in ch, 3), which outlines the principal weaknesses in current procedures, provides the logical framework for improvements. Possible steps include:

1. *Implement the Proposed BE-20 Survey.*— As discussed in chapter 3, BEA has proposed a new benchmark survey, BE-20, of unaffiliated service transactions to fill some of the major gaps in the data now collected. This survey was rejected by the Office of Management and Budget (OMB) for reasons involving both the anticipated burden on respondents and BEA's methods of developing the survey. Implementation of such a survey, perhaps in modified form, along with annual sample surveys thereafter, would help eliminate what is perhaps the greatest deficiency in current services data coverage. If the reasons cited by OMB in rejecting BE-2o are judged to outweigh the benefits such a survey would provide, it should be possible to redesign the survey to provide useful, if more limited data, while reducing the costs for businesses surveyed.
2. *Implement a Truncated Version of BE-20, Focusing on a Limited Number of the Most Important Industries.–If* OMB'S objections cannot be satisfied by a redesigned BE-2o survey, a less ambitious survey could nevertheless give needed information on unaffiliated service transactions. By including only those service industries expected to account for large volumes of such transactions, the uncertainties in the balance of payments could

be substantially reduced. A less than comprehensive survey would not fill all the gaps in BEA's database, but would be far better than the present situation,

While one purpose of a benchmark survey such as BE-2o is to identify which industries are, in fact, the most significant in terms of international trade, OTA's estimates (chs. 4 and 5) indicate that a few categories account for the bulk of service exports and imports. (As the industry summaries in ch. 5 demonstrate, data on imports of services are particularly poor,) These industries could be surveyed with a truncated version of BE-20, followed by annual sampling of the universe of firms, Based on OTA's work, a list of services to be surveyed should include at a minimum banking (if not dealt with elsewhere —see below), insurance, computer software, and investment banking and brokerage services. In combination with better versions of existing surveys on transportation, travel, and engineering and construction, a large fraction of U.S. trade in services could be covered. In addition, services currently experiencing rapid international growth (management consulting, information services, health care) could be considered for inclusion,



Photo credit World-W/de Photo

American soft drinks are bottled in many parts of the world under franchise arrangements,

3. *Expand the Nonresident Questionnaire in the Census of Service Industries.—The* Commerce Department's 1982 Census of Service Industries included, for the first time, questions on sales by U.S. firms to nonresidents, Establishments in four industry groups were asked: whether any portion of their sales were to nonresidents; whether these receipts were included in total receipts reported in the Census; and, if so, the level of those receipts. (The four industry groups were: computer and data processing services; engineering, architecture, and surveying; management, consulting, and public relations services; and equipment rental and leasing.) Continuing this line of questioning in the next Census, scheduled for 1987, and perhaps expanding it to include more service industries, would provide information not currently collected by any Federal agency.

While data at the 5-year Census intervals provides no more than a limited tool for analysis (e.g., of competitiveness), such information is needed to help identify sectors experiencing rapid growth internationally. To get the most from such questionnaires, care must be exercised in selecting the industries to cover; the 1982 results for both data processing and computer services and equipment rental and leasing appear to greatly understate the level of trade because establishments whose major business falls in some other industry category account for a large fraction of receipts (e. g., equipment leasing by banks).

4. *Improve the Data on International Bank*ing.—Poor data has prevented BEA from including banking as a separate line item in the balance of payments—a major deficiency, given the size and importance of the international banking industry. Banking transactions are currently lumped together with nonservice invisible transactions (ch, 3) such as income from portfolio investments, Also because of poor quality data, OTA has been unable to estimate the share of international banking activ-

ity accounted for by direct trade as opposed to affiliate sales.

American banks report information on international transactions to the Federal Reserve Board (FRB). With minor modifications, these data should be sufficient to calculate banking exports. However, the government does not collect comprehensive data on the revenues of foreign banks operating in the United States. While it is probably impossible to compile complete data on banking service imports from the foreign offices of foreign banks, the FRB currently monitors on a quarterly basis the asset levels of the U.S. offices of these banks. The Board could presumably extend these surveys to receipts. This would be particularly useful for fee-based services, on which almost no information now exists.

Another option for improving banking data would be to include banks in the benchmark and annual BEA surveys of inbound and outbound direct investment. (Banks are now covered by a much more limited BEA survey.) To avoid duplication, such a step would have to be coordinated with current FRB data-collection efforts, but it could provide needed information on parent-affiliate transactions, particularly of foreign-owned U.S. banks, and other aspects of international banking operations.

5, *Survey U.S. Holders of Foreign Securities.*—As indicated in chapter 3, estimates of portfolio investment income (income from holdings totaling less than *10* percent of a foreign firm's equity] are currently based on extrapolations of a survey conducted more than 40 years ago. Although the Treasury Department has concluded that comprehensive coverage of U.S. holders of foreign securities would be prohibitively expensive, a narrower survey —e. g., of banks, brokerage houses, mutual funds, and other major participants in foreign securities markets— would be a great improvement.

6. *Survey Purchases of Services by Affiliates.*—Enhancements to the serviice portions of the inbound and outbound direct investment surveys have provided much more information on sales of services by the overseas affiliates of U.S. firms and by the U.S. affiliates of foreign firms. Nonetheless, there is still no coverage of purchases of services by affiliates. As a result, it is impossible to determine whether firms located in the United States purchase the services they require as inputs to production here or import them (from an overseas parent, from other affiliates of the parent firm, or from unaffiliated firms).

This question is particularly important in the context of trade negotiations, because such transactions (e. g., involving R&D or management services) may have major impacts on competitiveness in manufacturing as well as service industries. Because it could prove difficult for firms to provide this information, depending on accounting practices, BEA might begin by exploring the possible addition of questions on service purchases to its direct investment surveys in order to determine whether this would be an unreasonable burden on respondents. (Some firms might also resist such disclosures.)

7 *Expand the]nbound Direct lnvestmeni* Survey. -At present, the Federal Government collects less information on the direct investments of foreign firms in the United States than on the overseas holdings of American firms. The shortcomings in the data on inward investrnent make it difficult to estimate service imports from overseas parents as well as exports from U.S. affiliates either to parent firms or to other trading partners. The next inbound investment benchmark survey, scheduled for *1987,* would be more useful if the U.S. affiliates of foreign firms were asked for information on transactions with the parent, and on the distribution of their sales between U.S. and foreign markets.

8 *Expand the Use of Data from Sources Outside the Federal Government.-As* chapter *5* indicates, much useful but un-

official data on international trade in services exists—e.g,, industry surveys, estimates compiled by trade associations. *Advertising Age's* annual surveys, for instance, proved quite useful for OTA's estimates, while in recent editions of the U.S. Industrial *Outlook,* the Commerce Department has increased its use of private sector data, particularly for international trade.4

The quality of such data varies greatly. Private sector sources will seldom be adequate substitutes for government statistics, and must always be used with discretion. Nonetheless, they are better than nothing; OTA has been forced to rely heavily on private sector data sources in its previous assessments of international competitiveness. So long as steps have been taken to ensure reasonable reliability in the original database—a noteworthy example being *Advertising Age's* recent decision to request accountant certification from responding firms—these can be useful supplements to official government data.

One way to provide markedly better data on services trade would be to charge BEA or some other Federal agency with making ongoing "best-estimate" compilations following procedures similar to those OTA has used in preparing this report, Such a departure from normal government practices would need to be approached with care—in part because it might establish unfortunate precedents (e.g., leading to curtailment rather than enhancement of the government's own efforts). But with experience, and continued refinements in technique, the database could be improved relatively quickly even in the absence of new surveys.

Much of the private sector data is limited to worldwide totals, rather than country-by-country figures. Trade negotiators, as well as analysts, typically need country-specific data. Should the government begin to use more data from unofficial sources, the responsible agencies could work with those collecting the data to seek country-by-country disaggregation,

9, *Alert Users to Shortcomings in the Database, While Also Informing Users of Data in Which They Can Place Confidence.*— In the *Survey of Current Business,* and elsewhere, balance of payments figures for the services based on information collected directly (i.e., on the same basis as for goods crossing the Nation's borders) could be segregated from those based on surveys. Furthermore, the survey data could be presented in two or more categories, with that based on universal surveys segregated from that based on sample surveys. By clearly identifying extrapolations from limited, out-of-date, or otherwise poor quality samples, users would know when they could presume that the figures presented were reasonably accurate and when they were speculative; indeed, with little additional effort, BEA should be able to place error bands on its more tentative figures,

10. *Hasten Revisions of the SIC Code, and Update the Code More Frequently .—The* Standard Industrial Classification (SIC) system, which provides the framework for a great deal of the Federal Government's information on production, employment, and trade, is currently being revised—a long overdue set of revisions, the first since 1972. (Currently, for example, nearly all computer systems, from personal computers to the largest supercomputers—some $60 billion in U.S. output during 1985—fall in a single category, SIC 357311.) Rapid structural shifts in the U.S. economy mean that, if the SIC system is to remain useful for analytical pur-

4While the International Trade Administration, charged with preparing the *Outlook*, has broadened and deepened its coverage for both goods and services through such means, further progress is certainly possible; perhaps the greatest need is for more careful and consistent distinctions between sales by foreign affiliates and direct trade.

poses, it will have to be revised at more frequent intervals than in the past (while preserving historical continuity),

While SIC revisions will not directly affect balance of payments figures, the new categories will have major impacts on the organization and presentation of many types of service industry data, including that on revenues, employment, wages, and capital expenditures. Over-aggregation of existing services data creates serious problems for analysts and policymakers. Decisions on service categories in the SIC codes need careful consideration; they will have long-term impacts on our ability to understand and respond to ongoing shifts in the structure of the U.S. economy.

It would make little sense to take some of the steps outlined above—e. g,, to make greater use of data from nongovernment sources—unless these steps were accompanied by a greater effort on the part of Federal agencies to critically analyze and evaluate the data they compile and present. To use nongovernment data sources effectively means to acknowledge the errors and uncertainties in the official data and seek practical remedies, rather than continue with outdated and conceptually flawed procedures. For BEA to prepare “best-estimates,” rather than report data that seem precise but may be subject to large errors, would represent a substantial change in direction for the agency. Nonetheless, OTA suggests that, given the rapid changes taking place in the U.S. and world economies, it may be appropriate to acknowledge more bluntly the uncertainties and other flaws in the existing database, and move toward a set of categories and estimating procedures that are conceptually correct and more useful analytically. This would be a major step toward building a database that could support ongoing analysis of the international competitive position of U.S. industries, and thereby provide policy makers with the kind of information they need.

Chapter 2

Measuring International Service Activity

Chapter 2

Measuring International Service Activity

This report addresses two fundamental questions. First, what is the impact of international service activity on the U.S. balance of payments? Second, to what extent are service products exported and imported directly, as opposed to being sold in foreign markets through local affiliates? To answer these and related questions, it is first necessary to adopt a rigorous set of definitions for trade in services, the subject of this chapter, and for service transactions themselves—a subset of invisible transactions, and one of the subjects of chapter 3.

In general, an American company wishing to sell services overseas—or a foreign company wishing to sell services here—can choose from alternatives that include direct exports, investments in foreign affiliates, licensing agreements, and joint ventures, While these can be combined in various ways, the underlying alternatives reduce to two—exporting services directly, or operating in some way through foreign affiliates; licensing agreements can be viewed as exports of intangible assets or rights, while joint ventures involve the establishment of an affiliate.

Services can be exported directly if the service is transportable (motion pictures, computer software], if the buyer comes to the source of supply (travel services), or if a cross-border linkage between buyer and seller can be established (either directly, as in the case of transportation and telecommunications, or by sending skilled empIoyees to the site, as in construction and management consulting). Alternatively, firms may choose to do business in foreign markets by investing in foreign affiliates (and may export to them), This maybe the preferred mode of operation because of inherent difficulties in producing or marketing a particular service away from the site of consumption (many kinds of health services), because of barriers preventing exports to the buyer nation (many governments 1imit or prohibit cross-border insurance underwriting], or because of competitive advantages stemming from local operations (advertising, many other types of business services). The equity share held by an American firm in a foreign affiliate may range from 10 to 100 percent; the U.S. Government treats holdings of less than 10 percent as portfolio investments rather than foreign direct investment (FDI). Other governments may use different definitions.

Exports and imports enter the balance of payments directly because buyer and seller reside in different countries. Local sales by foreign affiliates are not U.S. balance of payments transactions, but direct investment may nonetheless affect the balance of payments in several ways—e. g,, transfer of investment funds, repatriation of profits from the foreign affiliate, licensing agreements and other charges for services transferred between parent and affiliate, Of the sales of the foreign affiliate, only exports from its own country of operation constitute balance of payments transactions; only if those exports were sold to the United States would they affect the U.S. balance of payments,

This fundamental distinction leads to the two alternative measures of international service activity that OTA has adopted for this report. One is the standard balance of payments measure of exports (receipts) and imports (payments), reflecting the flow of service products across national borders. This is the indicator most significant for direct impacts on the Nation's economy —e.g., employment generated by export sales.

The second and broader measure includes exports while also reflecting the operations of foreign affiliates. Particularly for services, where both the nature of production and the frequency of regulatory and trade barriers may make FDI the only way to penetrate a market, affiliate sales should be included in a comprehensive measure of international activity. The more useful indicators for analytical purposes treat service output on an ownership rather than a geographic basis. Thus OTA defines the "foreign revenues" of U.S. firms as including

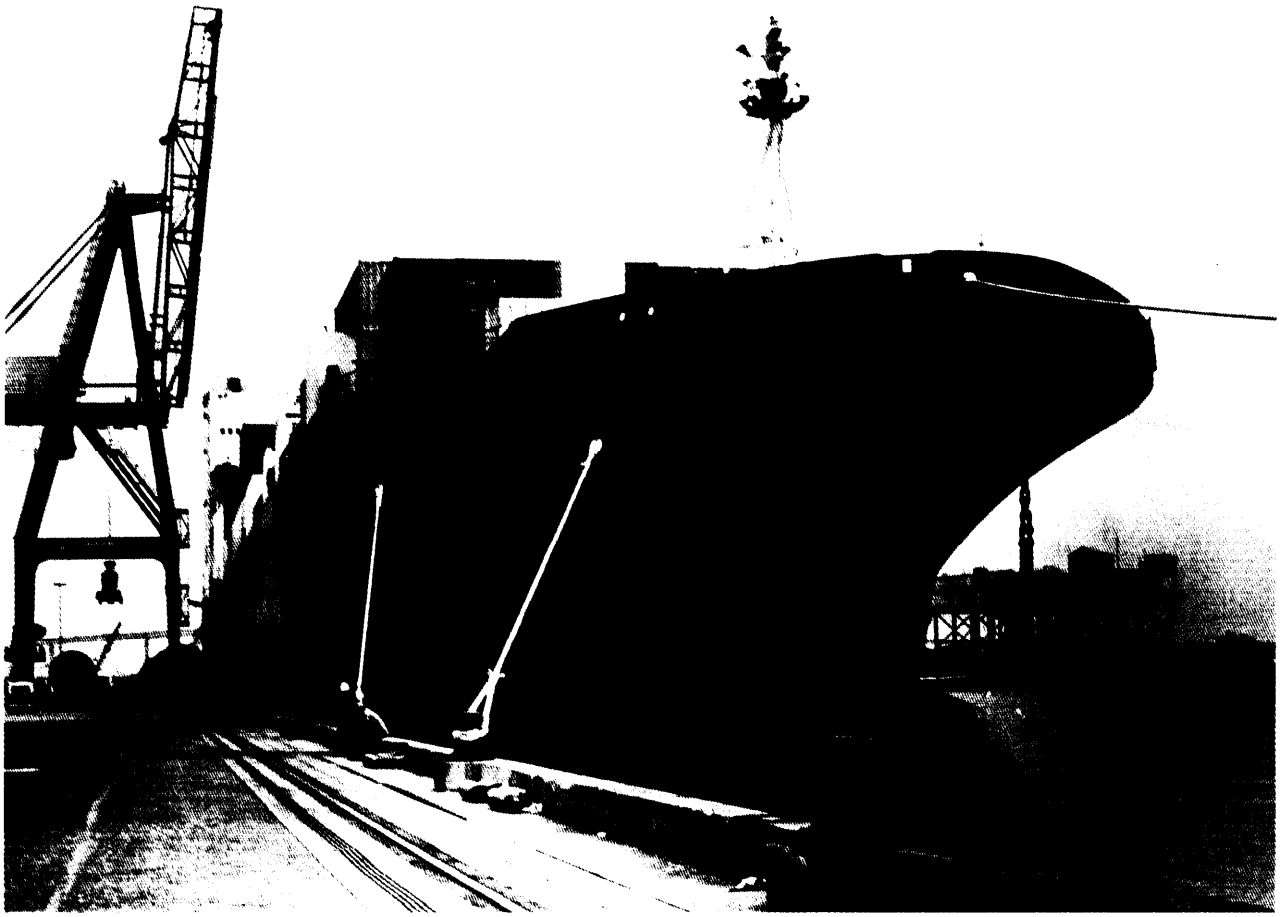


Photo credit Port of New Orleans

Foreign ship docked in New Orleans. U.S. imports of freight transportation services came to $10.8 billion in 1984.

sales by U.S. affiliates regardless of where the service is produced.1

Direct exports of services by U.S.-owned firms fit the definitions for both the ownership (i.e., foreign revenues) and balance of payments

[1]As such, the foreign revenues measure resembles the ''ownership" measure suggested in "International Services Transactions of the United States: Proposals for Improvement in Data Collection, " prepared by E.P. Lederer, W. Lederer, and R.L. Sammons for the Departments of State and Commerce and the Office of the United States Trade Representative, January 1982. However, Lederer, et al., define exports on an ownership hasis to he sales hy a U.S.-owned entity to a non- U.S.-owned entity. As discussed more fully below, the definition of foreign revenues used by OTA is based on sales by a U.S.-owned entity to a nonresident of the United States, thus combining the purely geographic and purely ownership concepts of international trade and yielding a definition more nearly consistent with the normal definition of foreign revenues that a multinational corporation would tend to employ (e. g., in its annual report).

Ideally, only the U.S. ownership share of sales by affiliates should be included in the foreign revenues measure, For example, if an overseas affiliate with non-U. S. sales of $100 million were 25 percent owned or controlled on an equity basis by a U.S. firm, the contribution to U.S. foreign revenues of that firm should be taken as $25 million. In practice, data on sales by foreign affiliates are not available on a U S.-equity-share basis, only total sales by affiliates. The extent of the distortion will vary from industry to industry. For example, in 1983 almost all of the sales by overseas affiliates in management, consulting, and public relations were accounted for by majority-owned affiliates (i.e., over 50 percent U.S. equity control), ! n this case, using total sales as a proxy for the U,S. equity share of sales is a reasonable approximation. However, for transportation and communication affiliates, only about 18 percent of total sales were by majority-owned affiliates, with the rest accounted for by firms where U.S. equity holdings ranged from 10 to 50 percent.

measures and are included in both measures, Transactions between parent firms and their foreign affiliates should be included in the balance of payments measure, but netted out when measuring foreign revenues on an ownership basis (both buyer and seller fit under the same national umbrella of ownership), Exports of services from the United States by a foreign owned or controlled U.S. firm are excluded from measures of foreign revenues on an ownership basis, but do constitute U.S. exports on a balance of payments basis, Similarly, sales of services to the United States by U.S. affiliates abroad are not included in the foreign revenues measure; such transactions are U.S. imports in a balance of payments sense, but not in an ownership sense (both buyer and seller are U. S,-owned). Thus:

U.S. exports (balance of payments basis) = export sales of all firms located in the United States, including sales to the overseas affiliates of U.S. firms and the exports of foreign-owned firms in the United States.

Foreign revenues of U.S. firms (ownership basis) = foreign sales of all U.S.-owned firms regardless of location, and therefore including both exports from the United States of U.S.-owned firms and sales to foreign entities by overseas affiliates of U.S. firms, Transactions between U.S. parent and foreign affiliate are excluded, as both buyer and seller are U. S.owned; transactions between U, S.-owned firms located overseas and unaffiliated U.S. firms are excluded for the same reason.

A parallel set of definitions holds on the import side:

U.S. imports (balance of payments basis) = sales to U.S. residents by all firms located in other countries, including the foreign affiliates of U.S. firms,

U.S. revenues of foreign firms {ownership basis) = sales to U.S. residents of all foreign-owned firms regardless of location (i. e., including both foreign-based firms and the U.S. affiliates of foreign firms). Transactions between U.S. affiliates and their foreign parents are excluded, as both buyer and seller are foreign-owned. Transactions between foreign-owned U.S. firms and unaffiliated foreign firms are likewise excluded.

Strictly speaking, a complete picture of trade in services on an ownership basis should also include purchases of services in the United States by foreign-owned firms located here, and local purchases by U, S.-owned firms abroad. Because of a nearly complete vacuum in the data on such purchases, OTA has had to omit them; however, indirect evidence indicates that they may be substantial, For example, in 1982 nonbank foreign affiliates of nonbank U.S. firms reported that their total expenses net of taxes, employee compensation, and nonoperating expenses came to $742 billion; for foreign affiliates in the United States, the corresponding total was $440 billion. These expenses reflect the cost (excluding labor) of goods sold, as well as marketing, administrative, and other indirect expenses. Some portion of these totals represents local purchases of services used in the course of operations, OTA's estimates of U.S. service exports, imports, and foreign revenues do not in any instance exceed $100 billion, even at the upper bounds of the estimated ranges, Even if local purchases of services were a small fraction of affiliate expenses, they would probably be significant relative to this amount of services trade. Unfortunately, there is no way to estimate these local purchases, even roughly,

Chapter 3

Services in the Balance of Payments

Chapter 3

Services in the Balance of Payments

FEDERAL GOVERNMENT FIGURES FOR THE U.S. BALANCE OF PAYMENTS IN SERVICES

According to official Bureau of Economic Analysis (BEA) figures, the U.S. current account deficit came to $31.9 billion in 1983 and $95.9 billion in 1984. Preliminary results for 1985 put the deficit at an estimated $102.9 bill ion,'

The current account can be divided into two components: 1) trade in goods; and 2) other, nongoods transactions, or invisibles. The invisible, portion of the current account is sometimes referred to as the "services" account, a usage that differs from the terminology adopted by OTA and one that is misleading, The reason is as follows, The invisible account includes two different types of receipts: 1) factor income (primarily returns to capital–e,g., dividends, interest income—but also returns to labor, such as the foreign wages of U.S. residents abroad); and 2] non factor income (receipts and payments for value-added services), In this report, OTA refers to the group of all nongoods transactions in the current account as the invisible account, reserving the term services for invisible transactions in which firms or people add value (by providing a service), Thus services are a subset of invisible transactions:

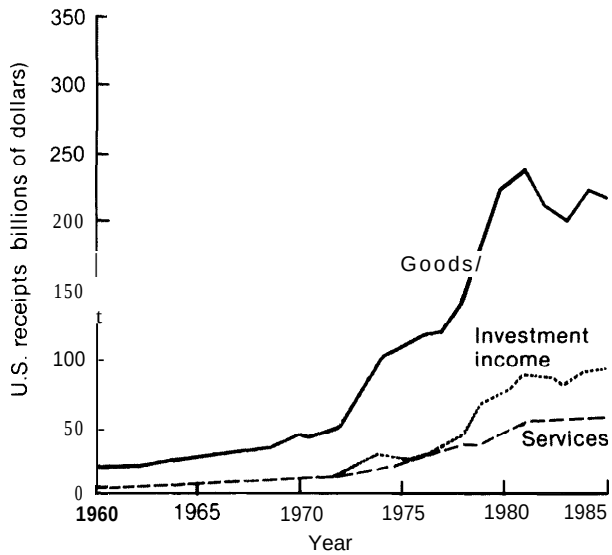
invisible receipts (mostly investment income) + (value-added service)

with a parallel definition for invisible payments.

Figures 1 and 2 present the official U.S, current account figures for receipts and payments, respectively, divided between goods and the two primary invisible categories, services and investment income. Figure 3 presents the U.S. current account balance (surplus or deficit)

[1] These figures, and all the rest of the BEA data used in this report, exclude transfers of goods and services under U, S, military grant programs. They also exclude net unilateral transfers, such as Federal Government grants and pensions, including net unilateral transfers would increase the U.S. current account deficit by $8.7 billion in 1983, $11.4 billion in 1984 and $14,8 billion (preliminary}) in 1985.

Figure I.— BEA (Bureau of Economic Analysis) Estimates of U.S. Current Account Receipts



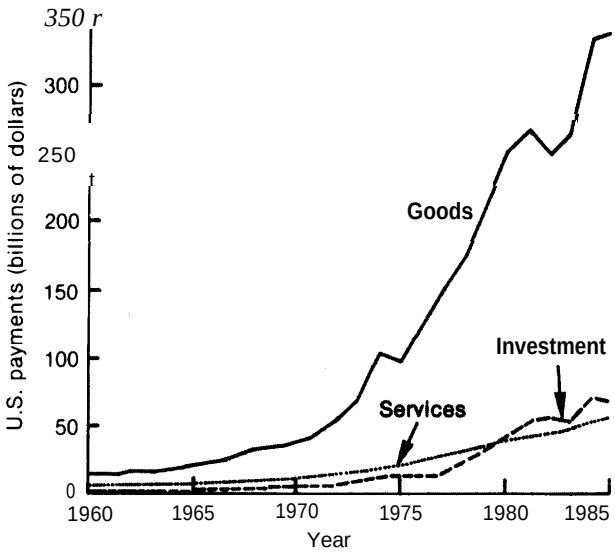
SOURCES 1960-83: R C Krueger "U S International Transact Ions First Quarter 1985, " Survey of *Current Business*, June 1985, pp 34-71 1984.85: C L Bach "U S International Transactions Fourth Quarter and Year 1985, ' *Survey of Current Business* March 1986 pp 2454

for each of these items. The deficit on goods reached $114.1 billion in 1984, and an estimated $124.3 billion in 1985, As figure 3 shows, the United States last ran a surplus in the goods account in 1975.

Figure 3 also presents the balance on investment income, the single largest component of invisible transactions. As the figure shows, the United States has consistently realized a substantial surplus on income from foreign direct investment (FDI), although the magnitude of the surplus has declined in recent years from a peak of $34,1 billion in 1981 to $19.1 billion in 1984; preliminary figures for 1985 put the investment income surplus at $24.7 billion.

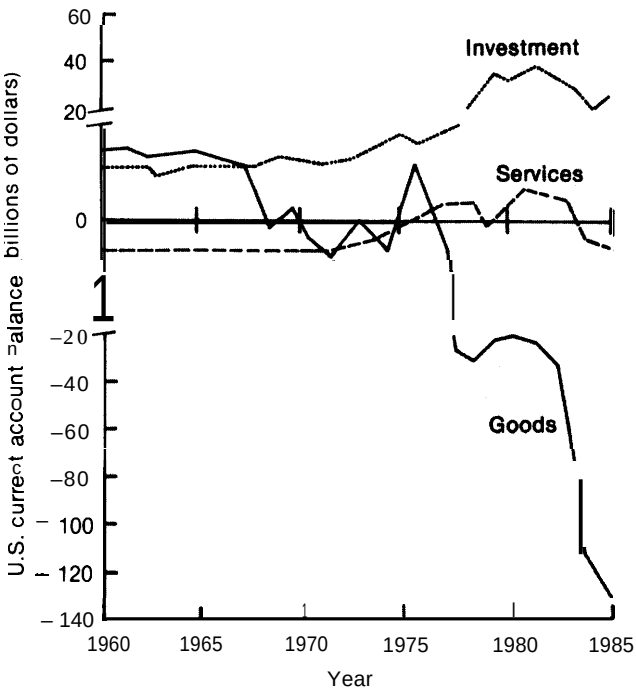
The final major component in the current account consists of receipts and payments—or ex-

Figure 2.—BEA (Bureau of Economic Analysis) Estimates of U.S. Current Account Payments



SOURCES: 1960.83: R.C Krueger, "U.S International Transactions, First Quarter 1985," Survey *of Current Business,* June 1985, pp. 34-71 1984.85: C L. Bach, "U S. International Transactlons, Fourth Quarter and Year 1985," Survey *of Current* Business, March 1988, pp. 24-54

Figure 3.—BEA (Bureau of Economic Analysis) Estimates of U.S. Current Account Balance



SOURCES: 1960-83: R.C Krueger, "U.S International Transactions, First Quarter 1985, " *Survey of* Current *Business,* June 1985, pp. 34-71 1984-85: C L Bach, "U.S. International Transactions, Fourth Quarter and Year 1985, " *Survey of Current Business,* March 1988, pp 24-54

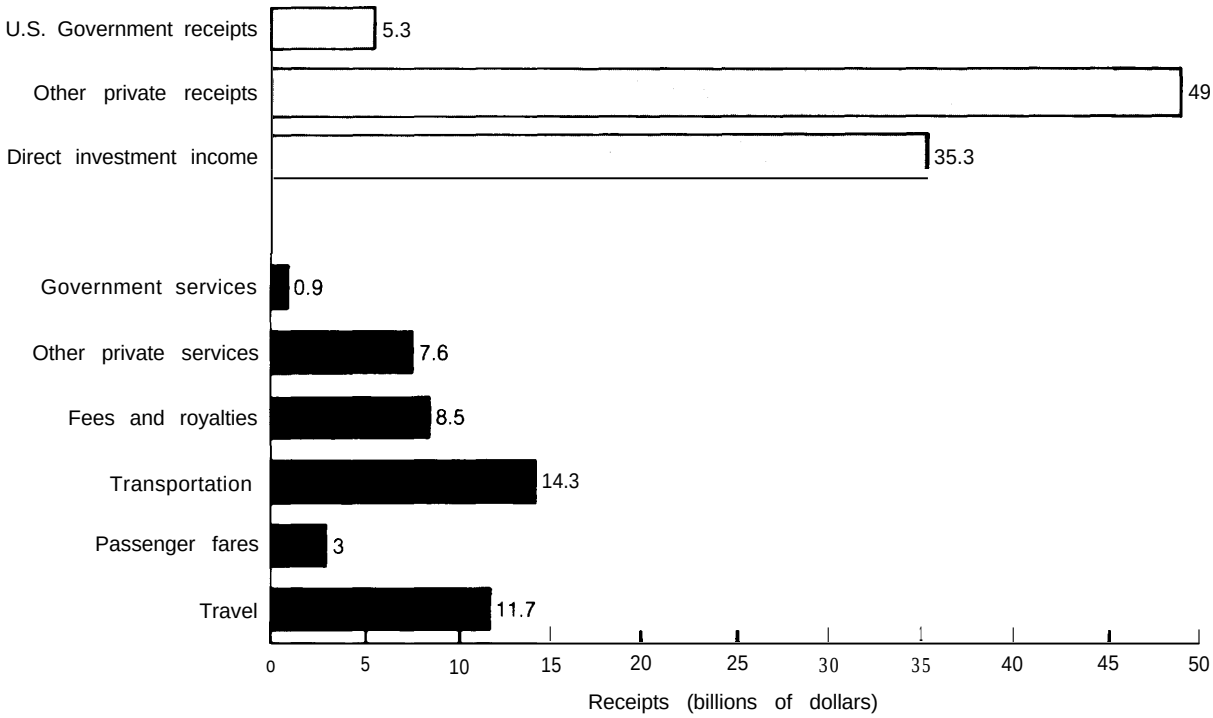
ports and imports—for value-added services. As figure 3 indicates, official estimates for the service account show a consistent deficit position from 1960 to 1974, followed by a fairly rapid shift to a surplus of over $7 billion in 1981 and 1982. BEA's totals show a declining surplus since then, shifting to the deficit side in 1985—an excess of imports over exports of $1.2 billion, according to the preliminary figures—the first deficit since 1974. (OTA's estimates, presented in ch. 4, result in larger surpluses.)

Figures 4 and 5 present greater detail on invisible transactions in the official current account statistics. As figure 4 indicates, the largest contributors to U.S. invisible receipts in 1985 were not service exports but rather nonservice invisible transactions generating investment income, The category "other private receipts, " consisting primarily of U.S. portfolio investment abroad and bank income on foreign assets, made up the largest component of invisible receipts in 1985 at $49,9 billion. Income resulting from U.S. FDI contributed $35.3 billion to invisible receipts, while U.S. Government receipts on assets abroad added $5.3 billion (including interest on loans to developing countries). Combined, these three nonservice invisible categories accounted for nearly two-thirds of all invisible receipts in the official balance of payments.

According to BEA's figures, service transactions as a whole contributed $46.0 billion to invisible receipts in 1985, Transportation services were the single largest component at $14.3 billion, followed by exports of travel services (i.e., travel expenditures in the United States by visitors from overseas) at $11.7 billion, Fees and royalties added $8.5 billion, while the category "receipts for other private services, " including business services, generated $7.6 billion,

As figure 5 shows, the pattern for invisibles was similar on the import (payments) side. Combined, the three nonservice invisible categories totaled $65.8 billion, or 58 percent of all invisible payments. Services came to $47.2 billion,

Figure 4.— BEA (Bureau of Economic Analysis) Estimates of U.S. Invisible Receipts, 1985 (preliminary)



SOURCE C L Bach, ''U S International Transactions, Fourth Quarter and Year 1985, " Survey *of Current Business,* March 1986, pp 24.54

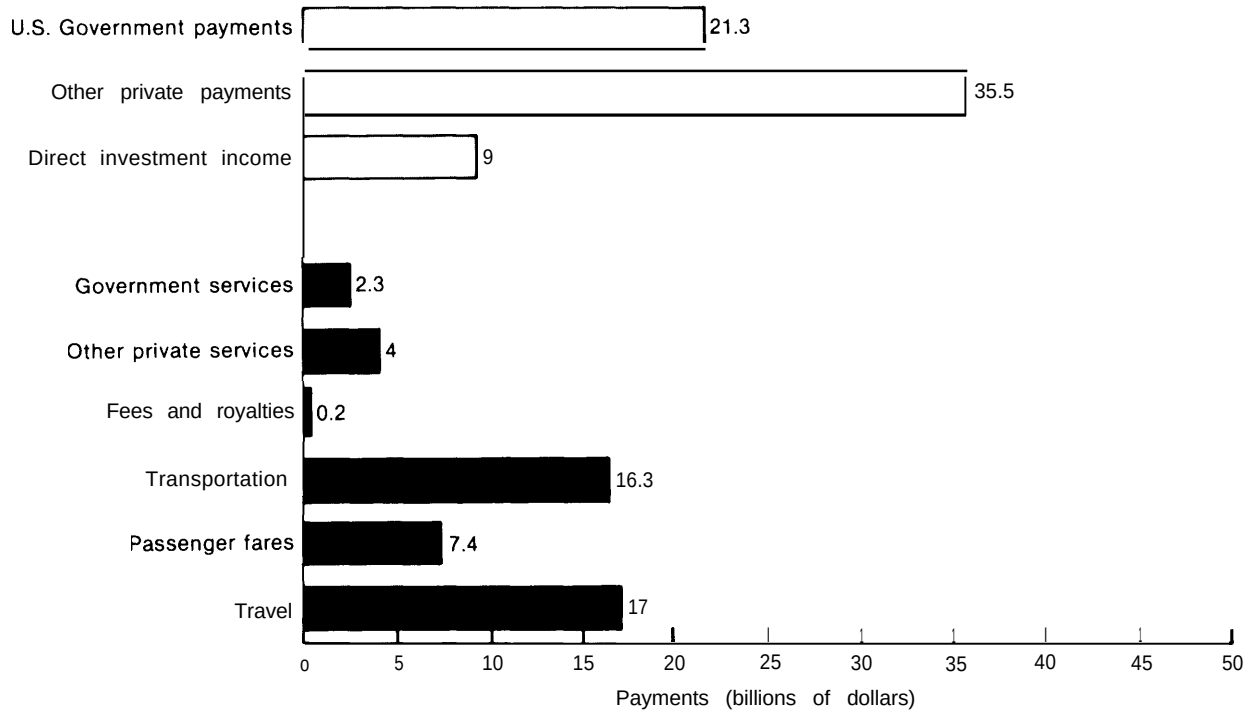
with travel ($17. o billion) and transportation ($16.3 billion) the largest components.

The official figures show that trade in services and other international invisible transactions have a substantial impact on the U.S. balance of payments. However, OTA's analysis indicates that estimates of U.S. invisibles transactions, and particularly exports and imports of services, are subject to much greater errors than estimates for trade in goods, Thus the BEA figures summarized above are not a very accurate reflection of the actual level of U.S. trade in invisibles, particularly services. As discussed in the next section, most of the errors in the current account reflect *underestimates* of service transactions, with both exports and imports likely to be underreported. Chapter 4 presents OTA's estimates of the impact of services on the balance of payments, constructed by supplementing Federal Government data with information from other sources.

FEDERAL GOVERNMENT PROCEDURES FOR MEASURING SERVICES AND INVESTMENT IN THE BALANCE OF PAYMENTS

BEA, part of the Department of Commerce, collects most U.S. data on invisibles trade, and is responsible for all the reporting on invisibles that appears in the U.S. balance of payments, The Bureau collects this data primarily by surveying participants in international services transactions (exports and imports of services) and by surveys of international direct investment activities of both U.S. firms and the American affiliates of foreign firms,

Figure 5.—BEA (Bureau of Economic Analysis) Estimates of U.S. Invisible Payments, 1985 (preliminary)



SOURCE" C.LBach, "U. S International Transactions, Fourth Quarter and Year 1985, " *Survey of Current Business,* March 1988, pp. 24-54.

Quarterly articles in the *Survey of Current Business,* published by BEA, summarize U.S. international transactions, presenting data on receipts and payments for private invisibles transactions in six major service categories (travel, passenger fares, transportation, affiliated and unaffiliated fees and royalties, and other private services) and three investment income categories (direct investment, other private payments and receipts, and U.S. Government payments and receipts). The tabulations also include a category for miscellaneous government service transactions.

In addition, BEA publishes periodic articles in the *Survey* covering specific components of the invisibles account—e.g., an annual review on travel and passenger fares. These provide data in considerably more detail than the quarterly summaries. The Bureau also publishes occasional articles summarizing definitions, changes in measurement techniques, and other points of methodology,

In November of 1981, BEA published data on invisibles transactions over time at the maximum level of available detail.2 Updates through 1984 of most of the tables presented in that article are available from the Bureau. Table 2 summarizes the categories used under current methods of data collection and estimation, Geographic detail is also available by region and by selected individual countries for several of the categories listed.

While BEA's summary figures provide useful indicators of the order of magnitude and distribution of international service transactions, the official data on invisibles trade contain a variety of omissions and misclassifications, many of which have been previously identified by BEA. These deficiencies stem primarily from the origins of the invisibles ac-

'A, J, DiLullo, "Service Transactions in the U.S. International Accounts, 1970-1980, " *Survey of Current Business,* November 1981, pp. 29-46.

Table 2.—Categories for Invisible Transactions in the U.S. Current Account

Travel
- Overseas travel
- Canada and Mexico

Passenger fares

Transportation
- Ocean freight
- Air freight
- Other freight
- Ocean port services
- Air port services
- Other port services
- Other transportation

Fees and royalties
- Affiliated royalties and license fees (by industry group)
- Other affiliated fees and royalties
- Unaffiliated fees and royalties (by industry group)

Private miscellaneous receipts and payments
- Contractors' fees (net receipts only)
- Reinsurance
- Communications
- Foreign governments/international organizations
- Canadian affiliate trade unions
- Temporary resident wages and expenditures
- Film rentals
- Commissions (receipts only)
- Other private miscellaneous services

Investment Income
- Direct investment income (by industry group)
- Other private receipts and payments
- U.S, Government receipts and payments

U.S. Government transactions
- Defense agencies
- Other U.S. Government agencies

SOURCE Service *Transactions in the U S International Accounts, 1977.1983* (Washington, DC U S Department of Commerce, Bureau of Economic Analysis, no date)

count, which was at first intended simply as a home for residual transactions in the balance of payments—i.e., for entries other than imports and exports of goods; the data collection and reporting system was not designed to provide detailed information by sector and type of transaction, An additional and inherent difficulty is that, unlike tangible goods, Customs receipts cannot be used to measure the volume of invisible trade; surveys of firms and individuals participating in international invisible transactions must be undertaken.

Sources of errors and omissions in the official data include:

- *Lack of* Detail,—The government collects and presents data on merchandise trade for roughly 10,000 categories of goods. By comparison, the invisibles account can be disaggregated into about 40 categories at most, and data are typically published at higher levels of aggregation. This lack of detail results in part from the historical lack of interest in invisibles relative to goods. It also reflects the intrinsic problems of measuring many types of service and investment transactions.
- *Incomplete* Coverage .—The service account in the balance of payments omits many service transactions that take place in non-service industries (for example, financing provided by a manufacturing firm, or software sold by a computer hardware firm). Also, some of the survey forms for gathering data on service transactions are voluntary, which generally means poor response rates and incomplete coverage. Finally, comprehensive surveys are impractical or impossible for some types of transactions—e.g., foreign holdings of private portfolio investment by Americans, or the U.S. portfolio holdings of foreigners.
- *Valuation* .—For some kinds of service transactions, assigning values or prices poses vexing problems, Many services are sold bundled with goods—that is, a single price is charged for a bundle of goods and services. In such cases, the value of the service export or import generally appears in the merchandise portion of the trade accounts. Common examples include maintenance or training provided along with the sale of equipment. (Similar problems, of course, exist within the goods account; no figures exist for steel or tires that enter the United States as part of automobile shipments from Japan.) Furthermore, many services—e.g., research and development—are provided by U.S. parent firms to their overseas affiliates (or by foreign parents to U.S. affiliates). In such cases, the value assigned to the service may be more a function of bookkeeping or tax considerations than the cost to the company of providing the service or the value added that it represents; this is also true of licensing fees charged to affiliates.



Photo credit National Aeronautics *and* Space *Administration*

Satellite receiving antenna for instructional television in India.

- Classification.—Somewhat analogous to the bundling problem, factor income and nonfactor income are in some cases mingled in the same account. When this occurs, service transactions cannot be separated from investment income. In addition, transactions involving many of the service industries appear in several different accounts, making analysis of the total international transactions of the industry difficult. The invisibles account classifies some payments and receipts by type of activity (regardless of the industry classification of the firm) and some by primary industry of firm (regardless of activity). For example, international banking transactions appear in three accounts: direct investment income, other private receipts and payments, and fees and royalties. As another example, the software exports of a computer hardware manufacturer might appear in the goods account (bundled with hardware exports) or in the invisible account as a service, a fee, or a royalty; many software exports escape the balance of payments accounts entirely.

Given these difficulties, along with the upsurge of interest in services, BEA has sought to improve data collection by broadening coverage, increasing the level of detail, and developing more accurate methods for estimating trade and investment flows. Table 3 summarizes the deficiencies in the database for the major BEA categories of invisible transactions, noting those likely to have the greatest impacts on BEA's balance of payments figures, The table also indicates where BEA is taking steps to improve the quality of data. The remainder of this chapter expands on the summary in table 3, taking the invisible account by category and including a discussion of BEA methodology, weaknesses in the database, and steps planned or already taken for improving the data collection and estimation process, Federal Government service and investment transactions have been excluded from the discussion below; not only are they relatively small, but the data should be more reliable than for private transactions.[3]

Travel

This account measures expenditures (excluding passenger fares) of U.S. residents traveling abroad (travel imports) and of foreign residents traveling in the United States (travel exports). BEA collects data through survey forms distributed by the Customs Service at selected U.S. ports of entry and exit,

In theory, the survey population represents all travelers; in practice, sampling has suffered from very low response rates (the actual response rate cannot be calculated because BEA does not know precisely the number of surveys distributed). A second methodological problem arises because the entry/exit ports surveyed have not been chosen at random, but in part for the convenience of the Customs Service.

In addition to the entry/exit surveys, the U.S. Travel and Tourism Administration (USTTA), part of the Commerce Department, administers its own in-flight surveys. While not used in the official balance of payments, these surveys pro-

[3]Much of the rest of this chapter draws on discussions with BEA staff members, as well as a BEA staff paper summarizing the data collection process—O.G. Whichard, "U.S. International Trade and Investment in Services: Data Needs and Availability, " Department of Commerce, Bureau of Economic Analysis Staff Paper 41, Washington, DC, September 1984.

Table 3.—Summary of Deficiencies in BEA Database on Invisible Transactions

Type of problem	Travel	Passenger fares	Transport	Affiliated fees and royalties	Unaffiliated fees and royalties	Miscellaneous private services	Other direct private transactions	investment data
Voluntary survey/low response rate . .	Voluntary "mail-i n" response [a b]		Low response for U.S freighters [a]			Low response on technical servlces [a]		
Surveys old or out of date		1975 survey for ocean passengers					Portfolio Income estimated from 1942 benchmark	
Other methodological problems	Nonrandom survey distribution [b]					Survey BE-47 voluntary [b]		No annual outbound data before 1982
Inherent problems in asslgnlng value to t r a n s a c t i o n s			Trucking cannot be measured	Values reflect bookkeeping considerations	Exchanges not assigned values			Inherent problem In affiliated transactions
Highly aggregate data presentation				Estimated on net basis[b]	LImIted detail by Industry or country	Poor data quality prevents dlsaggregatlon	Poor data quallty prevents dlsaggregatlon	
Gaps In coverage.			Land freight (trucking)		Exchanges	Many services not covered'	Individual portfolios, bank fees[a]	Minority affIIlates, service purchases
Commingling of distinct items	Land travelers' passenger fares included	Port services included in transport account				Several distinct services combined	Lumping of bank services with investment earnings	

[a]May have significant balance-of-payments ramifications.
[b]BEA taking steps to improve data.

SOURCE Office of Technology Assessment

vide independent estimates for the overseas expenditures of Americans traveling abroad and of visitors to the United States. Only airline passengers get these survey forms, Results from USTTA surveys have indicated a higher level of per-traveler expenditures than do the Customs/BEA surveys (thus a higher level of trade in travel services).

BEA and USTTA have begun to plan coordinated travel surveys intended to eliminate duplication and produce more accurate estimates. BEA has agreed in principle to use USTTA data for estimating travel expenditures by foreign visitors, with the decision on which source to use for information on U.S. expenditures abroad pending as of mid-1986. Neither survey provides data for estimating travel expenditures broken down by purpose of trip (business, pleasure, education, health, etc.); there is no standard way of apportioning costs on multipurpose trips, which represent a large fraction of international travel.

Passenger Fares

Exports in this account include receipts by U.S. carriers from foreign residents traveling to or from the United States. When an American carrier transports a foreigner between two foreign points, an export is also registered. Imports consist of payments by U.S. residents to foreign carriers. By convention, and according to the guidelines of the International Monetary Fund (which collates trade data on services from more than 120 countries), receipts of U.S. carriers for foreign travel by U.S. residents are treated as purely domestic transactions; these do not appear in the balance of payments, nor do receipts of foreign carriers from foreign residents traveling to or from the United States,

Passenger fares exists as a category separate from other travel-related receipts and payments because the nationalities of the carrier and the passenger together determine whether a fare transaction affects the balance of payments, For example, when a U.S. citizen flies to Europe on a U.S. airline, the fare payment is a purely domestic transaction. Once in Europe, however, the traveler's expenditures would belong in the travel account as a balance of payments item,

The shortcomings in the passenger fares account are primarily the result of outdated benchmark surveys and problematic classification procedures, Import estimates for ocean passenger fares—i.e., payments by U.S. passengers to foreign carriers—are based on extrapolations of a survey conducted by the Immigration and Naturalization Service which was discontinued in 1975 (this may not be a major source of error; extrapolated 1984 payments came to only a little more than $300 million). In other cases, data belonging conceptually in the passenger fares account have been classified elsewhere, For example, fare expenditures for land travel between the United States and Mexico or Canada are included in the travel account and cannot be estimated separately or combined with other passenger fares. Similarly, some portion of port services expenditures reported in the transportation account (described below) results from passenger travel.[4] Geographic detail in the passenger fares account is available for 10 world regions but not by individual country.

Transportation

BEA measures international transportation transactions through surveys, now mandatory, of U.S. air and ocean carriers' foreign earnings (surveys BE-37 and BE-30, respectively), along with U.S. operations of foreign air and ocean carriers (surveys BE-36 and BE-29). The air carrier surveys include questions on both passenger traffic and freight shipping, The Bureau uses this passenger traffic data in compiling the passenger fares account discussed above, although not as the primary source of information on such fares.

[4]Ideally, these payments should appear in the passenger fares account; in practice, this separation is not possible. One problem is that many carriers, particularly air carriers, move both passengers and freight. Many port services costs for these firms are fixed and thus cannot easily be allocated between passenger and freight transportation. Even in those cases where costs could be allocated, BEA does not request a breakdown between freight and passenger expenditures for port services, and few firms probably keep such records.

Response rates on the mandatory surveys of foreign carriers operating in the United States have been good. The surveys of U.S. carriers remained voluntary until 1986, For these voluntary surveys, response rates had been acceptable for air carriers but poor for ocean carriers, particularly tankers (a problem partially offset when BEA gained access to Census Bureau data on ocean freight billings).

Shipping by truck between the U.S. and Canada or Mexico does not appear in the transportation balance of payments. As BEA points out, even if complete data were available, it would be necessary to subdivide expenditures, with travel up to the border of the exporting country belonging in the merchandise trade account (thus appearing as a service bundled with trade in goods), and travel in the importing country belonging in the transportation account.

Fees and Royalties

Fees and royalties are classed in two categories: *affiliated* transactions, which occur between U.S. parent firms and their foreign affiliates, or between foreign firms and their U.S. affiliates; and *unaffiliated* transactions, those between firms without direct ownership or investment ties (or with ties amounting to less than 10 percent of equity, the dividing line adopted by the U.S. Government for distinguishing portfolio investment from FDI).

Affiliated Fees and Royalties

Direct investment can be of two types: *outbound,* in which an investment relationship exists between a U.S. parent firm (or individual or group) and a foreign affiliate; and *inbound,* in which a foreign firm or individual invests in a business located in the United States. BEA estimates inbound and outbound transactions on a quarterly basis from sample data reported on mandatory forms BE-577 (Direct Transactions of U.S. Reporter with Foreign Affiliate) and BE-605 (Transactions of U.S. Affiliate with Foreign Parent). These surveys sample gross receipts and payments in three categories: 1) royalties, license fees, and other fees for the use or sale of intangible property; 2) charges for the use of tangible property (including film and TV rentals); and 3) allocated expenses (such as R&D assessments) and reimbursements for management, professional, technical, or other services. The universe from which sampling occurs is determined from periodic inbound and outbound benchmark surveys, which also provide independent data on affiliated fees and royalties (these surveys are discussed in detail in the section, “Direct Investment Data” below).

The affiliated fee and royalty data have little real meaning because the prices attached to such transactions must be regarded as bookkeeping values. They cannot be assumed to correspond with market values—i. e., with prices that would hold in arms-length transactions. Because there is no practical way of establishing market valuations, balance of payments figures for transactions between parents and affiliates are seldom useful for analytical purposes.

Beyond this, BEA for many years presented its worldwide totals and geographic subtotals for affiliated royalties and fees on a net rather than a gross basis. Thus published values for affiliated receipts actually represented receipts of U.S. firms minus their payments to affiliates; similarly, the value published for payments of affiliated fees represented payments by U.S. affiliates to foreign parents net of receipts from foreign parents. Companies report receipts and payments separately, but the Bureau subtracted receipts from payments before expanding the sample to generate an estimate for the universe of firms. Until recently, receipts by U.S. parent firms were much larger than payments to affiliates, so that there was relatively little difference between the figures for net and gross receipts. This is no longer true; in recent years, affiliated payments have grown relative to receipts.

BEA is now converting its estimating procedures to a gross basis for affiliated fees and royalties. As of June 1984, the Bureau has estimated inbound data on a gross basis. BEA is also preparing new estimates of gross inbound receipts and payments back to 1980. At present, outbound data is available on a gross basis only

for benchmark years (most recently, 1982); yearly gross estimates (and quarterly estimates not disaggregated by industry or country) will be available following benchmarking to the recently released 1982 benchmark survey of outbound FDI.

Unaffiliated Fees and Royalties

A mandatory annual survey on unaffiliated fee and royalty transactions (form BE-93, International Transactions in Royalties, Licensing Fees, Management Fees, etc. with Unaffiliated Foreign Residents) covers receipts and payments by country of transaction. Here the pricing problem of affiliated transactions is not a concern, given the assumption, which should normally be valid, that charges will reflect arms-Iength valuations when equity ties are no more than 10 percent. The primary limitation in BEA's coverage of unaffiliated transactions arises from the exclusion of "reciprocal exchange(s) of intangible assets or rights where no monetary or in kind compensation is paid. " This means, for example, that technology exchange agreements between unaffiliated firms will not be reported unless prices are explicitly negotiated as part of the deal (table 2). There is a further shortcoming, particularly troublesome for analysis based on this data series: no distinctions are made between new license payments and those under ongoing multi-year agreements, While this has no effect on the balance of payments, it does make it impossible to identify changes in the volume and value of licensing on a year-by-year basis.

Other Private Services

Major contributors to this category include contractors' fees, reinsurance, communications, and expenditures by foreign governments and international organizations. The account also contains a number of smaller items—wages and expenditures of U.S. residents working abroad and foreign residents working in the United States; film and videotape rentals between unaffiliated parties; consular fees; miscellaneous commissions—while omitting many business services that belong conceptually. The omissions include accounting, advertising, and direct insurance; other intermediate and business services are significantly underreported, Some services have been left out of the surveys because they were originally judged to be of negligible importance, or because they have only recently become significant internationally; in other cases, surveys have been voluntary, with very low response rates,

Several survey forms contribute to the data BEA reports under this category. BE-47, for instance—which collects information on overseas contracts of U.S. firms—is intended to cover a broad range of technical and business services. The survey was voluntary until April 1986, with few firms outside the architecture, engineering, and construction (AEC) industry responding, Since the survey became mandatory, it has been restricted to AEC firms, and to those engaged in a few other technical activities, such as mining services. Moreover, the form covers exports but not imports; the latter will be reflected only if the reporting firm nets out overseas expenditures associated with a contract. Form BE-48, Reinsurance Transactions with Insurance Companies Resident Abroad, illustrates another of the omissions in this category. The form covers premiums and losses on reinsurance only —i.e., insured risks passed along to third parties, There are no surveys of direct international insurance trans-



Photo credit Bechtel Power Corp

Computer-aided drafting for construction project in Papua New Guinea

actions, which go unreported in the balance of payments.

Because major gaps exist in BEA's coverage of the "other services' account, the agency recently proposed a new mandatory benchmark survey of unaffiliated transactions, BE-2o, to be followed by yearly sample surveys. BE-2o would replace existing surveys for fees and royalties, franchising fees, reinsurance, and technical services. In addition, the survey would cover a number of service transactions, some representing substantial revenue flows, on which the Federal Government currently collects no data: direct insurance; advertising; computer and data processing services; database and other information services; telecommunication services; performing arts, sports, and other live performances, presentations, and events. As proposed, BE-20 would also include a category of selected miscellaneous services, only a few covered previously: research and development; management services; consulting; public relations; accounting, auditing, and bookkeeping; agricultural services; legal services; education and training; mailing, reproduction and commercial art; health care management; employment services; industrial engineering; maintenance and repair services; installation, startup and training in connection with sales of goods; and construction, engineering, architectural, and mining services (purchases only).

Late in 1985, the Office of Management and Budget (OMB) rejected the proposed BE-2o survey. OMB called it "unreasonably burdensome" for reasons including a format said to be nonstandard and complicated, instructions that OMB asserted were difficult to interpret, and failure by BEA to pre-test the reporting forms. According to OMB, the Commerce Department had also underestimated the costs to firms of responding. A revised survey may or may not be approved at some later date; in any event, no survey before 1987 at the earliest (i. e., covering 1986 data) would, as of this writing, be possible,

Other Private Receipts and Payments

This account includes three types of items:

1. receipts and payments of bank income, including interest on short- and long-term loans, deposits, and other claims (but excluding direct investment income);
2. receipts of fees for bank services provided to foreign customers; and
3. earnings on foreign portfolio investments (i.e., security holdings amounting to less than 10 percent of a firm's outstanding equity).

BEA constructs estimates for all three, basing interest payment figures, for example, on prevailing interest rates together with estimates of U.S. holdings of foreign assets and foreign holdings of U.S. assets; the overall revenue figure will therefore only be as accurate as the underlying holdings data and BEA's information on prevailing yields.

A major shortcoming of this account is that it commingles nonfactor income (e. g., fees earned by banks) with factor income (e. g., returns to U.S. holders of foreign portfolio investments). This is a fundamental conceptual problem; the value-added services provided by U.S. banks should be viewed quite differently than investment earnings.

In addition to the commingling problem, a number of transactions that belong conceptually in this account are either missing or underreported. Examples include:

- *Fees Earned by Banks for* Services.-In addition to commingling of bank fee income (as collected by the Federal Reserve Board) with various types of factor income, BEA lacks a basis for estimating some types of bank fee income–e.g., charges for providing guarantees,
- *Bank Earnings on Foreign Exchange Dealings.*—Here, the gap in coverage appears to be a minor one, While there is little information on the size of unreported bank earnings from these transactions, most foreign exchange transactions by U.S. banks

are either purely domestic in a balance of payments sense (matching U.S. buyers and U.S. sellers) or purely foreign (i.e., between foreign customers and U.S. banks' foreign offices). As such, these transactions are not cross-border and should not appear in the balance of payments.

- private *Broker* Transactions .—Because it is difficult to gage the portfolio transactions of private parties, BEA has little information on the extent to which such transactions—purchase and sale of foreign securities by U.S. holders, and of U.S. securities by foreign holders—may be under- or overestimated. Commissions and fees earned by brokerage firms on such transactions may or may not be balance of payments items, depending on whether broker and client are residents of the same country. Such commissions and fees should appear in the "other private services" category, but in practice they go essentially unreported. In a 1978 benchmark survey of U.S. issuers of debt and equity instruments, the Treasury Department estimated U.S. portfolio investment holdings by foreigners. This benchmark greatly improved the accuracy of the portfolio account on the inbound side (in terms of earnings on investment, not brokerage commissions), but no similar benchmarking has been undertaken for U.S. holdings of foreign portfolio investments. Not only do a very large number of individuals hold such investments, but the U.S. Government also lacks the authority to survey foreign issuers.[5] Private portfolio earnings are currently extrapolated from a 1942 survey.

Direct Investment Data

The Federal Government gathers considerable data on the operating activities and financial status of firms and individuals with direct investments overseas. The FDI category in the current account measures receipts associated with outbound investment (U.S. firms or individuals with direct investments abroad) and payments associated with inbound investment (foreign firms or individuals with investments in the United States). BEA estimates receipts through quarterly sampling of the universe of firms and individuals known to hold such investments, and payments from quarterly samples of the universe of U.S. firms known to be affiliates of foreign investors. In addition, benchmark surveys of the universe of firms and annual sample surveys based on benchmark results provide more detailed financial and operating information. In general, BEA has good balance of payments data on FDI income and payments, certainly in comparison with many of the service categories described above.

BEA surveys direct investment activities in three ways:

1. *Quarterly surveys* of affiliated transactions which impact the balance of payments (income, capital, and fees and royalties—surveys BE-577 and BE-605),
2. *Benchmark surveys* of direct investment (both outbound and inbound), conducted periodically to identify the universe of FDI relationships for quarterly sampling. These surveys also gather basic financial and operating data from affiliates and parent firms. Outbound benchmark surveys at varying levels of detail were conducted in 1950, 1957, 1966, 1977, and 1982; under current authorization, they will continue at 5-year intervals. The last inbound benchmark survey took place in 1980, BEA will wait until 1987 to conduct the next inbound benchmark, collecting inbound and outbound benchmark data concurrently beginning in that year.
3. *Annual sample surveys* consisting of less detailed versions of the benchmark surveys. These are now in place for both inbound (since 1977) and outbound (since 1983) direct investment, sampling from the population of firms identified through the benchmarks.

For the benchmark and annual FDI surveys, BEA collects data for 40 service industry sec-

[5] Treasury Department feasibility study indicated that a full benchmarking survey (covering the universe of investors) would be prohibitively expensive, although a survey of selected banks, brokerage houses, and insurance companies might help improve the accuracy of this account. See Whichard, op. cit., p. 39.

tors (including construction as a service) and 91 goods-producing sectors (including wholesale trade as a goods sector), Twelve new service classifications were added in the 1982 outbound benchmark; in addition, insurance was subdivided into three subcategories (life, accident and health, and other)."

Major shortcomings in the direct investment data include:

- *Coverage* Gaps.—While inbound data are available on a yearly basis beginning with 1977, there were no annual outbound surveys during the period 1978-81; BEA lacked the authority for such surveys prior to 1982.

  Lack of information on minority-owned affiliates (from 10 to 50 percent ownership) restricts the usefulness of the outbound surveys. All U.S. firms responding to both annual and benchmark surveys must provide information on service transactions with affiliates. If the affiliate is majority-owned, BEA requires a detailed statement of financial and operating information, including service transactions with unaffiliated U.S. parties, but the Bureau's experience has been that many U.S. parents holding a minority interest in foreign affiliates cannot provide such information. Since the affiliates are foreign companies, BEA has no authority to question them directly, This creates more serious problems for some sectors than others. In 1982, for example, majority-owned firms accounted for nearly all of the $1.8 billion in sales by U.S. affiliates in management, consulting, and public relations. However, minority-owned affiliates registered more than $1.0 billion of the $1.1 billion in sales by air transport affiliates that year. For the inbound surveys, the affiliates are American firms; these companies can be required to answer, and BEA asks the same questions of majority- and minority-owned affiliates.

- *Classification.* —The benchmark F D I surveys measure sales revenues of affiliates by industry of affiliate (defined as the industry of the affiliate's primary activity) and by industry of sales. For example, 1982 sales by foreign affiliates classified in the business services industry came to $10.4 billion, including sales in categories other than business services. Total sales of business services by all firms—including those in other industry categories—came to $16.8 billion. Thus at least $6.4 billion in business services represents revenues of firms whose primary activity fell into some other industry category (and perhaps more than $6.4 billion, since some unknown portion of the $10.4 billion in sales by business service industry firms would have been non-business-service sales).

  The outbound and inbound benchmark surveys and the outbound annual survey present sales data classified by industry of affiliate and by industry of sales; the inbound annual survey does not. Beginning with the 1982 outbound benchmark and the 1983 inbound and outbound sample surveys, total sales of goods and services have been reported separately, broken down by industry of affiliate. But while service sales by firms not classified in a service industry category are reported, as are goods sales of service industry firms, the type of service provided is not identified.

  An additional classification problem arises for inbound FDI, because the overseas parent may not be in the same industrial sector as the "ultimate beneficial owner" (UBO). An affiliate's foreign parent is defined as the firm one step up the ownership chain, while the UBO is at the top of the chain. Just as the industries of the parent and the UBO may differ, so may the countries in which parent and UBO are incorporated. The foreign parent of a U.S. affiliate, for example, might in turn be controlled by a UBO based in the United States. BEA typically has published some data from the inbound surveys by industry or country of parent, some by industry or country of UBO, and other data disaggregate by both parent and UBO. In the

[6] The 12 new c I assifications are: metal m i n i n g services: travel agents; franchising; R&D and commercial testing laboratories; management, consult ing, and public relations; employment services; computer and data processing services; automotive rental and leas ing; equipment rental and leasing (excluding automotive and computer): health services; legal services; and educational services.

future, the Bureau plans to emphasize data disaggregated by UBO.

- *Purchases of* Services .—While BEA gathers data on the purchases by affiliates of services from parent firms, no reporting has been required on affiliates' purchases of services from unaffiliated parties. BEA considered adding such questions to the 1982 outbound benchmark, but decided to gain experience with affiliates' sales of services before surveying purchases.[7] Also, firms have indicated in consultations with BEA that such data would in many cases be difficult to supply using current bookkeeping procedures.

[7] 1bid,, p. 42.

Chapter 4

OTA Estimates of International Service Activity

Chapter 4

OTA Estimates of International Service Activity

Given the sources of error in the Federal Government's data on services, OTA undertook an independent estimate of impacts on the balance of payments. This chapter summarizes the aggregated results based on both the geographic (balance of payments) and ownership (foreign revenues) definitions for service activity given in chapter 2. Chapter 5 presents detailed estimates on a sector-by-sector basis,

OTA's figures were compiled using the best availIable data from sources including:

- reports and surveys of the Department of Commerce (Bureau of Economic Analysis, the Census Bureau, the International Trade Administration, the Travel and Tourism Administration, and the National Telecommunications and Information Administration);
- BEA's inbound and outbound surveys of foreign direct investment (FDI];
- reports and surveys by other government agencies [the Federal Reserve Board, the Departments of Transportation, Education, Labor, and Treasury, the International Trade Commission, the Federal Communications Commission);
- company annual reports and 1O-K data reported to the Securities and Exchange Commission;
- previous reports of the Office of Technology Assessment;
- reports and articles in the general and business press (e.g., *Wall Street Journal, Financial Times, Fortune),* as well as the specialized trade press;
- other private sector surveys and publications—e.g., by trade associations; and
- interviews with people having knowledge and expertise concerning the industry in question, including Commerce Department and other government officials, private sector and trade association representatives, independent consultants, and academics.

For each sector, the data judged most reliable were used to construct an estimate of the value of U.S. service exports and imports, as well as sales through foreign affiliates, for the years 1982 to 1984. OTA relied exclusively on the official U.S. balance of payments data only for those sectors (notably licensing and transportation) where no alternative sources of information were available. Where no precise estimate was possible—often the case—ranges reflect the degree of uncertainty. A detailed discussion of the sources, methods, and assumptions used to construct the estimates that follow here and in chapter 5 is available from NTIS.'

"'Services in the U.S. Balance of Payments, 1982-84: Documentat ion of OTA Estimates, " July 1986, available from the Nat ional Technical Information Service (NTIS), Springfield, VA

BALANCE OF PAYMENTS IN SERVICES

Table 4 and figures 6 and 7 present OTA's estimates of the impact of service activity on the U.S. balance of payments for the period 1982-84, indicating that the U.S. current account ("BEA estimate" in figures 6 and 7) understates both imports and exports of services, Evidently, the understatement for exports exceeds that for imports. The U.S. surplus on services trade (i. e., net exports), in consequence, appears to be greater than reflected in the official statistics. As table 4 shows, OTA puts 1984 service exports at an estimated $69 to $91 billion, while the corresponding figure in the U.S. balance of payments was $43.8 billion. Table 4 thus suggests an omission of $25 to $47 bil1ion in service exports in that year's current account.

Imports were understated to a lesser extent, although the total understatement represents

Table 4.—OTA Estimates of Service Balance of Payments, 1982-84[a]

	Exports (receipts) (billions of dollars)			Imports (payments) (billions of dollars)			Net exports[b] (billions of dollars)		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
Accounting, ...	*$0.2-0.5*	$0.2-0.5-	$0.2-0.5	—c	—c	—c	$0.2 -0.5	$0.2 -0.5	$0.2 -0.5
Advertising	0.1-0.5	0,1-0,5	0.1-0.5	—c	—c	—c	0.1 -0.5	0.1 -0.5	0.1 -0.5
Construction	5.6	4.8	4.0-6.0	0.0-2.2	0.0-1,7	0.0-2,0	3.4 -5.6	3,1 -4.8	2.0 -6.0
Data processing . .	0.1-12	0.1-1.2	0.1-1.2	0.0-2.0	0.0-2.0	0.0-2.0	(1 .9)- 1,2	(1 .9)- 1.2	(1 ,9)- 1.2
Education	1.5-2.2	16-2.3	1.8-2.5	0.1-0.3	0.1-0.3	0.1-0.3	1.2 -2,1	1.3 -2,2	1,5 -2,4
Engineering ., ., . .	1.2-1.7	1.1-1.6	1.0-1.4	0.1-0.3	0.1.0.3	0.1-0.3	0.9- 1.6	0.8- 1.5	0.7 -1,3
Franchising ., ...	0.2-1.0	0.2-1.1	0.2-1.2	—c	—c	—c	0.2 -1.0	0,2 -1.1	0.2 -1.2
Health . . .	1.0-25	1.0-2.5	1.0-2.5	—c	—c	—c	1.0 -2.5	1,0 -2.5	1.0 -2.5
Information. ... ., ...	0.0-2.6	0.0-2.9	0.0-3.1	0.0-1.0	0.0-1.0	0.0-1.0	(1 .0)- 2.6	(1 ,0)- 2,9	(1 ,0)- 3.1
Insurance	5,6-7.7	6.1-8.2	6.9-9.1	6.3-8.6	6.7-9.1	7.4-9.8	(1.1)-(0.5)d	(1..l)-(0.4)d	(0.9)-(0.2)[d]
Investment banking/ brokerage ...	2,1-4.8	3.2-6.4	3.2-8.5	3.6-41	4.3-4.8	4.3-5.6	(2.0)- 1.2	(1.6)- 2.1	(2.4)- 4,2
Leasing ..., ..., ...	0.2-1.2	0.2-1.2	0.2-1.2	0.0-1.0	0.0-1.0	0.0-1.0	(0.8)-12	(0.8)- 1.2	(0,8)- 1.2
Legal	0.0-2.0	0.0-2.0	0,0-2.0	0.0-10	0.0-1.0	0.0-1.0	(1.0)- 2.0	(1.0)- 2.0	(1.0)- 2,0
Licensing .	5.2	5.2	5.5	0.7	0.8	1.0	4.5	4,4	4,5
Management/ consulting .	0.5-1 1	0.6-1.4	0.6-1.6	0.6-1.1	0.6-1.1	0.6-1.1	(0,6)- 0.5	(0,5)- 0.8	(0.5)- 1.0
Motion pictures. . ...,	1.6	1.9	1.9	0.1-1.4	0.1-1,7	0.2-2.7	0.2-1.5	0,2-1,8	(0.8)-1.7
Retailing	—c	—c	—c	—c	—c	—c	—c	—c	
Software ..., ...	1,6-1.7	2,5-2.6	2.8-2.9	0.0-1.7	0.0-2.2	0.0-2.7	(01)- 1.7	0.3-2.6	0,1-2,9
Telecommunications .	1.1	1,3	1.3	1.9	2.0	2.4	(0,8)	(0.7)	(1.1)
Transportation	16,7	17.1	18.5	17.7	19.1	22.8	(1,0)	(2,0)	(4.3)
Travel ..., ...,	15.7	14,1	13.7	13.7	15.8	16.4	2.0	(1.7)	(2.7)
Miscellaneous ., ...	47	5.3	5.7	1.8	1,9	2.1	2.9	3.4	3,6
OTA total	$65-81	$67-84	$69-91	$47-61	$52-66	$57-74	$6.3 -32.8[d]	$2.7 -30.7[d]	$(3.5)-31.5[d]
OTA mid-range estimate . .	$73	$76	$80	$54	$59	$66	$20	$17	$14
IBEA total,...,..	$41,7	$41.8	$43.8	$326	$35.4	$41.5	$ 9.1	$6.4	$ 2.3]

[a]Commercial banking is excluded from this table, for reasons discussed on P 40
[b]Parentheses indicates negative balance
[c]Negligible.
[d]Range of estimates for net exports not that implied by ranges for exports and imports, for reasons explained on *p 76*

SOURCES OTA **estimates**—ch 5 of this report, **BEA estimates**—*Survey of Current Business*, various issues

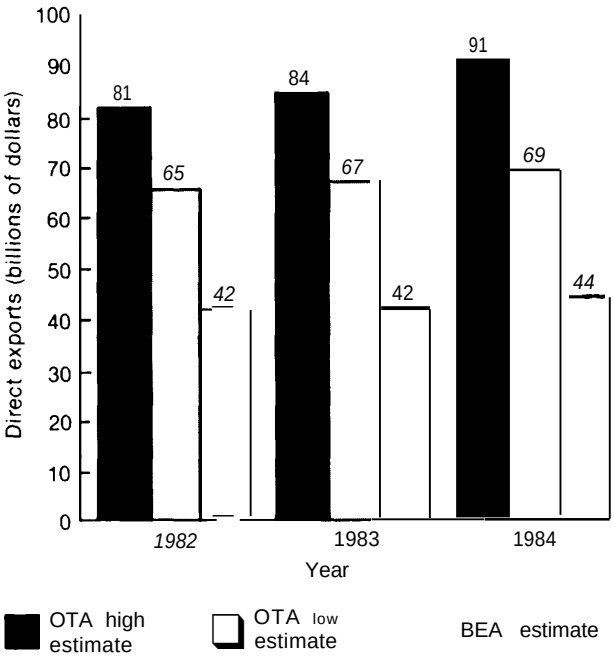
a substantial fraction of total service imports. OTA places 1984 imports at $57 to $74billion, compared with unofficial figure of $41.5 billion. This implies an understatement of service imports in the range of $16 to $33 billion. Taking the middle of the range for OTA's estimates of exports and imports suggests a U.S. service surplus in 1984 of about $14 billion, while the official balance of payments surplus for the corresponding categories was reported as slightly over $2 billion (figure 8),

Similarly for 1982 and 1983, OTA's midrange estimates suggest surpluses of $20 billion and $17 billion respectively (figure 8), while the official figures were reported as surpluses of $9 billion in 1982 and slightly more than $6 billion in 1983. The current account, when compared to the midrange estimates, thus understated the U.S. service surplus by about $11 billion in both 1982 and 1983, and $12 billion in 1984. Note that, in spite of this understatement of services trade, both the official balance of payments data and the midrange estimates of table 4 reflect a decline in the U.S. service surplus over the period 1982-84 (figure 8).

Three qualifications must be added. The first concerns the ranges spanned by OTA's estimates, which point to very large remaining uncertainties, The difference between upper and lower bound on the export estimate for 1984 was $22 billion; for imports the range was $17' billion. Comparisons based on midrange estimates provide a reasonable if somewhat arbitrary indicator of possible errors in the services account, but have no claim to statistical validity. (Nor can BEA's figures have any such claim; the Bureau does not report on possible errors in services accounts,)

A second qualification is necessary because neither the BEA nor OTA totals presented in table 4 include banking services, Given that the official estimates for banking are commingled with investment income in the balance of pay-

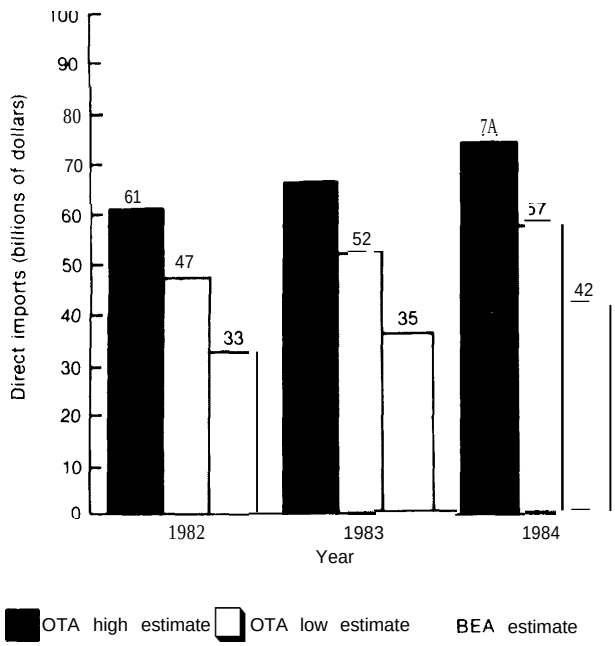
Figure 6.– U.S. Service Exports, 1982-84



NOTE All estimates rounded to nearest b!llion dollars

SOURCES OTA estimates—Table 4 **BEA** estimates—R C Krueger, "U S International transactions, First Quarter 1985, Survey *of* Current *Business*, June 1985, pp. 34-71.

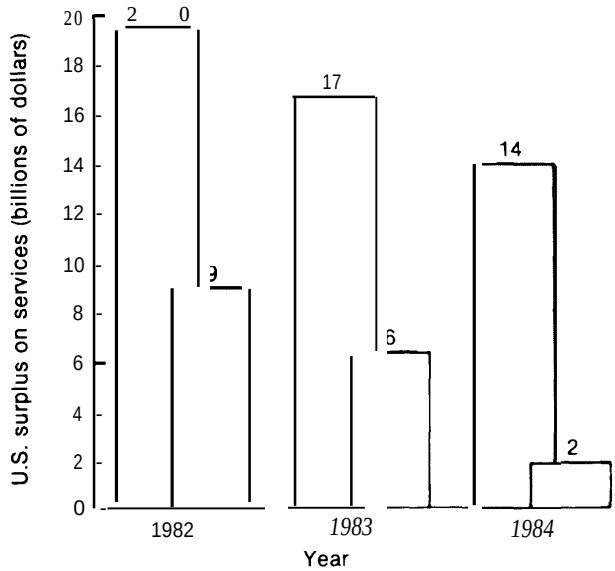
Figure 7.—U.S. Service Imports, 1982-84



NOTE *All estimates* rounded to nearest *billion* dollars

SOURCES OTA estimates–Table 4 **BEA** estimates—R C Krueger, U S International transactions, First Quarter 1985 Survey *of Current Business* June 1985, pp 34-71

Figure 8.— U.S. Balance of Payments Surplus in Services, 1982-84



NOTE: All estimates rounded to nearest billion dollars

SOURCES" OTA estimates—Table 4 **BEA** estimates—R C Krueger, 'U S International transactions, First Quarter 1985 Survey *of Current Business*, June 1985, pp 34-71

ments, there is no way to estimate the services portion of banking in the current account data. Even if banking services could be isolated in the balance of payments, the reported figures could not be checked because the government has no comprehensive data on banking imports. The United States apparently realized a substantial but declining current account surplus (in the range of $16 to $20 billion annually) in banking over the years 1982 to 1984. However, much of this represents gross international interest payments rather than value-added services according to the definitions adopted in this report (see box A, as well as "Commercial Banking" in ch, 5).

Finally, OTA's figures must be qualified because some balance of payments flows in services could not be estimated and have therefore been omitted. The primary omissions are exports of services in some industries by U.S. affiliates of foreign firms and U.S. imports from

minority-owned foreign affiliates of U.S. firms (data are available for majority-owned affiliates only], BEA's direct investment surveys do not provide data on these flows. In sectors where substantial trade in these categories is known to occur, OTA has made rough estimates; otherwise such transactions are not reflected in OTA's figures.

Box A Measuring Banking Services

Banking includes transactions that are conceptually different from most other service transactions. Beyond this, banking data in a few crucial areas of international activity are very poor. For these reasons, banking and financial services demand special attention when measuring the balance of payments.

Typically, measurements of the level of trade in services begin with company receipts: a company receives a fee for performing a service; the fee represents the market value of the service. Them are exceptions. For transactions between affiliated firms, receipts cannot be assumed to represent market values and therefore do not adequately describe the impact of service transactions on the international economy. International transactions in insurance introduce a different sort of complexity, involving not only fee payments to insurers (premiums) but also claims paid to policyholders. While premium receipts may be the appropriate measure of the value of the insurance service provided, claims paid must also be included in measuring impacts on the balance of payments.

For most industries, any such discrepancies between fee receipts and overall impact on the balance of payments (i.e., fee receipts pIus other transactions affecting the balance of payments) will be negligible, but not for comnercial banking services. When a bank charges a fee for performing a service, that fee is the appropriate measure of the service' s value, as it would be for any service product. The majority of international receipts and payments in banking, however, are not fee-based services but rather gross interest receipts and payments on loans and other cross-border assets and liabilities. A complete description of the effect of banking an the balance of payments must include these payments, as well as those for fee-based value-added services. For interest and related charges, the net margin is the appropriate measure of the value of the service. In other words, if a bank raises funds at 8 percent and lends them at 10 percent, the banking service should be valued at 2 percent of the amount lent, not 10 percent.

Nonetheless, it is fee~based services plus gross interest receipts and payments that affect the balance of payments figures themselves. A bank may borrow money in the United States and lend it overseas-meaning that only a portion of the overall loan transaction will be a balance of payments entry. In an case, such measures cannot be computed with any precision because the data are inadequate (see ci. 5]. If they could, they would show without doubt that: 1) banking has a greater effect on the balance of payments than any other service activity; and 2] the U.S. banking surplus in the balance of payments has been declining in recent years.

In this report, to put banking on a basis more comparable to other services, OTA bases its estimates on fees for value-added banking services and *net* interest receipts. Estimated in this way, foreign revenues in banking are substantial but do not overshadow other service industries. In cases where the gross receipts/payments measure would be appropriate-i.e., in the tables and figures summarizing the full effect of services on the balance of' payments (table 4, figures 6, 7, and 8)-OTA has omitted banking entirely because the data do not permit useful estimates. Except where banking services have been specifically excluded, all other data presented in this report which include banks ing use the net interest definition.

FOREIGN REVENUES IN SERVICES

A second major question concerns direct trade in services contrasted with sales through foreign affiliates. Tables 5 and 6 give OTA's estimates of the foreign revenues of U.S. service firms and U.S. revenues of foreign service firms based on the ownership definition of trade (ch. 2).

Note that, for several reasons, the totals for service exports in tables 4 and 5 do not match. The foreign revenues definition, as reflected in table 5, excludes exports from the United States by foreign-owned U.S. firms, while these exports are included in the balance of payments definition that provides the basis for table 4. Similarly, table 5 excludes imports of services to the United States from U.S.-owned firms abroad; these are included in table 4. Tables 5 and 6 also exclude trade between parent and affiliate firms, because the nationality of ownership is the same for buyer and seller. Such a transaction does not constitute international trade on an ownership basis, although it does impact the balance of payments and thus appears in table 4. One final difference between table 4 and tables 5 and 6: the latter also include data on banking. Banking was excluded from the balance of payments figures in table 4 to permit comparison with BEA balance of payments data, in which banking services cannot be isolated from nonservice invisible transactions.

As table 5 and figure 9 indicate, total U.S. service sales on an ownership basis came to an estimated $164 to $180 billion in 1982 and $161 to $178 billion in 1983. (Data that would permit estimates for 1984 were not available when OTA was preparing this report.) Of these totals, direct exports by U.S.-owned firms lo-

Table 5.—OTA Estimates of Foreign Revenues of U.S. Service Firms, 1982-84

	Direct exports (billions of dollars)			Affiliate sales (billions of dollars)			Total foreign-revenues (billions of dollars)		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
Accounting,	$02-0.5	*$0.2-0.5*	$0.2-0.5	*$3.6-3.9*	$3.7-4.0	*$3,9-4.2*	*$3.8-4.4*	$3.9-4.5	$4.1-4.7
Advertising	0.1-0.5	0.1-05	0.1-0.5	1.6	1.7	1.8	1.7-2.1	18-2,2	1.9-23
Construction	5,6	4.8	40-6.0	*3.2-3.6*	2.9-3.3	NA	8.8-9.2	7.7-81	NA
Data processing	0.1-1.2	0.1-1.2	01-1.2	*2.3-3.4*	2.5-3.7	NA	2.4-4.6	2.6-4,9	27-51
Education	1.5-2.2	1.6-2.3	1.8-2.5	0.0-0.1	0.0-0.1	NA	1.5-2.3	16-2.4	NA
Engineering	1.2-1.7	1.1-1,6	1.0-1.4	*3.6*	4.0	NA	4.8-5,3	51-5.6	NA
Franchising	0.2-1.0	0.2-1.1	0.2-1.2	—[a]	—a	—a	0.2-1.0	02-1.1	0.2-12
Health	1.0-2.5	1.0-2.5	1.0-2.5	0.9	1.1	NA	1.9-3.4	2.1-3.6	NA
Information,	0.0-2.6	0.0-2.9	0.0-3.1	0.0-2.6	0.0-2.9	0.0-3.1	2,6	2.9	3.1
Insurance	2,6-3,5	2.7-3.6	2.8-3.7	9.4-11.3	10,1 -12,1	11.0 -13.0	12,0 -14,8	12.8 -15.7	13,8 -16.7
Investment banking/ brokerage	0.5-1,5	10-2.0	1.0-2.5	10.8	7.7	NA	11,3 -12.3	8.7-9.7	NA
Leasing	0.2-1.2	0.2-1.2	0,2-1,2	3.6-5.3	3.7-5.4	3.8-5.5	4.4-5.5	4.5-5.6	46-5.7
Legal	00-2.0	0.0-2.0	0.0-2.0	0,1	0.1	NA	0.1-2.1	0,1-2.1	NA
Licensing	5.2	5.2	5,5	—[a]	—a	—a	5.2	52	55
Management/ consulting	0.5-1.1	0,6-1,4	0.6-1.6	1.2	1.2	NA	1,7-2.3	1.8-2.6	NA
Motion pictures	1.6	1.9	1.9	1,5	2.0	NA	3.1	39	NA
Retailing	—[a]	—a	—a	27.3	25.4	NA	27.3	25,4	NA
Software	1.6-1.7	2.5-2.6	2.8-2.9	3,0-4.1	3.2-4.4	3.4-4.7	4.6-5,8	5.7-7.0	6,2-7.6
Telecommunications	1,1	1.3	1.3	1,2	1.3	NA	2.3	2.6	NA
Transportation	16.7	17.1	18.5	13,5	10.9	NA	30.2	28.0	NA
Travel	15.7	14.1	13.7	0,0	0.0	0.0	15.7	14.1	13.7
Miscellaneous	4.7	5.3	5.7	5.5	6.0	NA	10.2	113	NA
Subtotal (excluding banking)	$603 -73.8	$610-751	$62.5 -79.4	$92.3 -102.0	$875-97.3	NA	$156-172	$152-169	NA
Banking	NA	NA	NA	NA	NA	NA	$8.6	$9.4	$12.2
Total	NA	NA	NA	NA	NA	NA	$164-180	$161-178	NA

[a]Negllglble
NA = not available

SOURCE Ch 5 of this report

Table 6.—OTA Estimates of U.S. Revenues of Foreign Service Firms, 1982.84

	Direct imports (billions of dollars)			Affiliate sales (billions of dollars)			Total U.S. revenues (billions of dollars)		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
Accounting. ., ...	. [a]	—[a]	—[a]	$0.6-0.8	$0.7-0.9	$0.8-1.0	$0.6-0.8	$0.7-0.9	$0.8-1.0
Advertising . . .	—[a]	—[a]	—[a]	0.2	0.2	NA	0.2	0.2	NA
Construction	$0.0-2.2	$0.0-1.7	$0.0-2.0	3.5	3.2	NA	3.5-5,7	3.2-4,9	NA
Data processing	0.0-2.0	0.0-2.0	0.0-2.0	0.0-0.2	0.0-0.2	NA	0.0-2,2	0.0-2.2	NA
Education . . ., ., ...	0.1-0.3	0.1-0.3	0.1-0.3	—a	—[a]	NA	0.1-0.3	0.1-0.3	NA
Engineering	0.1-0.3	0.1-0.3	0.1-0.3	1,0	0.9	NA	1.1-1,3	1.0-1.2	NA
Franchising	—[a]	—[a]	—[a]	—a	—a	—[a]	—a	—a	—a
Health . ,	—a	—a	—[a]	NAb	0.4	NA	—a	0.4	NA
Information, ...	0.0-1.0	0.0-1.0	0.0-1,0	0.0-1.0	0.0-1.0	0.0-1.0	0.0-2.0	0.0-2.0	0.0-2.0
Insurance ., ...	4.2	4.5	4.8	16,9-19.0	14.7-16.5	15.2-20,3	21.2-23.2	19.2-21.0	20.0-25.1
Investment banking/ brokerage	0.0-0.5	0.0-0.5	0.0-0.5	4.9-6.6	6.7-8.9	NA	4.9-7.1	6.7-9.4	NA
Leasing .,..., ...	0.0-1.0	0.0-1.0	0.0-1.0	0.2-0.3	0.2-0.3	0,2-0,3	0.2-1.3	0,2-1.3	0.2-1.3
Legal	0.0-1.0	0.0-1.0	0.0-10	—[a]	—a	NA	0.0-1.0	0.0-1.0	NA
Licensing	0.7	0.8	1.0	. [a]	—[a]	—[a]	0.7	0.8	1.0
Management/ consulting .	0.0-0.5	0.0-0.5	0.0-0.5	~[b]	0,1	0.0-0,5	NA	0.1-0.6	NA
Motion pictures.	01-1.4	0.1-1.7	0.2-2.7	0.8	1.0	NA	0.9-2.2	1.1-2.7	NA
Retailing .	—a	—[a]	—a	31.8	32.1	NA	31.8	32.1	NA
Software	0.0-1.7	0.0-2.2	0.0-2.7	0.0-0,2	0.0-0.2	NA	0.0-1.9	0.0-2.4	NA
Telecommunications . .	1.9	2.0	2.4	0,2	0.0-0.6	NA	2.1	2.0-2.6	NA
Transportation . .	17.7	19.1	22,8	4.8	5.1	NA	22.5	24.2	NA
Travel	13.7	15.8	16,4	—a	—a	—[a]	13.7	15.8	16.4
Miscellaneous ., ...	1.8	1.9	2.1	2,8-3,5	3.2	NA	4.6-5.3	5.1	NA
Subtotal (excluding banking)	$40,3-51,9	$44.4-56.3	$49.9-63.5	$67.7-73.9	$68.5-74.8	NA	$108-125	$113-131	NA
Banking.	NA	NA	NA	NA	NA	NA	$4.4-13.5	$5.0-15.8	$6.1-181
Total	NA	NA	NA	NA	NA	NA	$112-139	$118-147	NA

[a]Negl!gible
bData not available but felt to be neghgible
NA == not available.

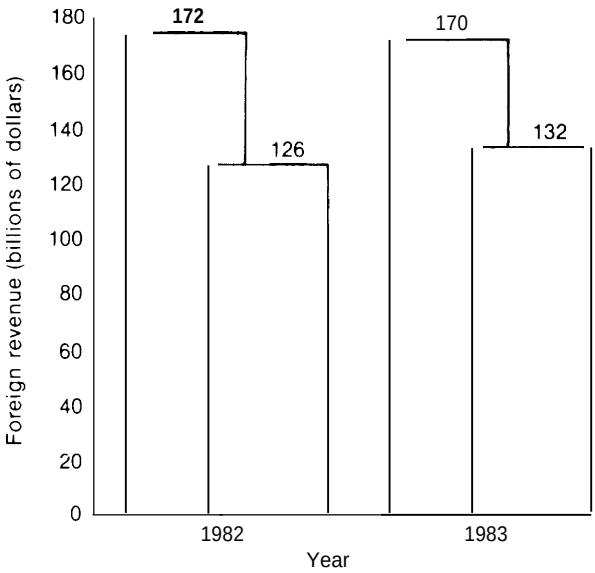
SOURCE Ch 5 of this report

cated in the United States came to $60 to $74 billion (excluding banks) in 1982 and $61 to $75 billion in 1983—-less than half of total nonbank foreign revenues. Sales of foreign affiliates (excluding their sales to the United States) accounted for the remainder. The midrange estimates suggest that direct exports accounted for about 40 percent of total nonbank foreign revenues in 1982 and 45 percent in 1983. Note, however, that table 5 overstates by some unknown amount the contribution of foreign affiliates to total foreign revenues because the data do not, in most cases, permit affiliate sales to be compiled on an equity-share basis. Table 5 also presents data on banking services, although the share of banking services represented by direct exports as opposed to affiliate sales cannot be estimated,

In terms of total foreign revenues, the leading U.S. service sectors in 1983 were transportation, retailing, insurance, and travel services, each generating in excess of $10 billion, Service categories in the $5 to $10 billion range included commercial banking, investment banking, construction, computer software, licensing, engineering, and leasing,

Table 6 presents the results for the U.S. service revenues of foreign firms. Total revenues came to $112 to $139 billion in 1982 and $118 to $147 billion in 1983. Midrange estimates from table 6 indicate that direct imports to the United States by foreign-owned firms (excluding banks) accounted for roughly 40 percent of the U.S. non bank service revenues of foreign firms in both 1982 and 1983. Service activ-

Figure 9.— Foreign Revenues in Services, 1982.83
(OTA midrange estimates)



NOTE All estimates rounded to nearest blllion dollars

SOURCES Foreign revenues of U.S. firms–computed from table 5
U.S. revenues of foreign firms—computed from table 6

Table 7.— Ratio of U.S. Exports to Total Foreign Revenues," 1983[a]

Travel	1.00b
Franchising	1 00b
Licensing	1 00b
Education	0,98
Legal	0,95
Health	0.61
Transportation	0.61
Construction	0.61
Information	0,50
Telecommunications	0.50
Motion pictures	0,50
Miscellaneous	0,47
Management/consulting	0.45
Software	0.40
Engineering	0.25
Insurance	0,22
Data processing	0,17
Investment banking/brokerage	0.16
Advertising	0.15
Leasing	0.14
Accounting	0.08
Retailing	·
Total	0.42
Banking	NA

NA = not available
aBased on midrange estimates of table 5
bDue to export totais equal foreign revenue totals by definition

SOURCE Table 5

i ties which generated $10 billion or more in U.S. revenues during 1983 included retail trade, transportation, insurance, and travel services, [z]

Table 7 gives the ratios of direct exports to total foreign revenues of U.S. owned and controlled firms for the services covered in this report, based on the midrange estimates of table 5. These ratios illustrate the wide variability across sectors in the contribution of direct exports to total foreign revenues. The 22 sectors in table 7 can be divided into three distinct groups:

1. those for which direct exports accounted for 95 percent or more of total foreign revenues: travel, franchising, licensing, education, and legal services;
2. those for which direct exports represented 40 to 60 percent of total foreign revenues: health, transportation, construction, information, telecommunications, motion pictures, miscellaneous, consulting, and computer software; and
3. those for which direct exports represented 25 percent or less of foreign revenues: engineering, insurance, data processing, investment banking, advertising, leasing, accounting, and retail trade.

Plainly, some U.S. service industries do most of their overseas business through affiliates that may contribute little to the U .S, balance of payments and to domestic jobs, while others, those that export services in substantial volume, contribute much more directly to the Nation's economy,

2Note that while retailing is a major factor in foreign revenues of U.S. firms and U.S. revenues of foreign firms, table 4 shows no import or export activity associated with either While Sales figures would appear to suggest that retailing is extremely important, such figures reflect the value of goods sold and do not, even roughly, measure the value-added by the retailer in connection with sales, which is likely to be a small fraction of reported revenues. For these reasons, retailing is not really comparable with other service industries and has not been included in ch. 5.

Chapter 5

Individual Sector Summaries

Chapter 5

Individual Sector Summaries

This chapter contains brief summary discussions of the 22 service sectors for which OTA has estimated trade and foreign revenue figures. Each sector summary covers:

- domestic industry data, including major business activities, revenues, employment, and, where possible, some mention of concentration and the distribution of firms by size, as well as typical forms of organization;
- difficulties encountered and definitions employed in measuring international activity in the industry;
- nature of industry practices and industrial structure internationally, particularly the respective roles of foreign affiliates and direct exporting in providing services overseas;
- estimates of the magnitude of international trade, using both the geographic (balance of payments) and ownership (foreign revenues) definitions set out in chapter 2; and
- where possible, information on geographic patterns of trade.

Sources of data and estimating procedures used for each of these sectors can be found in a separate publication, "Services in the U.S. Balance of Payments, 1982-84: Documentation of OTA Estimates," July 1986, available from the National Technical Information Service.

The 22 service industries covered below include all those with major balance of payments impacts, but OTA has not attempted to include each and every service for which there is some foreign activity. The extensive U.S. borders with Canada and Mexico mean, for example, that almost any service will be traded among the residents of adjacent communities. Texans may cross into Mexico if shoe repair or dry cleaning costs are lower; a caterer in Windsor, Ontario may do some business on the other side of the Detroit River. But this kind of trade remains small compared with the industries treated below.

In one sense, retailing—which has not been included—seems an exception. Total retailing revenues are huge, and some U.S. retailers are foreign-owned. Chains like Benetton have expanded rapidly in the U.S. market, while American firms have likewise moved overseas, But while foreign revenues are very large, they dramatically overstate the value added by foreign-owned retail affiliates. Most of reported revenues simply represent the costs of goods sold. Furthermore, except for border regions, the retailing service itself will seldom involve exports and imports. (Retail purchases by international travelers are counted as part of "Travel.")

In other cases, identifiable industries have not been separately treated because they fall naturally into one or more other classifications. For instance, many hotel chains maintain a foreign presence primarily through franchises; rather than covering lodging as a separate industry, these activities have been included in the section on "Franchising, " while the lodging expenditures of Americans overseas, or of foreign visitors in this country, appear in the "Travel" category. In a few other cases, OTA has omitted industries because of a total lack of information or because they are very small relative to those covered below.

ACCOUNTING

This industry includes firms providing financial and managerial accounting, auditing services, and tax accounting services. Management consulting, data processing, and other related services supplied by accounting firms are also included, as these tend to be an integral part of the accounting business rather than independent activities. However, firms that supply these services as a primary business, rather than , accounting, are not included in this sector (see

"Data Processing" and "Management, Consulting, and Public Relations").

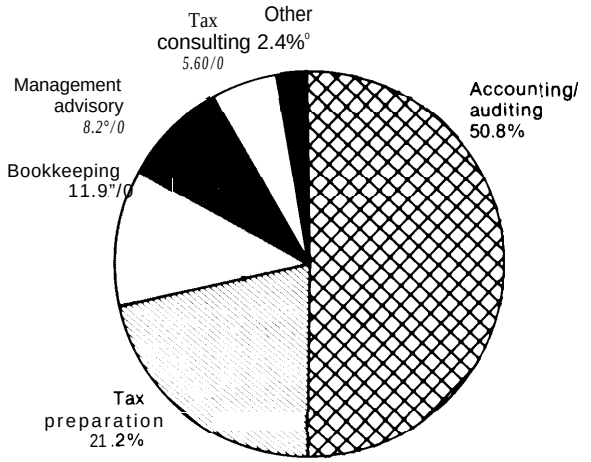
The accounting industry is thoroughly internationalized, but generates little in the way of exports or imports. American accounting firms followed their multinational clients overseas, establishing partnerships and affiliating with foreign concerns to provide services for subsidiaries of U.S.-based multinational corporations (MNCS). The latter have sought consistent accounting standards across the countries in which they do business.

Domestic Industry

The 1982 Census of Service Industries reported some 49,000 U.S. accounting firms, with revenues totaling $14.6 billion. Domestic revenues for 1983 and 1984 were estimated at $17.4 billion and $19.3 billion, respectively. The 1982 Census of Service Industries reveals that the "Big Eight" U.S. accounting firms had 28.3 percent of all U.S. industry receipts that year; the 12 largest firms accounted for nearly one-third of total receipts (32 percent).1 Less than 3 percent of U.S. accounting firms (1414) had revenues of more than $1 million in 1982, and less than 1 percent (294) had revenues exceeding $2,5 million.

Based on the 1982 Census, figure 10 indicates the breakdown of receipts by type of service for the U.S. industry. The single largest component of revenues consists of billings to clients for accounting and auditing services. These billings generate perhaps 50 to 75 percent of total receipts for a Big Eight accounting firm. Other major business activities include tax accounting services (e.g., consultation and tax preparation, typically 15 to 25 percent of billings for a Big Eight firm) and management consulting (typically 10 to 30 percent). For most of the Big Eight, management consulting or "management advisory services" (MAS) has been the most rapidly growing line of business in recent

Figure IO.— Receipts of Accounting, Auditing, and Bookkeeping Firms by Type of Activity, 1982



SOURCE: 1982 *Census of Service Industries" Miscellaneous Subjects* (Washington, DC: Department of Commerce, Bureau of the Census, December 1985), p. 140.

years. MAS fees for the Big Eight as a whole grew an estimated 25 percent between 1984 and 1985, nearly twice as fast as total revenues.[2] Larger firms, and particularly the Big Eight, account for most of the MAS billings.

Only about one-third of U.S. accounting firms are incorporated, The most common organizational form is the individual proprietorship, representing about 45 percent of all firms. Partnerships are also common, particularly among the larger regional and national firms,

About 387,000 people worked in the U.S. accounting industry in 1984, compared with 363,000 in 1983.

Measuring Foreign Activity in Accounting Services

Foreign billings on a chargeable-hour basis are the appropriate measure of international accounting services. None of the Big Eight firms are publicly owned and therefore none are subject to Securities and Exchange Commission financial disclosure requirements; data on industry receipts, particularly foreign bill-

[1]The so-called Big Eight firms are Arthur Andersen, Peat Marwick, Ernst & Whinney, Coopers & Lybrand, Price Waterhouse, Arthur Young, Deloitte Haskins & Sells, and Touche Ross. A ninth firm, Kleinveld Main Goerdeler, is in this size range but earns over 80 percent of its revenues outside the United States.

[2]Total revenues grew an estimated 12.9 percent. See "Largest and Smallest Grow Fastest Among the Big Eight, " *Public Accounting Report,* March 1986.

ings, are therefore limited. The Bureau of Economic Analysis (BEA) direct investment surveys provide partial data on international operations of U.S. accounting firms; some companies also publish statements of operating results or disclose information to the trade press.

Structure and Nature of Industry Practices Internationally

The largest U.S. accounting firms maintain extensive international operations, primarily to serve U. S,-based MNCS. These operations tend to be organized as loose collections of largely autonomous partnerships. Reasons for this organizational form include variations in accounting practices among nations, as well as trade barriers such as work permit restrictions, visa delays, and difficulty in obtaining certification for foreign professionals. Even if the financial linkages are limited, U.S. firms benefit from their international affiliations because they can offer services ranging from referrals to standardized worldwide accounting practices to their clients.

In general, host nations have been ready to accept partnerships involving U.S. accounting firms. Because accounting is culture-sensitive, and because regulations, standard practices, and tax laws differ from country to country, these branches or partnerships operate with a good deal of autonomy; rather than close control and day-to-day interaction with the U.S. parent, communications take place on an as-needed basis. With some exceptions, the pattern is this: the foreign subsidiary of a U. S.-based MNC purchases accounting services from the subsidiary of the parent's accounting firm. There is little direct involvement by the U.S. accounting firm except to ensure that its subsidiary follows proper procedures. Explicit intra-firm charges for indirect supervision of this kind would be unusual. Exports of services are negligible; the local accounting partnership hires employees in the host country and bills the MNC'S local subsidiary. Under such circumstances, there is little or no international trade in accounting. profits may or may not flow to the parent accounting firm.

Variations on this pattern take two common forms, both leading to exports or imports of accounting services. First, the foreign partnership might have temporary need of the skills of employees from the accounting firm's head office or from a third country. Should one or more people be "loaned" to the foreign partnership, international trade in accounting services would follow from intra-firm billing for salaries and related expenses. In the future, such practices will probably grow, with teams of experts drawn from international accounting partnerships undertaking specialized work — e.g., for MNCS diversified across many lines of business in many parts of the world.

In the second variation, an overseas client which is the subsidiary of a U.S.-based MNC may ask that its head office be billed. In that case, the local accounting partnership would bill its own parent, which in turn would bill the MNC; the U.S. balance of payments would register an export of accounting services,

The foreign accounting firms linked to U.S. firms as described above may seldom be affiliates in the strict sense of the term—that is, there may be no equity holdings involved. BEA's 1982 benchmark survey of direct investment identified only 51 foreign affiliates in accounting, with 6 U.S. firms accounting for 35 of these (including nonaccounting affiliates). While OTA has treated the revenues generated by these overseas operations as foreign revenues of U.S. firms, they may in fact have little or no impact on the balance of payments,

No U.S. accounting affiliates of foreign firms were reported by the Department of Commerce over the period 1977-82, and only one affi~iate, with negligible receipts, in 1983. Foreign accounting firms use networking strategies for penetrating the U.S. market similar to those of U.S. firms operating abroad, For example, the Dutch firm Kleinveld Main Goerdeler (KMG) earned over 20 percent of its worldwide revenues in the United States during fiscal 1984 through its U.S. arm KMG Main Hurdman. Similarly, the multinational firm Coopers & Lybrand was formed in 1957 when the U.K. firm Coopers merged with Lybrand, a U.S. com-

pany. This enabled Coopers to follow Unilever into the American market, just as it enabled Lybrand to serve Ford Motor Co, 's growing European operations.[3]

Foreign Revenues in Accounting

The Big Eight accounting firms had an estimated $3.8 billion in non-U. S. billings in 1984, compared with $3.6 billion in 1983 and $3.5 billion in 1982. Foreign billings accounted for at least 25 percent of total billings for each of the Big Eight, and more than 50 percent for four of these companies. Foreign billings as a percentage of total billings for the Big Eight declined slightly over the 1982-84 period, from an estimated 44.7 percent in 1982 to 41.4 percent 2 years later, largely because of the strengthening U.S. dollar over these years.

Smaller accounting firms conduct considerably less international business. A second tier of U.S. accounting firms includes about a dozen companies with revenues in the range of $20 million or more. Of these, nine were part of international groups that earned more than half their fees outside the United States; three were part of groups earning more than half of their fees in the United States (including one purely U.S. operation). If the former are thought of loosely as foreign firms operating in the U.S. market and the latter as U.S. firms operating internationally, then the non-U.S.-based firms in this second tier had U.S. revenues totaling $764 million in fiscal 1984, while the U, S.-based firms generated $117 million in non-U.S. revenues.A While several associations of smaller U.S. firms have been organized to provide international services for their clients, these services consist almost exclusively of referrals and contribute only a negligible amount to earnings. Table 8 summarizes total estimated foreign revenues of U.S. firms and U.S. revenues of foreign firms for 1982 to 1984.

Balance of Payments in Accounting

Because U.S. accounting firms maintain an overseas presence primarily through networks of autonomous partnerships, and to a lesser extent through ownership of foreign accounting firms, exports of accounting services are small. Most of the transactions that enter the balance of payments consist of fees that one firm in the network charges another—e. g., for consultations, referrals, or "loans" of skilled employees. In the 1982 foreign direct investment (FDI) survey, for example, the six U.S. accounting firms with foreign affiliates reported a total of less than $2OO million in exports of services. Overall, accounting exports probably do not exceed $500 million annually. Direct U.S. imports of accounting services are negligible.

Geographic Distribution of International Activity

There is no systematic information on the distribution of accounting activities worldwide by the international groups of which U.S. accounting firms are part. Figure 11 summarizes the distribution of chargeable hours in 1985 for the worldwide operations of one of the largest American firms.

Table 8.— Foreign Revenues in Accounting Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. fhms:			
Direct exports	$0.2-0.5	*$0.2-0.5*	*$0.2-0.5*
Affiliate sales	3.6-3.9	3.7-4.0	3.9-4.2
	$3.8-4.4	$3.9-4.5	$4.1-4.7
U.S. revenues of foreign firms:			
Direct imports	—[a]	—a	
Affiliate sales	$0.6-0.8	$0.7-0.9	$0.8-1.0

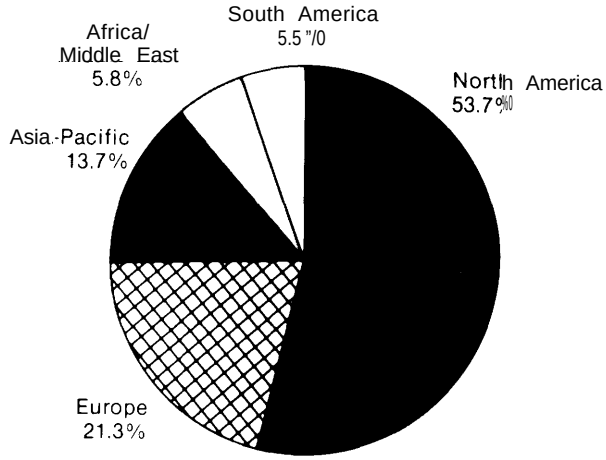
[a]Negligible

SOURCE Office of Technology Assessment.

"'Foreign Attorneys' Practice in Japan, Other Services Issues Focus of Chicago Conference, " *International Trade Reporter*, Feb. 12, 1986, p. 222,

[4]The second-tier U.S. firms in predominantly non-U. S. groups are KMG Main Hurdman, Alexander Grant, McGladrey Hendrickson & Pullen, Fox & Co., Seidman & Seidman, Pannell Kerr Forster, Oppenheim Appel Dixon, Cherry Bekaert & Holland, and Clifton Gunderson. Laventhol & Horwath and Kenneth Leventhal belong to networks with large U.S. revenues. The other top-20 firm in *1984*, Moss Adams, is an independent (J. S. firm with no foreign linkages.

Figure 11 .—Geographic Distribution of Chargeable Hours for a Major U.S. Accounting Firm in 1985



SOURCE Peat-Marwick *Infernatioflal Annual Review* (no date), p 5

ADVERTISING

This industry includes advertising agencies, media advertising representatives, and firms involved in related businesses such as outdoor advertising services. OTA's estimates of international trade cover only advertising agencies.

Like accounting, advertising is culture-sensitive. Advertising services must normally be provided by people located in the client's market; New York copywriters, no matter how gifted, will not strike the right note for a French advertising campaign. As a result, the foreign affiliates of advertising firms — mostly branch partnerships — operate quite autonomously in terms of production and billing. An international advertising firm is likely to be little more than a loose conglomeration of largely independent units, with the most important institutional linkages those through which clients are steered to affiliates. The net result, once again: little international trade in advertising. As in accounting, most exports and imports follow from the temporary assignment of employees to affiliated firms, with the affiliate billed for the services these people provide.

Domestic Industry

According to the most recent Census of Service Industries, gross income (billings net of media time) for the U.S. advertising industry came to $8,3 billion in 1982, The Department of Commerce estimates that receipts rose to $8.7 billion in 1983 and $9.9 billion in 1984. According to the Census, advertising agencies accounted for 71 percent of domestic advertising revenues in 1982 ($5.9 billion), with the remainder attributable to media representatives and other related services. Of 9,089 domestic agencies identified in the Census, 88 large firms accounted for half of all agency revenues in 1982. Commissions on media sales generated 59.4 percent of 1982 agency receipts, while service fees accounted for an additional 20,6 percent. Network TV, the single largest source of domestic commissions for the major agencies, accounted for one-third of 1984 billings. Spot TV placements followed at 21 percent, followed by magazines and newspapers.

U.S. employment in the advertising industry came to about 183,000 in 1984.

Measuring Foreign Activity in Advertising Services

There are two standard measures of activity in advertising: 1) gross billings; and 2) gross income, or billings net of associated media costs. Because media costs are typically passed di-

rectly through to the advertiser, and do not reflect the value of the service provided by the agency, income net of media time is the appropriate measure of trade. Gross income for the *20* largest U.S. agencies averaged about 15 percent of gross billings in both the domestic and foreign markets in *1984* (i.e., media time represented about *85* percent of total billings), although the percentage varies from firm to firm and among national markets.

Structure and Nature of Industry Practices Internationally

Of 145 agencies surveyed for foreign earnings by *Advertising Age* in *1984, 32* reported non-zero foreign income, including 22 of the *25* largest agencies but only 10 of the next *120; 8* agencies and their subsidiaries accounted for more than *70* percent of total reported foreign incomes U.S. agencies operate abroad almost exclusively through affiliates and joint ventures, in part because of the culture-sensitive dimensions of advertising, and in part because of government restrictions in some countries. According to the Commerce Department, 20 U.S. advertising firms reported a total of 182 foreign affiliates (including nonadvertising affiliates) in 1982. Including the affiliates of U.S. firms not themselves primarily involved in the advertising business, 177 advertising affiliates were reported.

While U.S. firms have been pushing notions of global marketing, designing advertising campaigns to be exported rather than developed and sold by affiliates abroad, most of the production will remain local, if only because of language differences. Other market- and culture-specific requirements, coupled with restrictions such as requirements that commercials be filmed locally, will continue to limit direct exports. The export in a global marketing campaign may then consist solely or primarily of a concept, which is then shaped to fit the local market.

Foreign advertising agencies seeking to penetrate the highly competitive U.S. market do so almost exclusively through affiliates and joint ventures. The Department of Commerce identified nine agencies in *1983* as being affiliates of foreign firms. Foreign firms also enter the U.S. market through informal agreements, in which no equity link exists between participating firms. No data are available on the extent of such activity, but the direct impact on the balance of payments is reportedly negligible.

Foreign Revenues in Advertising Services

Table 9 summarizes foreign revenues of the U.S. advertising industry for *1982* to *1984*. These estimates are based on the direct investment surveys of the Department of Commerce and annual data reported by the trade publication *Advertising Age*. A comprehensive estimate of U.S. revenues of foreign firms cannot be made in the absence of data on joint ventures; table 9 does give sales of U.S. affiliates.

Balance of Payments in Advertising Services

Because most of the overseas business of U.S. agencies takes place through affiliates and joint ventures, rather than direct trade, the impact on the balance of payments is rather limited (table 9).

Table 9.—Foreign Revenues in Advertising Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$0.1-0.5	$0.1-0.5	$0.1-0.5
Affiliate sales	1.6	1.7	1.8
Majority-owned	1.4	1.5	NA
Minority-owned	0.2	0.2	NA
	$1.7-2.1	$1.8-2.2	$1.9-2.3
U.S. ***revenues of foreign firms:***			
Direct imports	—[a]	—a	—a
Affiliate saies	0.2	0.2	NA
Joint ventures	NA	NA	NA

[a]Negl!g!ble.
NA = Not available

SOURCE: Off Ice of Technology Assessment

5The eight were Young & Rubicam, Ted Bates Worldwide, Ogilvy & Mather International,]. Walter Thompson, BBDO International, Saatchi & Saatchi Compton Worldwide, McCann-Erickson, and SSC&B Lintas Worldwide. All figures exclude data on 17 subsidiaries whose income and gross billings are also reported for the parent agency. See "41st Report on U.S. Agencies," *Advertising Age,* Mar. 28, 1985, p. 14.

Geographic Distribution of Trade in Advertising Services

According to the 1982 benchmark survey of direct investment abroad, the European affiliates of American firms accounted for 63 percent of sales by majority-owned affiliates in advertising, U.S. affiliates in other developed nations accounted for 26 percent, with the remaining 11 percent the sales of affiliates in developing countries.

COMMERCIAL BANKING

Banking services fall into two fundamentally different categories: 1) interest-earning activities, in which a bank receives interest on claims it holds against its customers; and 2) fee-based or value-added services (e. g., trust and fiduciary activities, credit cards). Investment banking and other financial services provided by nonbanking firms—e. g., brokerage services—are treated elsewhere (see "Investment Banking and Brokerage Services"), But given that many U.S. banks provide banking services overseas that they are prohibited from offering in the U.S. market, there will inevitably be some overlap in estimates of fee-based services between banking and nonbank financial service firms.

Domestic Industry

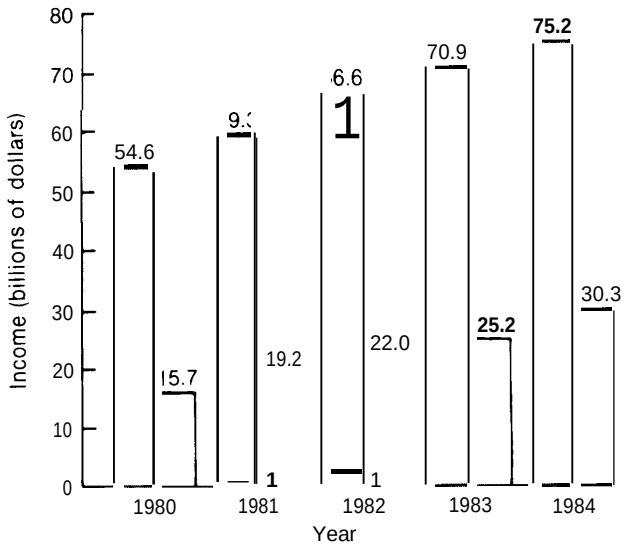
As table 10 shows, about 15,000 U.S. commercial banks operated some 57, ooo offices in 1984. (These figures exclude mutual savings banks, savings and loan associations, and credit unions, some of which offer products similar to those of commercial banks.) Insured commercial banks in the United States earned $75.2 billion in net interest income (total interest income net of interest expense) during 1984; other operating income, including fee-based services, added another $3o.3 billion. As indicated in figure 12, other operating income increased from 22 percent of total income ($15.7 billion) in 1980 to 29 percent ($30.3 billion) in 1984; net interest income increased by 38 percent (in current dollars) over this period, while other operating income nearly doubled. As indicated in figure 13 and table 11, loans represented 56,8 percent of commercial bank assets; they accounted for two-thirds of interest-earning assets,

Table 1O.—U.S. Commercial Bank Offices

	1982	1983	1984
Number of banks	15,030	15,050	15,100
Number of banking offices ., .	54,810	55,680	57,010

SOURCE U S Department of Commerce, Internatlonai Trade Admlnistratlon unpublished data Onglnal source Federal Deposit Insurance Corporation

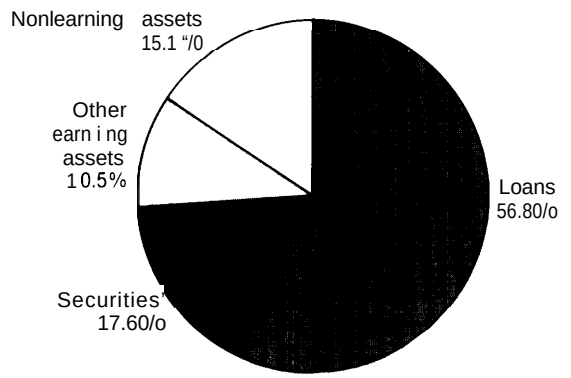
Figure 12.— Net Interest Income and Other Operating Income, U.S. Insured Commercial Banks



SOURCE "Profitability of Insured Commercial Banks In 1984, ' *Federal Reserve* Bullet/n, November 1985

The 10 largest banking corporations in the United States controlled 20.2 percent of total banking system assets at the end of 1984, a decline from 1982 (21. 7 percent). The share of to-

Figure 13.— Distribution of U.S. Banking System Assets by Type as of Dec. 31, 1984



SOURCE "Profitability of I nsured Commercial Banks in 1984," *Federal Reserve Bulletin*, November 1985

Table 11 .—U.S. Banking System Assets by Type[a]

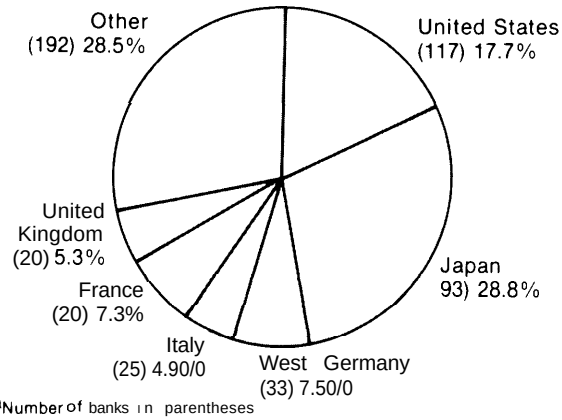
	Percent of average consolidated assets
Loans	56.80/o
• Commercial and industrial	22.5
• Real estate	14.8
c Personal	9.7
• Other	9.8
Securities	17.6
• U.S. Government	9.9
. Other securities	7.7
Other interest-earning assets	10.5
• Interest-bearing deposits	6.3
• Gross Federal funds purchased and repurchase agreements	4.2
Noninterest-earning assets	15.1
	100.0 "/0

[a]As of Dec. 31, 1984
NOTE Totals may not add due to rounding.
SOURCE *Federal Reserve Elu//et/n*, November 1985

tal deposits controlled by the top 10 also dropped somewhat, from 18.4 percent in 1980 to 16.8 percent in 1984.

Figure 14 summarizes the position of the major U.S. banks among the world's largest banks, based on the annual survey of the trade publication *American Banker.* With 117 banks in the Top 500 the United States had the greatest representation of any single nation, followed by Japan with 93 and Germany with 33. Japanese banks, however, controlled more assets—28.8 percent of the Top 500 total—while U.S. banks controlled only 17.7 percent of the assets of the Top 500. West German and French banks trailed well behind,

Figure 14.— Distribution of Assets Among the World's 500 Largest Banks[a]



[a]Number of banks in parentheses
SOURCE "Annual Survey of the World's Largest Banks, " *American Banker,* July 1985

Over the years 1982 to 1984, U.S. employment in the commercial banking industry remained essentially unchanged, at roughly 1.5 million people.

Measuring Foreign Activity in Banking

Of the two broad categories of banking services, interest-earning activities can be measured on a gross or net basis, For reasons discussed in chapter 4, the net interest margin is appropriate for comparisons with other service industries. OTA thus defines the value of the banking service in terms of the net interest margin—that is, the difference between gross interest earned on assets and gross interest paid on the liabilities corresponding to those assets. Thus foreign revenues on interest-bearing activities are presented below net of the cost of money, but not net of other costs of doing business (e.g., labor costs),

To capture all banking services, the entire earning portfolio of the bank must be considered, not just loans. This is because the service function which the bank provides through its earning assets is intermediation, or matching sources of funds with need for funds, and accepting the associated risks. While loans will predominate on the balance sheet, any asset on

which the bank earns returns is similar conceptually. (Banks are not the only enterprises which perform such functions, of course. The portfolio and FDI receipts of nonbank firms and individuals also represent a form of international intermediation. Arguably, these flows could be viewed as banking services performed by nonbanks. By convention, these items appear in the balance of payments as separate items—i.e., portfolio or direct investment—aggregated across the industries in which they occur.)

Fee-based commercial banking services include letters of credit, deposit services, foreign exchange trading, trust and fiduciary activity, mortgage servicing, credit and charge card operations, business services, and other miscellaneous fees and commissions. In most cases, fee-based services cannot be separated from other sources of noninterest income (such as the sale of assets or various extraordinary items); thus OTA's estimates for income other than interest income represent an upper bound on income from fee-based activities.

Perhaps the greatest difficulty in measuring the foreign revenues of banks, and the consequent impact of banking on the balance of payments, is that there may be little or no correlation between where banking activity is booked and where the activity actually takes place. For example, a European-owned bank may operate a Cayman Islands office to handle some of its American business, in which case the assets dedicated to this business would *not* appear as assets held by a U.S. office of a foreign bank. Thus, while it is possible to draw a quantitative picture of international banking in an accounting sense, such a picture may not be fully representative of international business activity in banking.

Structure and Nature of Industry Practices Internationally

U.S. banks operating internationally can choose from a broad range of organizational forms, An *International Banking Facility* (IBF) is a banking unit physically located in the United States but permitted to conduct certain international activities free from domestic reserve requirements, (IBF's may lend and borrow in any currency, but may not issue negotiable certificates of deposit, bankers' acceptances, or other bearer instruments. They may accept interbank offshore deposits without restriction as to maturity or size. However, deposits from nonbank customers must originate outside the United States, must have a maturity of two business days or more and be valued at $100,000 or more.) Another form of domestic subsidiary, the *Edge Act corporation*, allows American banks to take deposits and make loans across State lines if related to international banking transactions.

To do business "on the ground" in foreign countries, U.S. banks may work through *representative offices, shell branches,* or *full branches—all* of which are legal extensions of the U.S. parent. Alternatively, they can establish *affiliates, subsidiaries,* or *consortia* as separate legal entities, A representative office is limited to providing liaison, customer-solicitation, and information services for the parent. Agencies may also make loans and take foreign deposits. Shell branches are booking offices located in foreign countries; they do not administer the business carried on their books and have no contact with the local market, The most common foreign presence is the full branch, which may make loans and take deposits and will typically be backed by the larger capital base of the parent. A banking affiliate is a foreign bank in which the U.S. parent holds a minority ownership share; with more than 50 percent ownership the foreign bank becomes a subsidiary. b In some cases, affiliates or subsidiaries offer U.S. banks less freedom of action than branches, but many foreign government regulations require or encourage them—e.g., by restricting branches and agencies more than affiliates and subsidiaries. Finally, banks may also enter into consortia, in which several banks—generally all holding minority shares—pool resources.

6 In some of the data presented below for subsidiaries, the figures i include data for affiliates with ownership shares of 25 to 50 percent because the Federal Reserve Board makes no distinction between subsidiaries and affiliates with a U.S. ownership share of 25 percent or more.

By the end of 1984, 163 U.S. banks were operating 905 foreign branches, 523 IBFs, and 146 Edge Act corporations with 138 branches. The most recent comprehensive data on foreign affiliates and subsidiaries of U.S. banks comes from the 1982 FDI benchmark survey. This indicates that 133 U.S. banks had foreign affiliates and subsidiaries, including those with nonbank affiliates and subsidiaries. In all, U.S. interests controlled 882 foreign banks at the 10 percent equity level or greater.

Foreign banks seeking to do business here face the same basic organizational alternatives; table 12 summarizes the distribution of total assets by organizational type for foreign banks in the United States as of the end of 1984. Figure 15 gives the breakdown of U.S. assets of foreign banks' American offices by nationality of the parent bank, while table 13 lists the largest foreign owned or controlled U.S. banks.

Table 12.—Foreign Banks in the United States by Organizational Form[a]

	Number	Assets (billion dollars)
Branches	**305**	**$215.3**
Agencies	**176**	**56.6**
Subsidiaries [b]	**66**	**105.6**
Edge Act corporations	39	0.9
Investment companies,	10	Not available
	596	Not available

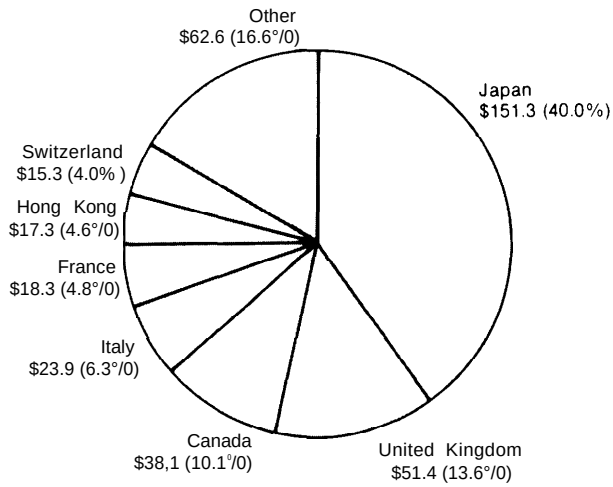
[a]As of December 1984.
[b]Subsidiaries include all U S. banks owned greater than 25 percent by foreign banks.

SOURCE' Federal Reserve Board, unpublished data.

Foreign Revenues in Commercial Banking Services

Table 14 gives OTA's estimates for foreign revenues of U.S. banks and U.S. revenues of foreign banks. These estimates include banking services provided to non-U.S, customers (including the overseas affiliates of U.S. multinational corporations), both foreign operations of U.S. banks and international banking activities

Figure 15.—Assets of U.S. Offices of Foreign Banks as of Dec. 31, 1984 (billions of dollars)



SOURCE, Federal Reserve Board, unpublished data

Table 13.—Foreign-Owned U.S. Banks Ranked by Size[a]

	Assets (billions of dollars)	Parent	Nationality of parent
Crocker National Bank	$17.5	Midland Bank plc[b]	United Kingdom
Marine Midland Bank.	15.4	Hongkong & Shanghai	Hong Kong
Union Bank	7.8	Standard-Chartered Group	United Kingdom
National Westminster Bank	7.1	National Westminster Bank	United Kingdom
Harris Trust and Savings Bank	6.3	Bank of Montreal	Canada
European American Bank	5.7	European-American Group	—[c]
California First Bank	4.6	Bank of Tokyo	Japan
First National Bank of Maryland	3.4	Allied Irish Banks	Ireland
Bank of Tokyo Trust	2.9	Bank of Tokyo	Japan
Lloyds Bank of California	2.7	Lloyds Group	United Kingdom
Bank of California	2.7	Mitsubishi Bank	Japan
Sumitomo Bank of California.	2.5	Sumitomo Bank	Japan

[a]As of Dec. 31, 1984.
[b]Crocker was subsequently purchased by WellsFargo.
[c]European-American Group is a consortium of European banks; shareholders include Amsterdam-Rotterdam Bank N .V. (The Netherlands), Creditanstalt-Ban kverei n (Austria), Deutsche Bank AG (Federal Republic of Germany), Midland Bank plc (United Kingdom), Société Generale de Banque S.A. (Belgium) and Société Générale (France)

SOURCES Federal Reserve Board, unpublished data, annual reports

Table 14.— Foreign Revenues in Commercial Banking Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. banks:			
Net interest income	$5.8	$6.4	$8.5
Booked in U.S. (excluding IBFs[a])	NA	NA	1.7
Booked in U.S. (IBFs only)	NA	NA	3.8
Booked in foreign offices.	NA	NA	3.0
Other income	2.8	3.0	3.7
Booked in U.S. (excluding IBFs)	NA	NA	1,0
Booked in foreign offices and U.S. IBFs	NA	NA	2.7
	$8.6	$9.4	$12.2
U.S. revenues of foreign banks:			
Booked in foreign banks			
Net interest income	$1.1- 2.7	$1.4- 3,6	$1.7- 4.3
Noninterest income.	0.0- 2.0	0.0- 2.0	0.0- 2.0
Booked in U.S. offices	3,3- 8.8	3.6-10.2	4,4-11.8
	$4.4 -13.5	$5.0 -15.8	$6.1 -18.1

[a]International Banking Facility

NA = Not available

NOTES Totals may not add due to rounding For foreign revenues of U S banks, "booked inforeign offices" Includes foreign branches, agencies, and other offices, foreign subsidiaries (25 percent or greater U S ownership), and U S Edge and Agreement subsidiaries Activities of foreign affiliates of less than 25 percent U S ownership are not Included.

SOURCE Off Ice of Technology Assessment

carried out from the United States. According to the table, foreign revenues of U.S. commercial banks (defined to include net interest income and gross noninterest income) came to $12,2 billion in 1984, with net interest income representing $8,5 billion and other income an additional $3.7 billion. Foreign revenues inc-eased nearly 30 percent from 1983 to 1984, after rising about 9 percent from 1982 to 1983,

The share of total foreign revenues represented by affiliate **sales** cannot be calculated, as subtotals for affiliates and subsidiaries abroad cannot be separated from the totals reported for all foreign offices. The data indicate that 64 percent of net interest income was booked in IBFs and other U.S. offices, with the remainder booked at foreign offices and foreign subsidiaries.[7]

There are no comprehensive earnings data for foreign banks in the United States. OTA has based the lower bound estimate in table 14 on the reported earnings of major foreign-owned U.S. banks, as well as a "low-profitability" assumption for U.S. branches and agencies of foreign banks, The upper bound assumes that foreign banks in the United States earn profits equaling the average for all U.S. banking (a "high-profitability" assumption).

Balance of Payments in Commercial Banking Services

Receipts for banking services enter the balance of payments under "Receipts of income on U.S. assets abroad. " The "Other private receipts and payments" category includes banking services along with all interest and dividends on foreign securities and earnings from claims on foreigners by nonbank entities in the United States (ranging from individual holdings of stock to the overseas deposits of U.S. corporations). Banking payments, likewise, fall into the much broader category "payments of income on foreign assets in the United States. " BEA does not release separate estimates of the share of "Other private receipts and payments" attributable to banking, However, after consultations with BEA staff and an analysis of statistics on international claims and liabilities published by the U.S. Department of the Treasury, OTA estimates that the net effect of banking as reflected in the official balance of payments was probably in the range of a *$16* to *$21* billion surplus over the years *1982* to *1984–*

[7]N 0 similar booking distribution for non interest income can be calculated, because the noninterest income of U. S, IBFs is included with the data for foreign offices. U .S. offices excluding 1 H Fs accounted for 26 percent of noninterest income att ributableto international operations.

closer to the high end at the beginning of the period, closer to the low end at the close. (Note that this reflects the impact of *gross* interest receipts and payments, as well non-interest receipts and payments. As discussed earlier, OTA's definition of banking services elsewhere in this report has been based on net interest income; thus the data on direct exports of interest-earning services in table 14 do not reflect the full impact on the balance of payments.) The overall surplus in the "Other private receipts and payments" account, of which banking represents the lion's share, declined from $23.4 billion in 1982 to $20.8 billion in 1984, with estimates for 1985 showing a further drop to $14.4 billion.

How accurate are BEA's figures? This is difficult to judge, for two reasons. First, there are almost no data on direct imports of fee-based (i.e. noninterest) banking services from the home offices of foreign banks. If the ratio of interest to noninterest income for foreign banks' U.S. activities were the same as for U.S. banks' overseas activities, then direct fee-based banking service imports could have been as much as $2 billion by 1984, much of which is probably not reflected in BEA's estimates. The second difficulty follows from a lack of information on typical yields for foreign banks' interest-bearing activities in the United States. Estimates of interest earnings must be based on knowledge of the level of claims on U.S. residents by foreign banks, coupled with the best available evidence on yields. But the ratio of estimated U.S. banking receipts to U.S. bank claims on foreigners implicit in B EA's estimates does not equal the ratio of estimated U.S. banking payments to U.S. liabilities to foreign banks, implying different aggregate interest rates on the import and export sides. If the same ratio had been used for payments as for receipts, gross U.S. payments to foreign banks for interest-earning activities would have differed from the estimated figure by some $4 billion. Because of differences in risk, portfolio composition, maturities, and future expectations concerning exchange rates, there is no reason to anticipate that the rates would be identical or even similar. However, this example does illustrate the considerable level of uncertainty associated with estimating revenues by applying assumed interest rates to estimates of the level of claims and liabilities.

Nonetheless, a clear conclusion can be drawn for this sector: the balance of gross banking receipts and payments represents a substantial, if declining, U.S. surplus. At the same time, the official balance of payments figures may be in error by several billion dollars because of the lack of information on foreign banks' U.S. earnings for both interest-earning and fee-based services.

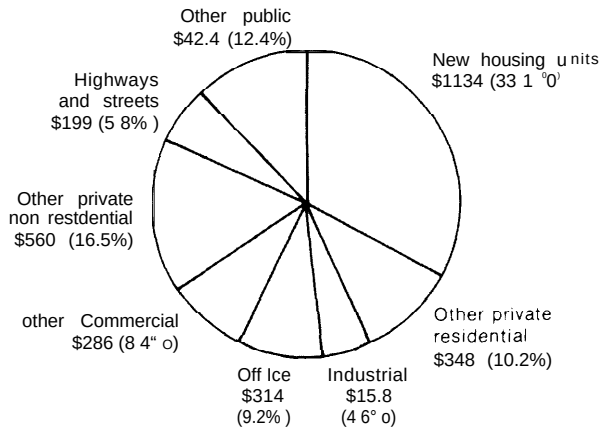
CONSTRUCTION

General contracting firms, heavy construction contractors, and a variety of specialized companies populate the construction industry. Management services supplied by construction firms are also included here, with construction management by firms primarily engaged in engineering and architecture covered in the "Engineering, Architecture, and Surveying" section.

Domestic Industry

The U.S. construction industry is a huge one, with the value of new construction in 1984 placed at $313 billion and the total for 1985 estimated to be $343 billion. The most recent Census of Construction Industries identified almost 1.4 million construction establishments in 1982, including subdividers and developers. Of these, 71 percent were individual proprietorships. Slightly over 4,000 establishments had receipts of $10 million or more; they represented less than 1 percent of all establishments in the industry, but as a group accounted for 36 percent of total industry revenues. According to the 1982 Census, builders accounted for the largest component of industry receipts, 36 percent, followed by heavy construction at 20 percent. Figure 16 shows 1985 new construction by type; private residential construction

Figure 16.— New U.S. Construction, 1985 (percent by value of total) (billions of dollars)



TOTAL $342.4 billion

NOTE Totals may not add due to rounding

SOURCE "Annual Value of New Construct Ion Put in Place in the United States in Current Dollars and 1977 Dol tars, " *U S* Department *of Commerce News* Apr 1, 1986

represents 43 percent of the total, other private construction 39 percent, and public construction 18 percent.

As might be expected, the industry employs a large number of Americans: roughly 4.3 million in 1984.

Measuring Foreign Activity in Construction

Because many large projects take several years to complete, international construction contracting can be measured in several ways: *new contract awards* on an annual basis; *gross foreign receipts,* which reflect total payments for work performed; or *net foreign receipts,* payments net of foreign expenses (and excluding associated merchandise exports). The bulk of the subcontracts on most international projects go to local firms; here it seems appropriate to treat the subcontracts as domestic services provided by the local firms to the ultimate purchaser of the construction services. Thus gross receipts net of local subcontracting and other foreign expenses would be the ideal measure of international value-added in construction. (Alternatively, gross foreign receipts could be taken as the measure of construction exports and subcontracting an imported service. This would generate the same total estimate for net exports, while significantly increasing the figures for exports and imports,) In practice, however, such data are not available; instead, net receipts must be used. This is not a major drawback, because subcontracting is the largest single component of foreign expenses—thus net foreign receipts are a reasonable approximation of gross foreign receipts net of subcontracting.

Structure and Nature of Industry Practices Internationally

Construction firms may export services directly, either through the parent firm or through a domestic subsidiary established expressly for international operations. They also operate internationally through foreign affiliates, The preferred method will depend on the location, nature, and duration of the project. In some cases, international contractors employ both foreign affiliates and direct contracting on the same project, Joint ventures involving two or more firms—perhaps with headquarters in different countries—provide another mechanism. Sometimes parent firms enter into joint ventures with their own overseas affiliates. While most joint venture agreements are negotiated prior to submitting a bid on a project, they can also be formed after bid approval. Joint ventures spread risks among the participants. They may also help in putting together an attractive bid package, if the participating firms bring complementary strengths (technical, managerial, financial) to the venture. Needless to say, a joint venture with a host country firm can also help to win contracts, particularly from foreign governments.

Foreign Revenues in Construction Services

Table 15 summarizes OTA's estimates of foreign revenues in construction services, indicating that 60 to 65 percent of foreign receipts (after netting out foreign subcontracting expenses) result from direct exports of construction services from the United States, with overseas affiliates accounting for the remainder of foreign revenues,

Table 15.—Foreign Revenues in Construction Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$5.6	$4.8	$4.0-6.0
Affiliate sales: gross total	$13.8	$13.4	NA
Majority-owned	12.2	11.8	NA
Minority-owned	1.6	1.6	NA
Net of foreign subcontracting	3.2-3.6	2.9-3.3	NA
	$8.8-9.2	$7.7-8.1	
U.S. revenues of foreign firms:			
Direct imports	$0.0-2.2	$0.0-1.7	$0.0-2.0
Affiliate sales: gross total	$7.5	$6.9	NA
Net of U.S. subcontracting	3.5	3.2	NA
	$3.5-5.7	$3.2-4.9	

NA = not available
NOTES Totals may not add due to rounding Direct exports are net of subcontracting with U S firms Direct Imports are net of subcontracting wtth foreign firms.
SOURCE Off Ice of Technology Assessment

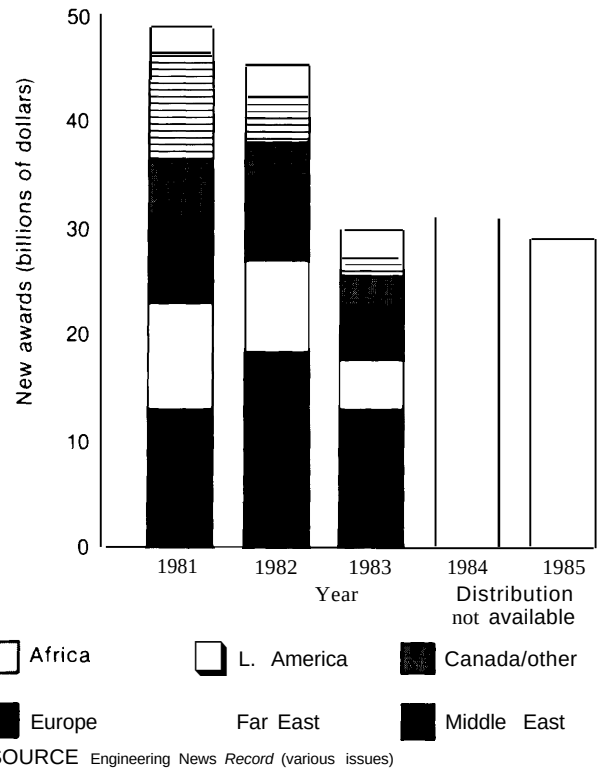
Balance of Payments in Construction Services

Because the share of foreign firms' U.S. earnings that represent U.S. imports of construction services—as opposed to sales through U.S. affiliates—is unknown, the balance of payments in construction cannot be estimated with great accuracy. The data in table 15 suggest, however, a U.S. surplus in the range of $3 to $5 billion annually for both 1982 and 1983. For this industry, a best estimate would be somewhat below the middle of the range; this would still be a considerably greater surplus than shown in the official balance of payments figures ($1.8 billion for 1982, and $1.1 billion for 1983, including design services in addition to construction). As table 15 indicates, both U.S. firms operating abroad and foreign firms operating in the American market saw a drop in international revenues for direct trade as well as affiliate sales in 1983 relative to 1982.

Geographic Distribution of International Construction Activity

Figure 17 and table 16 summarize the geographic distribution of U.S. foreign contract awards as reported to the trade publication *Engineering News Record* by the 400 largest U.S. construction contractors (the geographic breakdowns for 1984 and 1985 are incomplete). The Middle East remained the largest single source of new awards over the period 1979-85, although its share fell below 27 percent in 1985 after peaking at 43 percent in 1983. Awards in Africa and Latin America have also fallen, while Asia's share increased from 14 percent in 1979 to 27 percent in 1985,

Figure 17.— Foreign Contract Awards of Major U.S. Construction Firms



SOURCE Engineering News *Record* (various issues)

Table 16.— New Foreign Contract Awards of U.S. Construction Firms (billions of dollars)

	1981	1982	1983	1984	1985
Africa	$ 2.5	$ 2.9	$ 2.5	NA	NA
Latin America	10.3	4.5	1.7	NA	NA
Canada and other	5.4	3.7	3.2	NA	NA
Europe	7.5	6.9	4.7	$ 5.5	NA
Far East	10.3	8.9	4.9	8.8	$ 7.8
Middle East,	12.8	18.4	12.8	10,8	7.8
	$48.8	$45.3	$29.8	$30.9	$29.0

NA = not available

SOURCE *Engineering News Record,* various issues

Table 17 gives the estimated geographic distribution of U.S. foreign revenues for 1982, the most recent year for which geographic data on both exports and affiliate sales are available. These data suggest that the bulk of exported construction services go to the developing world, with affiliate sales more evenly distributed between developed and developing nations, (Care must be exercised in interpreting these data, as the direct export figures are based on voluntary responses of firms to the Department of Commerce.)

Table 17.—U.S. International Construction Activity by Region, 1982

	Net direct exports	Sales of affiliates
Developed nations:		
Canada	4.0 "/0	15.1 %
Europe	10.0	16.6
Japan	2.5	—
ANZSA[a]	3.3	10.7
Subtotal	19,80/o	42.40/o
Developing nations:		
Latin America	7.9 "/0	11 .9%
Africa	NA	1,5
Middle East	NA	34.8
Asia Pacific	NA	NA
Unallocated	72.2	9.4
Subtotal	80.1 0/0	57.60/o
	100.0 "/0	100.0 "/0

[a]Australia, New Zealand, and South Africa

NA = Not available,

NOTES" Totals may not add due to rounding Affiliate sales are for affiliates of construction parents, Including nonconstruction affiliates Direct export estimates include other technical services

SOURCES Direct exports —*Service Transactions in the U S /n ternational Ac counts, 1977.1983* (Wash i ngton, DC U S Department of Corn merce, Bureau of Economic Analysis, no date), affiliate sales—U S *Direct Investment Abroad" 1982 Benchmark Survey Data* (Washington, DC U S Department of Commerce, Bureau of Economic Analysis. December 1985)

DATA PROCESSING

Data processing (DP) services include batch and remote computing services, facilities management, and system integration services. Services range from complete handling of payroll or accounting functions for business clients to simple data entry or making DP equipment available on an hourly or time-sharing basis. This industry does not include electronic information and databases services (see "Information Services"); OTA has also treated software, both packaged and custom, as a separate industry (see "Computer Software").

Domestic Industry

The Computer Software and Services Industry Association (which has retained the ADAPSO acronym since changing its name) puts 1985 revenues of the DP services industry at roughly $15 billion. Using a slightly more restrictive definition of the industry, the Census Bureau estimates total receipts at $11.6 billion in 1984, and $10.3 billion in 1983.

The 1982 Census of Service Industries reports about 5,100 DP service firms, most small, and a total of 6,700 establishments. The 15 largest firms, each with receipts of $100 million or more, accounted for 37 percent of industry sales. In all, 116 firms—2.3 percent—had receipts in excess of $10 million, and two-thirds of industry sales.

U.S. DP establishments employed about 249,000 people in 1984 (many more people, of course, work in the DP departments of firms in other industries).

Measuring Foreign Activity in Data Processing Services

A number of the larger DP services suppliers are divisions of firms that do most of their business in other industries (e. g., Boeing Computer

Services, hardware manufacturers like Control Data), SIC-based surveys of international operations—such as the voluntary report of technical service exports filed with the Department of Commerce, or the international section of the 1982 Census of Service Industries survey form on Computer and Data Processing Services—do not capture the DP receipts of these firms. Some of the DP revenues of firms classed in other industries appear with figures for other industry groups—e.g., international data processing fees collected by banks. Others do not.

Structure and Nature of Industry Practices Internationally

Of the 6,700 DP services establishments identified by the 1982 Census, only 173—mostly from among the larger—reported revenues from nonresidents of the United States, i.e., direct exports of DP services. Not all provided an estimate of nonresident receipts; of those that did, export sales averaged 6.2 percent of total receipts. ADAPSO'S 1983 annual survey arrived at similar figures, indicating an 8 percent export share, while a study by Price Waterhouse placed exports at 7 percent of industry receipts for 1982.

In addition to direct exports of their services, U.S. DP firms supply services internationally through foreign subsidiaries and affiliates. The 1982 benchmark survey of direct investment abroad identified 16 firms in the category of "computer and data processing services" (which includes software firms and is therefore broader than the DP services industry) with a total of 55 overseas subsidiaries and affiliates. Adding the affiliates of U.S. firms whose primary business places them in another industry brings the number to 97, with total 1982 sales of nearly $2.8 billion.

While no data on direct imports of DP services are collected, given the size of the U.S. market and the relative weakness of foreign industries, it seems unlikely that imported services could be of great significance. Foreign firms have also invested in U.S.-based DP companies. The annual survey of inward FDI includes a category "computer and data processing services, " again including software, with a total of 11 affiliates reported in 1983; their sales totaled $190 million.

Foreign Revenues in Data Processing Services

Table 18 summarizes OTA's estimates of U.S. foreign revenues, as well as U.S. revenues of foreign firms. The lower bound on the direct export figure is based on the reported export sales of U.S. DP firms in the 1982 Census of Service Industries. The upper bound reflects an estimate for DP exports of non-DP firms as well; thus a best estimate probably lies closer to the upper bound. The figures for affiliate sales necessarily include some software revenues, As table 18 indicates, affiliates with parents in some industry other than computer and data processing services account for the bulk of affiliate sales.

Balance of Payments in Data Processing Services

Given the absence of data on imports, OTA could not calculate a balance of payments figure for DP services. It seems unlikely, however, that the balance would exceed a surplus (or deficit) in the range of $1 billion annually.

Table 18.—Foreign Revenues in Data Processing Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$0.1-1.2	$0.1-1.2	$0.1-1.2
Affiliate sales	0.2-0.8	0.2-0.8	0.2-0,8
Majority-owned	NA	NA	NA
Minority-owned	NA	NA	NA
Noncomputer service affiliates	2.1-2.6	2.3-2.9	2.4-3.1
	$2.4-4.6	$2.6-4.9	$2.7-5.1
U.S. ***revenues of foreign firms:***			
Direct imports	$0.0-2.0	$0.0-2.0	$0.0-2.0
Affiliate sales	0.0-0.2	0,0-0.2	NA
	0.0-2.2	0.0-2.2	

NA = not available,
[a]Includes software and data processing sales of noncomputer service affiliates

SOURCE Off Ice of Technology Assessment

Geographic Distribution of International Activity

Although there are no geographic data on the overseas DP businesses of U.S. firms, most of the earlier foreign affiliates were established in Western Europe, and the major European countries probably still account for most U.S. exports and affiliate sales.

EDUCATIONAL SERVICES

Education, largely a public sector responsibility in the United States, and even more so in most other countries, hardly constitutes an industry in the conventional sense, Yet trade takes place, notably when foreign nationals come to the United States to attend school or college, and when Americans study abroad. Exports of management services in education and investment in foreign firms providing education also generate foreign revenues, but employee training programs are not included in this industry (see "Miscellaneous Services").

Domestic Industry

The United States spent some $245 billion on education during the 1984-85 academic year, with the figures for 1983-84 and 1982-83 totaling $229 billion and $212 billion, respectively. Elementary and secondary schools account for about 60 percent of the total, higher education the rest. Public spending represented 82 percent of the 1984-85 total, with the remainder going to private schools, colleges, and other institutions. U.S. educational institutions at all levels enrolled about 57 million students in the fall of 1985, including 12.2 million college and university students.

Public elementary and secondary schools employed 2.2 million teachers in 1982, and public and private colleges and universities another 0.9 million.

Measuring Foreign Activity in Educational Services

Most foreign study takes place at college and graduate school levels. When foreigners study in the United States or Americans go abroad, their total expenditures, including tuition, room, board, entertainment, and local travel—but excluding expenditures funded by U.S. sources, such as scholarships or local employment—determine the level of trade, Given that students also fall within the definition of international travelers, some student expenditures will be mirrored in the travel surveys used to generate estimates for that sector. The fraction of student expenditures included in the travel surveys appears to be small, however, Perhaps 15 to 30 percent of foreign student expenditures other than tuition show up in these surveys. B

Because some of the funding for foreign students comes from U.S. sources, the estimates for trade in educational services must be adjusted by subtracting out the purely domestic expenditures. However, estimates by the Institute for International Education for 1982-84 indicate that 82 to 84 percent of foreign students in the United States were supported primarily by foreign funds, with most of the money coming from families or the home country government.

Structure and Nature of Industry Practices Internationally

Attracted by the reputation for excellence of American higher education, the number of foreign students attending colleges and universities here far exceeds the number of Americans abroad. About 34,000 foreign students were enrolled in the United States in the 1954-55 aca-

[8] Travel surveys by the U.S. Travel and Tourism Administration indicate that about 4 percent of the all nonresidents traveling to the United States do so for educational purposes. Spending by these travelers cannot be isolated, but if they corresponded to the average for all trips the resulting expenditures included in the travel account would be in the range of $0.4 to $0.6 billion annually. Because foreign students stay in the United States much longer than the average traveler, this is no doubt considerably below the total estimated expenditures of foreign students in the United States, as given below.

demic year; by 1984-85, the number had risen to nearly 350,000. An influx of students from oil-exporting nations in the Middle East spurred especially rapid growth during the mid-to-late 1970s. Since the early 1980s, the rate of increase has dropped to less than 1 percent annually, While the numbers of U.S. students abroad are not known as precisely, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) estimated that nearly 24,000 Americans attended institutions in the 44 leading host countries for foreign students in 1981,

Other forms of trade in educational services have been small, The Department of Commerce has added a category for foreign investment in educational services to its benchmark and annual FDI surveys in both inbound and outbound directions. For 1982 and 1983, the foreign educational affiliates of U.S. firms had receipts in the range of $100 million or less, No U.S. educational affiliates of foreign firms were reported in 1983, the first year for which such questions were included.

Foreign Revenues in Educational Services

Table 19 summarizes estimated foreign revenues in educational services for 1982-84. The United States has maintained a large and growing surplus in this account, not only because of the large numbers of foreign students who come here but because tuition and living expenses in the United States generally exceed those for Americans studying abroad. Except for the quite small receipts of overseas educational affiliates of U.S. firms, all the revenues in table 19 impact the balance of payments directly. Thus the U.S. ran a current account surplus on educational services in the range of $1.5 to $2.0 billion annually for the 1982-84 period.

Table 19.—Foreign Revenues in Educational Services (billions of dollars)

	1982a	1983a	1984a
Foreign students' U.S. expenditures:			
Tuition paid by foreign sources	$0.6	$0.6	$0.7
Other expenses[b]	0.9-1.6	1.0-1.7	1.1-1.8
Affiliate sales	0.0-0.1	0.0-0.1	NA
	$1.5-2.3	$1.6-2.4	NA
U.S. students' foreign expenditures[b]	$0.1 -0.3	$0.1 -0.3	**$0.1-0.3**
Affiliate sales	—	—	**NA**
	$0.1-0.3	$0,1-0.3	

[a]Academic year beginning
[b]Excludes estimated expenditures covered in travel account
NA = Not available

SOURCE Off Ice of Technology Assessment

Geographic Distribution of International Educational Services Activity

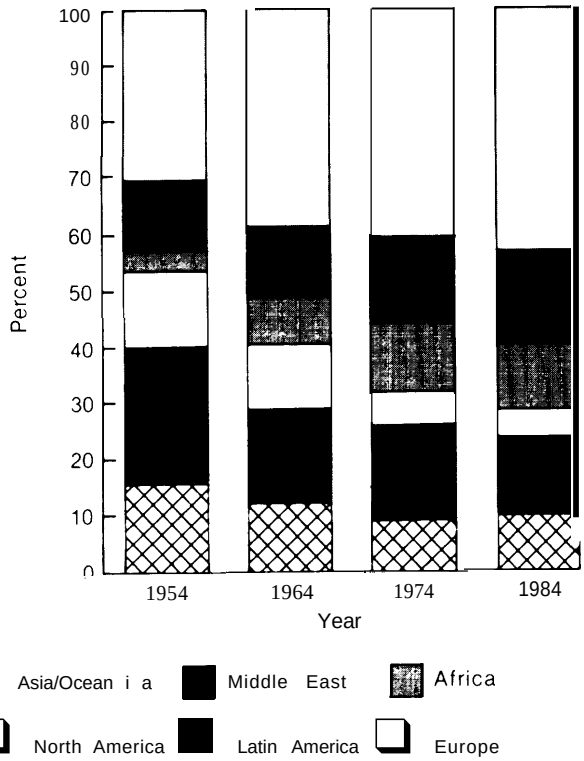
Table 20 lists foreign students in the United States by home country for the academic years 1964-65 and 1984-85. The distribution has shifted substantially. Only Taiwan and Iran were among the top five countries of origin in both years. Canada, India, and Japan were replaced by Malaysia, Nigeria, and South Korea. Overall, as indicated in figure 18, the distribution of foreign students in the United States has shifted away from Europe and the Americas toward Africa, the Middle East, and South and East Asia.

Table 20.—Foreign Students in the United States by Nationality

1984-85		1964-65	
Taiwan	22,590	Canada	9,250
Malaysia	21,720	India	6,810
Nigeria	18,370	Taiwan	6,780
Iran	16,640	Iran	3,720
Korea	16,430	Japan	3,390
Canada	15,370	Hong Kong	3,280
India	14,610	Korea	2,600
Japan	13,160	Philippines	2,470
Venezuela	10,290	United Kingdom	1,960
Hong Kong	10,130	Thailand	1,630
China	10,100	Cuba	1,570
Saudi Arabia	7,760	Greece	1,540
Thailand	7,220	Israel	1,540
Indonesia	7,190	Germany	1,500
Lebanon	6,940	Nigeria	1,380
Subtotal, top 15	198,520 (580/o)	Subtotal, top 15	49,420 (60°/0)
All others	143,590	All others	32,620
	342,110		82,040

SOURCE: Open *Doors:* 1984/85 (New York: Institute for International Education, no date), p. 16

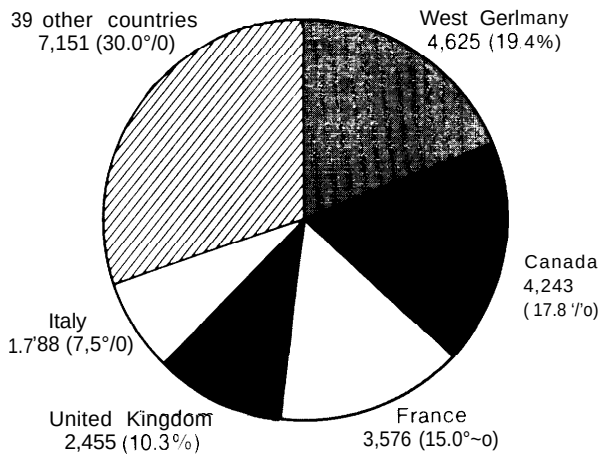
Figure 18.— Foreign Students in the United States



SOURCE *Open Doors* 1984/85 (New York Institute for International Education, no date), p 12

Based on the 1981 UNESCO survey data, figure 19 summarizes the distribution of Americans studying abroad by host country. Five nations—West Germany, Canada, France, the United Kingdom, and Italy—accounted for 70 percent of the total.

Figure 19.– U.S. Students Abroad, 1981



TOTAL: 23,838

SOURCE. Open Doors" 1984/85 (New York Institute for International Education, no date), p 10, original source *UNESCO Statistical Yearbook* 1984

ENGINEERING, ARCHITECTURE, AND SURVEYING

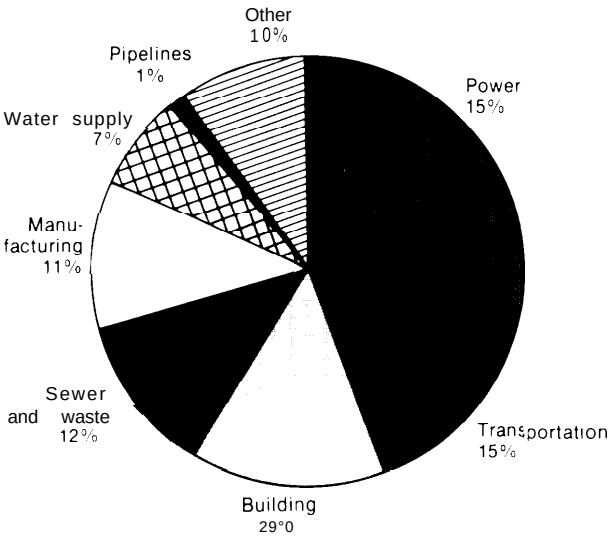
This industry group (EAS, also referred to as the design industry) consists of firms providing professional services in the fields of engineering, architecture, and land surveying. Construction management, project general management, and other activities directly related to construction are included only if undertaken by a firm whose primary business is in the EAS industry. (Construction management by firms primarily engaged in construction is included in the "Construction" section.)

Domestic Industry

Receipts of U.S. EAS firms totaled $35.6 billion in 1982, $37,3 billion in 1983, and $40,2 billion in 1984. The most recent Census of Service Industries found 42,()()0 such firms i$_n$ 1982 (and more than 45,ooo establishments), with those whose business consisted primarily of engineering accounting for the great majority of revenues—79.5 percent of the total. Receipts of architectural firms represented 17.2 percent of the total, with surveying establishments trailing, at 3.3 percent. The 20 largest EAS firms had 25,6 percent of industry receipts in 1982. The 134 companies with receipts of more than $25 million accounted for 44 percent of the industry total.

For the 500 largest U.S. design firms, Engineering News Record reports annually on revenues by type of firm and type of project. Figure 20, summarizing the 1984 survey, shows that building design work accounted for 29 percent of receipts, followed by power and transportation at 15 percent each.

Figure 20.—Total Billings of Top 500 U.S. Design Firms by Type of Project, 1984



TOTAL BILLINGS: $9.6 billion
SOURCE: "Design Billings Gain 12 Percent in 1984," *Engineering News Record,* May 16, 1985, pp. 36-66

Employment in the EAS industry grew by 7 percent from 1983 to 1984, reaching a level of about 616,000 people. According to the 1982 Census of Service Industries, 30 percent of the jobs in the industry are held by licensed or registered engineers, architects, and surveyors and 38 percent by certified engineering technicians and other technical personnel.

Measuring Foreign Activity in EAS Services

As with construction, international subcontracting, either directly or through joint venture subsidiaries, has been common on overseas design projects. Because most subcontracting costs are passed through to the purchaser, the preferred measure of trade consists of billings net of subcontracting and other foreign expenses; these billings reflect most closely the value added by the contracting design firm. The alternative, treating gross billings as exports of design services and subcontracting as imports, would, of course, yield the same net export total. But given that the bulk of subcontracts on international projects go to local firms, as in the construction industry, subcontracted work is best treated as a domestic service provided to the ultimate purchaser.

Structure and Nature of Industry Practices Internationally

Almost 2,oOO (4.4 percent) of the EAS establishments responding to the 1982 Census of Service Industries reported sales to non-U.S. residents—i. e., direct exports, table 21, Again as in the construction industry (and many other service industries), most of the exports originate with relatively large establishments. For those establishments providing information on the level of their exports, rather than merely indicating that exports occurred, on average 21 percent of their total receipts came from sales to nonresidents. Within this group, the engineering establishments proved somewhat more export-oriented (table 22).

Foreign Revenues in EAS Services

OTA's estimates, table 23, suggest that perhaps 25 to 30 percent of the foreign revenues of U.S. EAS firms result from the direct export of design services, with the remainder generated by affiliates. For foreign firms operating in the U.S. market, affiliates accounted for at

Table 21 .—U.S. Engineering, Architecture, and Surveying (EAS) Establishments Indicating Sales to Nonresidents, 1982

Engineering establishments	6.1 %
Architecture establishments	2.6
Surveying establishments	1.7
All EAS establishments	4.4 "/0

SOURCE' *1982 Census of Service Industries: Miscellaneous Subjects* (Washington, DC. U.S Department of Commerce, Bureau of the Census, December 1985), p 142

Table 22.—Percent of Receipts From Nonresidents for U.S. Engineering, Architecture, and Surveying Establishments Reporting Nonresident Sales, 1982[a]

Engineering establishments	21 .60/0
Architectural establishments.	17,4
Surveying establishments	19.8
Overall	21.1 "/0

[a]Includes only those establishments reporting dollar value of nonresident sales.

SOURCE *1982 Census of Service Industries: Miscellaneous Subjects* (Washington, DC: U S. Department of Commerce, Bureau of the Census, December 1985), p 142.

Table 23.— Foreign Revenues in Engineering, Architecture, and Surveying Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$1.2-1.7	$1.1-1.6	$1.0-1.4
Affiliate sales	3.6	4.0	NA
Majority-owned	3.2	3.3	NA
Minority-owned	0.4	0.7	NA
	$4.8-5.3	$5.1-5.6	
U.S. revenues of foreign firms:			
Direct imports	$0.1-0,3	$0.1-0.3	$0.1-0.3
Affiliate sales	1.0	0.9	NA
	$1.1-1.3	$1 .0-1:2	

NA = not available

SOURCE Off Ice of Technology Assessment

least 75 percent (and perhaps as much as 90 percent) of total U.S. revenues.

Balance of Payments in EAS Services

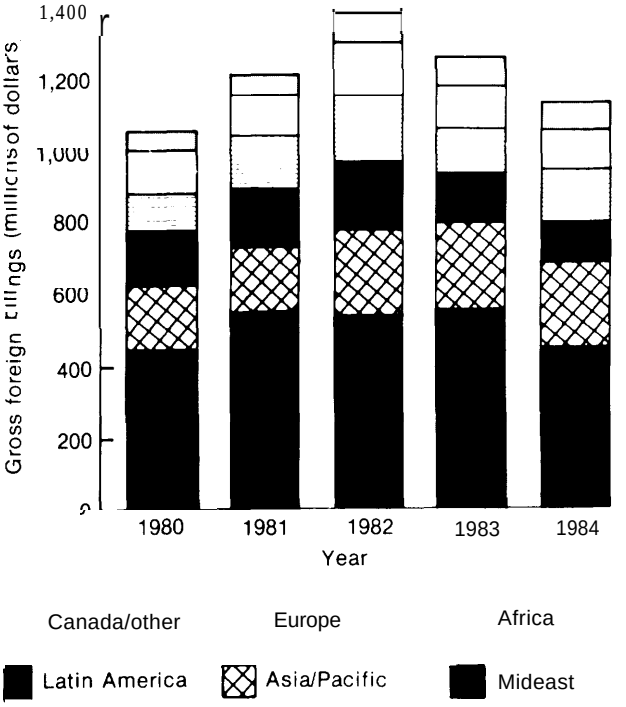
As indicated in table 23, the United States has run a surplus in the range of $1.0 to $1.5 billion in this industry, The balance appears to have declined slightly over the 1982-84 period as exports have fallen—perhaps in part due to the strength of the dollar—but any such conclusion is tentative at best, given the uncertainty in the estimates, particularly for imports.

Geographic Distribution of Foreign Activity

Figure 21, based on reports by Engineering News Record for the largest international design firms, gives the geographic distribution of foreign billings for the largest U,S, design firms.

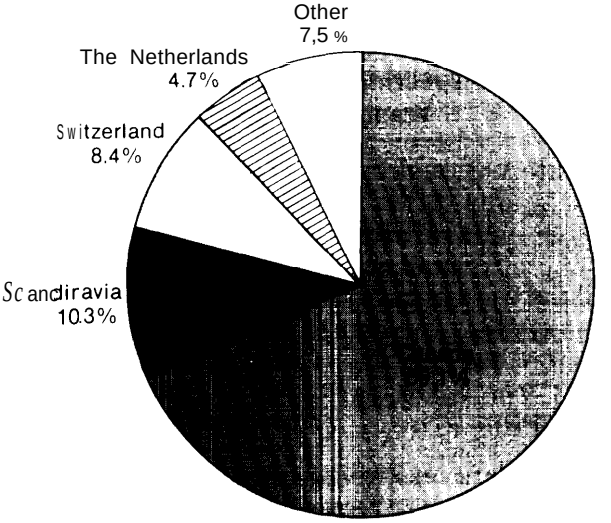
As figure 22 shows, most of the design firms operating in the U.S. market have been Canadian and European, Over the period 1980 to 1984, the Canadians have lost market share to European firms, Although Japanese and other Asian firms have reportedly begun to penetrate the U.S. market, data reflecting this are not yet available,

Figure 21 .—Foreign Billings of Largest U.S. Design Firms by Region



SOURCE: *Engineering News Record* (various issues).

Figure 22.— U.S. Revenues of Foreign Design Firms, 1984



NOTE: US revenue figures for non-Canadian foreign firms Include some Canadian revenues

SOURCE: Computed from data In "Foreign Billings of Top Designers Fell 10 Percent In 1984," *Engineering* News Record, Aug 1, 1985, pp 26-39

FRANCHISING

International franchising falls into two general categories. Business *format* franchising entails licensing of trademarks, know-how, and often an entire operating package that may include training programs, marketing plans, and manuals, standards, and quality control procedures. Close continuing relationships are common—e.g., for McDonald's or Holiday Inn franchises. In *product and trade name* agreements, the franchised dealer (franchisee) markets the franchiser's product or service line and will normally identify to a more limited extent with the franchiser's company.

Domestic Industry

The Department of Commerce placed the number of franchised establishments in the United States at 444,000 in 1984, with total sales of $492 billion. Franchising has been growing rapidly, with sales projected to increase by 8.6 percent in 1986. Three-quarters of sales by franchisees come under product and trade name agreements— many of them with auto and truck dealers and gasoline service stations, table 24– the remainder representing business format franchising. Many franchising firms offer both kinds of agreements.

Measuring Foreign Activity in Franchising Services

International trade occurs when a franchiser grants rights to a franchisee under some other national ownership. The franchising fee, generally set at something less than 5 percent of the franchisee's sales, measures the value of the service provided. In many cases, only a fraction of the fees due will be repatriated by the U.S. franchiser, particularly in the early years of setting up overseas franchising operations.

The data on foreign franchising are sparse; in the absence of better information, OTA's estimates of franchising fees have been based on the assumption that sales-per-outlet for foreign franchisees are roughly comparable to sales-per-outlet for U.S. franchisees.

Structure and Nature of Industry Practices Internationally

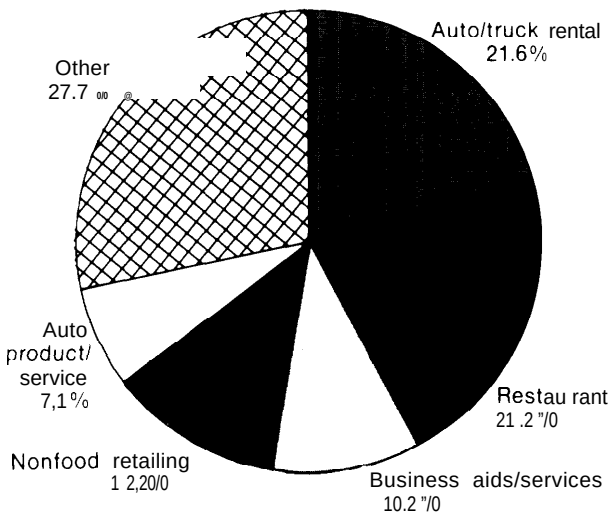
A Commerce Department survey has shown that, by 1984, 328 U.S. franchisers had over 27,000 outlets outside the United States; of these, automobile and truck rental outlets (21.6 percent) and restaurants (21.2 percent) were the most common (figure 23). Table 25 summarizes

Table 24.—U.S. Franchising Sales by Type of Business, 1984

	Sales	
	Billions of dollars	Percent of total
Auto and truck dealers	$252.1	51 .20/0
Gasoline service stations	101.0	20.5
Restaurants	43.4	8.8
Soft drink bottlers	16.7	3.4
Nonfood retailing	15.5	3.2
Lodging	13.2	2.7
Convenience stores	10.3	2.1
Business aids and services	9.8	2.0
Auto products and services	9.2	1,9
Other	20.9	4.2
	$492.1	100.0 "/0

SOURCE *Franchising in the Economy 1984-1986* (Washington, DC: U.S Departmen! of Commerce, International Trade Administration, January 1986), p 25

Figure 23.—Foreign Franchising Outlets of U.S Firms by Type, 1984



SOURCE: *Franchising In the Economy 1984-1986* (Washington, DC Department of Commerce, International Trade Administration, January 1986), p 43.

Table 25.— Foreign Operations of U.S. Franchisers

	Number of U.S. franchisors	Total foreign outlets
1972	175	6,153
1974	217	9,663
1976	234	12,348
1978	266	17,156
1980	279	20,428
1981	288	21,416
1982	295	23,524
1983	305	25,682
1984	328	27,021

SOURCE *Franchising in the Economy 1984.1986* (Washington, DC US Department of Commerce, International Trade Administration, January 1986) p 9

the growth in the number of U.S. franchisers with international operations as well as the number of outlets.

Foreign Revenues in Franchising Services

Table 26 gives OTA's estimates for the foreign fee revenues of U.S. franchisers, in the form of ranges based on estimated sales and typical fees as a percentage of sales. As indicated in the table, it seems unlikely that annual fees generated by international franchising could exceed $1 billion by much. Evidently, U.S. franchising yields negligible fee income for overseas franchisers.

Table 26.—Foreign Revenues in Franchising Services (billions of dollars)

	1982	1983	1984
Foreign fees of U.S. franchisers	$0,2-1.0	$0.2-1.1	$0.2- 1,2
U.S. fees of foreign franchisers	—[a]	—[a]	—[a]

[a]Negligible

SOURCE Off Ice of Technology Assessment

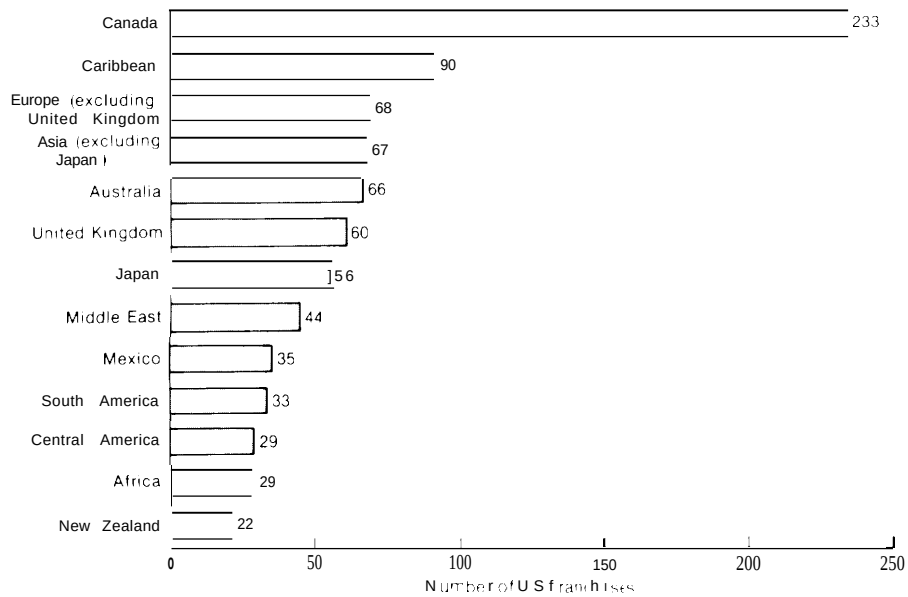
Balance of Payments in Franchising Services

The uncertainties concerning sales levels and fee structures make the impact of franchising on the balance of payments likewise uncertain. The net impact could be negligible; in any case, it will not exceed the level of fees estimated in table 26. (Such figures, of course, exclude any exports of goods associated with franchising operations.)

Geographic Distribution of International Franchising Activity

As figure 24 indicates, Canada was the single most popular location for U.S. franchisers, with 233 having Canadian operations in 1984. OTA could locate no information on sales or fees by country.

Figure 24.–U.S. Franchisers by Region, 1984



SOURCE *Franchising in the Economy* 1984.1986 (Washington, DC Department of Commerce, International Trade Administration, January 1986) p 10

HEALTH SERVICES

Trade takes place when a foreign national comes to the United States specifically for medical treatment, or when an American firm provides health-related services—e.g., management expertise—internationally. The incidental health care expenditures of international travelers, however, are covered under "Travel." This first form of U.S. health care exports thus resembles exports of educational services; they are a matter of foreign nationals traveling to the United States. The resemblance goes further in that total exports are a miniscule fraction of domestic revenues—well under 1 percent for health care, including revenues flowing to U. S,-owned hospitals overseas. While there are a small but growing number of the latter, at least 90 percent of the world's hospitals are run on a not-for-profit basis; in many parts of the world, governments bear much of the cost of health care services, particularly the operation of hospitals. Even in the United States, where most physicians remain in private practice, the government not only operates hospitals—e. g., through the Veteran's Administration—but pays for a substantial fraction of physicians' services through programs like Medicare. Regardless of growth rate, it will be many years before overseas hospitals owned or operated by U.S.-based firms become at all significant compared to the domestic industry. As for education, this means that the notion of international competition has no more than limited application; parallels with profit-seeking firms in other service industries, and the government policies that affect them, are few.

Domestic Industry

The United States spent $424 billion on health care in 1985, an increase of 9.4 percent over 1984's figure of $387 billion. Hospital care accounts for about 40 percent of the total, and physicians' services nearly 20 percent. Table 27 gives the Commerce Department's estimated breakdown of expenditures for 1985.

Medicare outlays in 1985 reached $70 billion, a 14 percent increase over the previous year and about 16 percent of total health care spending, These payments included $45 billion for the Hospital Insurance (inpatient care) program and about $25 billion for Supplementary Medicare Insurance (physician, outpatient-hospital, and other services),

Table 27.–Estimated U.S. Health Care Expenditures, 1985

	Expenditures	
	Billions of dollars	Percent of total
Hospital care	$171.6	40.4 "/0
Physicians' services	83.5	19.7
Dentists' services	28.3	6.7
Drugs and medical sundries[a]	28.5	6.7
Nursing home care	35.2	8.3
Other health services	28.9	6.8
Program administration and net cost of insurance	19.1	4.5
Government public health activities	11.5	2.7
Research[b]	7.3	1.7
Construction of medical facilities	9.9	2.3
	S423.8	100.0 "/0

[a]Spending for drugs dispensed in hospitals and by physicians reported within those categories
[b]Research expenditures of drug companies and other manufacturers and providers of medical equipment and supplies are Included in the category in which the product falls.
NOTE" Totals may not add due to rounding

SOURCE. 1986 U S *Industrial Outlook* (Washington, DC U S Department of Commerce, January 1986), p 54-3

As of 1985, the 6,800 hospitals in the United States maintained approximately 1,3 million beds. As of September 1984, investor-owned hospitals numbered 1685 (including company owned and managed hospitals), with nearly 204,000 beds.

The 1982 Census of Service Industries reported nearly 173,000 physicians' offices, with receipts of $51 billion. Various other non-hospital health care establishments added another $45 billion in revenues. Table 28 summarizes health care establishments other than hospitals as reported in the 1982 Census.

Structure and Nature of Industry Practices Internationally

International transactions in health care services fall into two distinct categories: 1) travel by patients to receive health care services; and 2) foreign ownership and/or operation of hos-

Table 28.—Health Care Establishments in the United States Other Than Hospitals, 1982

	Number (in thousands)	Receipts (billions of dollars)
Offices of physicians	172.9	$50.7
Offices of dentists	95.0	16.1
Offices of osteopathic physicians	6.6	1.4
Offices of chiropractors	12.4	1.4
Offices of optometrists	14.5	2.1
Nursing and personal care facilities	11.3	13.2
Other	34.1	10.8
	346.6	$95.6

NOTE Figures Include only establishments subject to Federal Income Tax Totals may not add due to rounding

SOURCE *1982 Census of Service Industries Establishment and Firm Size* (Washington, DC U S Department of Commerce, Bureau of the Cen sus, May 1985} pp 115.117

pitals and other health care facilities. Due in large measure to the quality and reputation of American health care—and the specific services available here (e. g., heart transplants)—foreigners traveling to the United States greatly exceed Americans venturing abroad for care. Foreign patients tend to be concentrated in a relatively small number of facilities—e. g., the Mayo Clinic, the Cleveland Clinic, major university hospitals. The Mayo Clinic, for instance, estimated that slightly more than 2 percent of its patients in 1985 were foreigners who had come to the United States explicitly for treatment, with the Cleveland Clinic placing the figure at about 1 percent.

OTA puts the direct health service revenues generated by foreign patients in the United States at less than $100 million annually. Other expenditures associated with travel to the United States by those seeking treatment—e.g., air fare, accommodations—are greater. (These expenditures are included in the estimates presented below under "Travel.") The Cleveland Clinic, for example, estimates that the 6,000 to 7,OOO foreign patients it treated in 1985 spent more than $70 million over and above payments for health care services.

U.S. firms have begun to move into ownership and management of hospitals and other health care facilities overseas, with foreign revenues substantial (table 29). The Federation of American Hospitals reports that in 1985 its

Table 29.—Foreign Revenues in Health Services (billions of dollars)

	1982	'1 983	1984
Foreign revenues of U.S. firms:			
Direct exports	$1.0-2.5	$1.0-2.5	$1.0-2.5
Affiliate sales	0.9	1.1	NA
Majority-owned	0.9	1,0	NA
Minority-owned	0.1	0.1	NA
	$1.9-3.4	$2.1-3.6	
U.S. ***revenues of foreign firms:***			
Direct imports	—[a]	—a	—a
Affiliate sales	NA	**0.4**	NA

NA = Not available.
[a]Negllglble
NOTE Totals for affiliate sales may not add due to roundtng

SOURCE Off Ice of Technology Assessment

members owned 70 foreign hospitals (with 9,420 beds) in 11 countries, and managed an additional 11 (3,490 beds) in 8 countries. Another 15 hospitals were under construction. The Federation estimates that its members account for about 90 percent of U.S. activity abroad, and in excess of 90 percent of revenues generated overseas. They also estimate that foreign activities produce 10 percent of the total revenues of U.S. profit-seeking hospitals.

Foreign Revenues in Health Services

Table 29 summarizes estimated foreign revenues for American health care firms, as well as the U.S. revenues of foreign providers. Nearly all the direct exports result from overseas hospital management and consulting activities, which far outstrip expenditures by foreign patients in the United States. Direct exports of health care management and consulting services account for 50 to 75 percent of foreign revenues, sales through affiliates the remainder.

Balance of Payments in Health Services

Based on table 29, OTA estimates the U.S. surplus in health care services to have been at least $1 billion annually during the years 1982 to 1984, and perhaps as great as $2.5 billion.

Geographic Distribution of Foreign Revenues

No information is available on the nationalities of foreign patients visiting the United States

for medical treatment. According to the Federation of American Hospitals, the United Kingdom is the leading site for U.S. hospital operations abroad, with 30 U. S,-owned health care facilities and 2 more under American management. U.S. companies own 20 facilities in Australia and manage 2, followed by Brazil with 7 facilities and Saudi Arabia with 5.

INFORMATION SERVICES

This category includes videotex services, value-added networks (VANS), electronic database services, custom search and abstracting, document supply services, and other services that add value to raw information and/or raw computing capability.9 The data below include print media services such as abstracts, indices, and bibliographic material because these cannot be disaggregated from on-line information services.

Domestic Industry

Based on a survey of its members, the Information Industry Association (11A) placed the revenues of the U.S. information industry in 1982 at $11 billion (excluding non-U.S. sales). Of this, $2.6 billion represented computer-based information services, which includes but is not limited to electronic databases. The remaining revenues represent more conventional information sources ranging from printed materials to indexing to seminars and conferences. The 11A projected revenue growth at 14 percent annually through 1987. The Department of Commerce has estimated U.S. electronic database markets, alone, at more than $1.4 billion in 1984 and roughly $1,9 billion in 1985. Data compiled by Information Market Indicators shows that the relatively specialized U.S. information center/library market for word-oriented electronic databases was $174 million in 1983 and $224 million in 1984. No data are available on the size of small but growing U.S. videotex and teletex markets.

Structure and Nature of Industry Practices Internationally

The United States dominates the international market in electronic databases. As of 1985, roughly 70 percent of the world's bibliographic and statistical databases were produced in the United States. Table 30 summarizes the results concerning international operations of the 1,249 American companies in the 1982 11A survey. Eighteen percent offered hard-copy distribution services in Europe, with 18 percent also offering such services in some non-European foreign market. Eleven percent could provide computer-based distribution services in

'Information-related activities considered parts of other industries include:

. data-processing services (see ''Data Processing' section);
. telecommunications services with no additional value-added component (see "Telecommunications");
• research and analysis not centered on the provision of information (see "Management, Consulting, and Public Relations").

Table 30.—Information Services Offered by U.S. Firms, 1982

Type of service	Number of firms offering service	Number of firms offering service overseas	
		Europe	Other areas
Hard-copy distribution	1,093	225	222
Computer-based distribution	582	139	128
Information support	355	92	98
Seminars/conferences	314	90	92
Information retailing	282	58	55
All other services	126	26	32

NOTE Total number of firms does not add due to multiple service offerings by some of the 1,249 firms surveyed

SOURCE *A Competitive Assessment of the U.S Information Services Industry* (Washington, DC: U S. Department of Commerce, International Trade Administration, May 1984), p 40; original source. *The Business of /n formation* (Washington, DC: Information Industry Association, 1983)

Europe, and 10 percent could do so in foreign markets outside of Europe,

Foreign Revenues in Information Services

Because OTA could not separate direct exports from sales through foreign affiliates for this industry, table 31 presents only totals. Some fraction of the totals in the table represents exports by foreign-owned U.S. firms, which could not be isolated either.

No data on U.S. imports of information services exist. But given the dominant U.S. position in the international market for information services, and the estimated magnitude of U.S. information exports, it seems unlikely that U.S. imports could have been even $0.5 billion annually over the years 1982 to 1984.

Balance of Payments in Information Services

Because the relative shares of exports and affiliate sales remain unknown, balance of payments impacts are bounded above by the total level of foreign revenues, OTA could identify no realistic lower bound, but it seems plain that the United States runs a positive balance in the information services current account.

Table 31 .—Foreign Revenues in Information Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms[a]	$2.6	$2.9	$3.1
U.S. revenues of foreign firms	$0.0-2.0	$0.0-2.0	$0. O-2.()

a No breakdown between clrect trade and affiliate Sales available

SOURCE: Off Ice of Technology Assessment

INSURANCE

The insurance industry divides more-or-less naturally into two segments: 1) life insurance, including health policies and annuities; and 2) property/casualty coverage, including but not limited to general liability, marine, fire, and automobile insurance. Many international transactions take the form of reinsurance, or risk sharing; the original insurer lays off part of its liability by reinsuring with another carrier, thereby diversifying its risk portfolio. Risk diversification improves expected profitability and reduces the likelihood of a serious loss on any one policy. Lloyd's Underwriters, the traditional insurer of last resort, remains the largest final recipient of laid-off insurance.

While reinsurance is as old as the insurance business, so-called jumbo risks have called for a relatively recent variant, Joint participation by a number of companies, through either reinsurance or syndication, maybe the only way to provide coverage for jumbo-jets or nuclear powerplants, to take two examples where a major disaster could bankrupt a single carrier. To the extent that firms from different countries enter into such syndications, international trade in insurance takes place. The New York Insurance Exchange has been effectively exempted from a number of restrictive State regulations so that members can undertake to insure jumbo risks.

As far as possible, OTA has included the many other activities of insurance firms—e. g., brokerage, sales of computer software packages—under other industry headings, as appropriate.

Domestic Industry

Premium receipts of U.S. life insurance companies totaled $135 billion in 1984 and an estimated $148 billion in 1985. According to the American Council of Life Insurance, life insurance itself represented 38 percent of 1984 premiums in this segment of the industry, followed by annuities at 32 percent, and health insurance premiums at 30 percent, Premiums net of benefits paid came to $74 billion in 1984 and an estimated $81 billion in 1985. The life insurance in force in the United States as of 1985 exceeded $5.9 trillion.

For the property and casualty insurance portion of the industry, the Insurance Information Institute reports net premiums written (premiums retained net of business reinsured) as

$116 billion for 1984 and an estimated $135 billion for the next year. The industry sustained an estimated underwriting loss of roughly $20 billion in 1985, marking the seventh consecutive year that such losses were posted, but in 1985, as for most of the past years of underwriting losses, insurance companies earned enough on their invested funds to show an industry-wide profit, The Insurance Information Institute estimates that in 1984, the exception to this pattern, underwriting losses of $20.5 billion exceeded net investment income by nearly $3 billion.

Information from the Swiss Reinsurance Company indicates that the U.S. insurance market is the largest by far in the world, accounting for 48 percent of worldwide premiums (excluding Communist countries) in 1983. Japan, the second largest national market, followed at about 15 percent, with the members of the European Community accounting for another 22 percent of world premiums. In 1983, the United States was second only to Switzerland in insurance premium receipts per capita, and was second to none in terms of the size of the insurance industry as a percentage of gross domestic product.

Total employment in all portions of the U.S. industry reached nearly 1.8 million in 1984. More than 1.2 million Americans worked for insurance carriers, with the remainder employed by agencies, brokers, and related service providers.

Measuring Foreign Activity in Insurance Services

premium receipts give the basic measure of international business in life insurance. In the balance of payments, however, benefits paid should be subtracted from receipts. Because the data on benefits paid internationally are inadequate, the balance of payments impacts can only be approximated. This entails basing claims for international payouts on U.S. premium/benefit ratios and available information on international premiums, and, for reinsurance, premium/claim ratios available on an annual basis from the Department of Commerce.

For property and casualty business, the fundamental measure of international activity is net premiums underwritten, representing total premiums net of reinsurance ceded. As in life insurance, a lack of data on international claims payments means approximations must be used.

Structure and Nature of Industry Practices Internationally

Insurance companies can seek international business by establishing or acquiring affiliates, designating authorized agents among domestic insurers in the foreign market, or entering the reinsurance market. Other than for reinsurance, a company must have a foreign presence to market most types of policies, if only because of government regulations, which commonly prohibit direct imports—i.e., selling policies to residents from a base outside the country's border.

Freedom to trade, in the jargon of the insurance industry, means the ability to do business in a country without having established a subsidiary there. This implies that the insurer can serve clients without meeting the financial requirements (primarily, capital adequacy) imposed by government regulations (nominally intended to protect consumers against the risk of a bankrupt insurer unable to pay legitimate claims). Typically, government regulations specify the minimum capital the insurer must hold within the nation's borders, A foreign company must thus have a local presence to participate in the market, but other nontariff barriers may keep foreign insurers out anyway.[10] When permitted, however, unadmitted insurers may have greater freedom from regulatory constraints than local firms, subsidiaries, or agents.

In contrast, the market for very large policies tends to be a global one. For jumbo risks, reinsurance, or worldwide coverage for an MNC,

[10]Hindley, for instance, cites the Japanese market for whole life insurance as being among the most protected in the world. See B. Hindley, "Economic Analysis and Insurance Policy in the Third World, " Thames Essays No. 32, London, Trade Policy Research Centre, 1982, p. 16.

the number of actors on either side of the market is small enough that prospective insurers have little need for a foreign presence. Underwriters and other professionals may be sent overseas to analyze risks and help determine contract terms, but these are simply costs of doing business; they will enter the balance of payments as travel, When claims arise, the insurer may choose to have them examined and validated by a local claims agent (who may or may not be an employee of the insurer or of an associated firm); alternatively, the insurance company may send an employee from its home office to the site. To some extent, then, volumes of international trade in insurance services will be determined by the corporate practices of the companies involved.

The U.S. market is one where foreign firms can sell policies as unadmitted insurers if they wish. Nonetheless, the market here is so large and populated with so many insurance companies that most foreign entrants have chosen to establish or acquire wholly owned or majority-owned affiliates, The most prominent exception, Lloyd's Underwriters, does a substantial business in the United States as an unadmitted insurer. Lloyd's accounts for some 95 percent of the total value of all trust accounts established by unadmitted insurers and registered with the National Association of Insurance Commissioners.

In Europe, the original Treaty of Rome, which established the European Community (EC), called for free trade in insurance, but this has been achieved to only a limited extent. An insurance company with headquarters in any member country can open an office and conduct business in any other EC state. Total financial reserves within the EC become the yardstick for capital adequacy. In contrast, a firm with headquarters outside the Community must meet capital requirements on a country-by-country basis. (This has major competitive implications because large EC insurance companies can economize on their capital needs more effectively than outsiders.)

Foreign Revenues in Insurance

As shown in table 32, OTA estimates that non-U.S. premium receipts of U.S. insurance affiliates abroad came to $9.4 to $11.3 billion in 1982, $10,1 to $12,1 billion in 1983 and $11.0 to $13.0 billion in 1984, These figures include only premiums, not payments on claims. In addition, American firms have had annual premium receipts on direct international business running in the range of $0,2 to $0.6 million for life and health insurance, and $1.5 to $2. o billion for property and casualty insurance. International reinsurance added another $1.1 billion in premium receipts in 1984, The midrange estimates for total foreign receipts of U.S. insurance firms would be about $13.4 billion in 1982, $14,3 billion in 1983, and $15.3 billion in 1984, excluding investment income.

For foreign firms operating in the U.S. market, OTA's midrange estimates for total premium receipts (including reinsurance) are $22.5 billion for 1982, $20.1 billion for 1983, and $22.2 billion for 1984. Excluding reinsurance and Lloyd's, affiliates account for nearly all the U.S. market share of foreign firms. Reinsurance premiums in the U.S. market generated $2.4 billion for foreign firms in 1984.

Balance of Payments in Insurance Services

Cross-border insurance affects the balance of payments not only through premiums but also through claims paid by insurers, Both premiums and claims flows, of course, travel

Table 32.—Foreign Revenues in Insurance (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$1.7- 2.6	$ 1.7- 2.6	$ 1.7- 2.6
Affiliate sales	9.4-11.3	10,1 -12.1	11.0 -13.0
Reinsurance exports	0.9	1.0	1.1
	$12.0 -14.8	$12.8 -15.7	$13.8 -16.7
U.S. revenues of foreign firms:			
Direct imports	$2.1	$2,2	$2.4
Affiliate sales	16.9-19.0	14.7 -16.5	15.2 -20.3
Reinsurance imports	2.1	2.3	2,4
	$21,1 -23.2	$19.2 -21.0	$20.0 -25.1

SOURCE Off Ice of Technology Assessment

in both directions, but the claims flows on international direct insurance are not known. They can be crudely estimated, as noted above, based on domestic premium/claim ratios and international reinsurance premium/claim ratios. Using such data, and the estimates of cross-border premium receipts given above, the U.S. current account deficit in the insurance sector would be $0,5 to $1,1 billion in 1982, $0.4 to $1,1 billion in 1983, and $0.2 to $0.9 billion in 1984. Gross U.S. receipts (including both premium receipts of U.S. insurers and claim receipts from foreign insurers) are estimated to have been $5.6 to $7.7 billion in 1982, $6.1 to $8.2 billion in 1983, and $6.9 to $9.1 billion in 1984. OTA estimates gross payments (including both premium payments to foreign insurers and claim payments by U.S. insurers to foreign clients) at $6,3 to $8.6 billion in 1982, $6.7 to $9.1 billion in 1983, and $7.4 to $9,8 billion in 1984.[11]

[11]The higher estimate for premium receipts implies a correspondingly higher estimate for claim payments, because claims are approximated as a percentage of receipts. For this reason, the range for net receipts is less than implied by comparing the ranges for gross receipts and gross payments.

The figures above for U.S. insurance imports include estimated premiums flowing to U.S. insurance affiliates abroad from clients in the United States, Data from BEA direct investment surveys indicate that foreign insurance affiliates realized 13.8 percent of their income in 1982 and 11.8 percent in 1983 from business with the United States, Even though the affiliates are U.S.-owned, the premiums count as imports in a balance of payments sense,

Geographic Distribution of International Activity in Insurance

Data on the geographic distribution of insurance receipts and payments are not available. For foreign affiliates, table 33 summarizes the geographic distribution of total income (interest income as well as premiums) based on the Commerce surveys of FDI. Premiums cannot be isolated from other income of foreign affiliates. As table 33 indicates, about one-fourth of the income of foreign insurance affiliates comes from policies written in developing countries. European and Canadian ownership accounts for roughly 90 percent of the total income of the U.S. insurance affiliates of foreign firms.

Table 33.—International Insurance Activity (billions of dollars)

	Foreign affiliates of U.S. firms		U.S. affiliates of foreign firms[a]	
	1982	1983	1982	1983
Total income of affiliates. .	$16.8	$16.5	$23.6	$21.7
Distribution of income of affiliates:				
Canada	27.60/o	29.30/o	21.1 %	19.70/0
Europe.	38.1	36.0	68.9	69.1
Japan.	4.0	5.4	NA	NA
ANZSA[b].	3.7	3.9	—[c]	—[c]
Latin America.	23.2	21.3	0.3	0.3
Other	3.4	4.2	NA	NA
	100.0°/0	100.00/0	100.0"/0	100.0 "/0

NA = not available.
[a]Includes foreign-owned U S, firms whose ultimate beneficial owners are U S firms or individuals
[b]Australia, New Zealand, and South Africa.
[c]Negligible
NOTE: Totals may not add due to rounding.

SOURCES Foreign affiliates, 1982: *U.S Direct Investment Abroad: 1982 Benchmark Survey Data* (Washington, DC: U S. Department of Commerce, December 1985), Foreign affiliates, 1983: *US. Direct Investment Abroad: Operations of US. Parent Companies and Their* Foreign Affiliates, *Preliminary 1983 Estimates* (Washington, DC: U S. Department of Commerce, December 1985); U.S. affiliates, 1982: *Foreign Direct Investment in the United States: Operations of* US. *Affiliates* of *Foreign Companies, Revised 1982 Estimates* (Washington, DC: U.S. Department of Commerce, December 1985), U.S. affiliates, 1983: *Foreign Direct Investment in the United* States *Operations of U.S. Affiliates of Foreign Companies, Preliminary 1983 Estimates* (Washington, DC: U S Department of Commerce, December 1985).

INVESTMENT BANKING AND BROKERAGE SERVICES

This category includes a broad range of financial services, Although the primary focus is on investment banking and brokerage (buying and selling securities), the data presented below on foreign revenues include some activities of credit agencies, savings and loans, lease financing firms, credit card operations, and other financial services. OTA has excluded the following categories from the estimates in this section: commercial banking, insurance, franchising and, to the extent possible, lease financing (see sections on "Commercial Banking," "Insurance, " "Franchising," and "Leasing"). Because fee income for standard commercial banking services can seldom be separated from other financial service revenues of commercial banks, these other revenues have been included in the "Commercial Banking" section, although conceptually they belong here.

The heart of the investment banking business consists of handling capital transactions for companies and wealthy individuals. Major services include helping corporations raise capital, arranging financing for large projects (e.g., real estate developments), and aiding in mergers and acquisitions. To be consistently successful in buying and selling securities, an investment banker must have intimate working knowledge of capital markets. The bank must be prepared to enter the market at any time in response to a client's business needs. Given the complex, organic nature of capital markets, an investment banker cannot expect to be away from them for long without losing the skills that clients depend on.

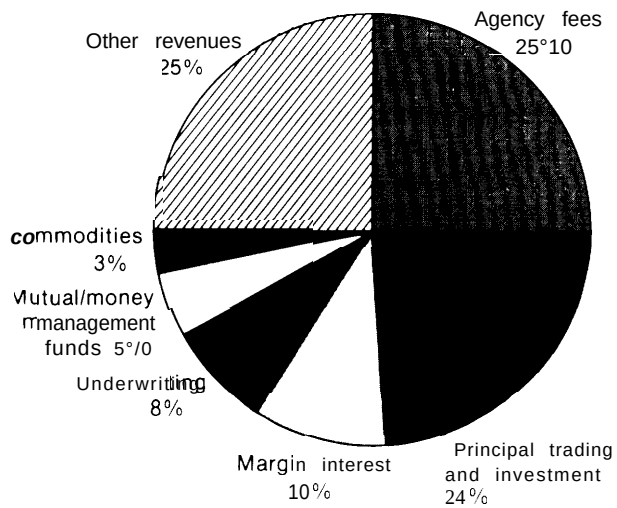
Domestic Industry

While more than 10 large U.S. investment banks have been purchased or have become publicly traded firms over the last half-dozen years, a number of the New York houses (and their overseas subsidiaries) remain private corporations, typically partnerships, As such, they have not been required to file 1O-K earnings statements with the Securities and Exchange Commission. Many of the publicly held securities firms are subsidiaries of multi-industry corporations, which disclose little useful data on subsidiaries in their annual statements. As a result, the size of the industry can only be approximated.

Total revenues in the securities industry were estimated at about $38 billion in 1985. The trade journal *Financial World* placed brokerage revenues at $30 billion in 1984, including brokerage services and underwriting of new issues but excluding merger and acquisition services, broken down as shown in figure 25. Agency fees, primarily brokerage commissions, accounted for about one-quarter of revenues, as did principal trading and investment, in which firms buy and sell securities for their own accounts. Margin interest, which includes earnings from renting shares to help cover short positions, followed.

Estimates of total earnings from mergers and acquisitions vary. Each year *Fortune* magazine publishes figures for fees earned by investment banks on the largest mergers and acquisitions. In 1985, 32 mergers and acquisitions worth $67.4 billion (out of a U.S. total of about $200 billion) earned the participating investment banks an estimated $341 million in fees. *Fortune* put the fees on the 32 largest deals in 1984, worth a total of $60 billion, at $284 million,

Figure 25.— U.S. Securities Industry Revenues, 1984



SOURCE P. Hall, "Taking Stock of the Brokerage Industry, *Financial World*, Jan 9-22, 1985, pp 17-21

Employment in the securities industry averaged 341,000 during 1984.

Measuring Foreign Activity in Financial Services

Given the uncertainties surrounding the size of the domestic industry, the scarcity of data on the foreign revenues of U.S. investment banks and brokerage firms should be no surprise. Foreign revenues must be estimated indirectly. There are two possible approaches. The first begins with estimates of the level of foreign activity–foreign securities issued in the United States, U.S. purchases of foreign securities, international mergers and acquisitions, Eurobond and syndicated loan activity, Revenues can then be estimated based on typical fee structures. The second method is based on data for a subset of firms in the Commerce Department's direct investment surveys, which cover exports of U.S. parents maintaining overseas affiliates, including exports of financial services, While the two methods yield similar results, as indicated below, the uncertainties remain large,

Structure and Nature of Industry Practices Internationally

American firms provide investment banking and brokerage services for foreign customers in the U.S. market, in foreign national markets, and in Euromarkets and other less regulated markets. Transactions may take place through U.S. offices, foreign offices, or through affiliates. With major clients consisting of large corporations, many of them multinational, U.S. investment banks have sought foreign establishments on a regional basis, but generally do not need offices in all the major countries in a region (not even in Europe). They do need offices wherever there are important capital markets: New York, London, Singapore, and Tokyo, perhaps Zurich as well. [By the same token, investment banks with headquarters elsewhere that expect to do business internationally must maintain offices in New York.)

As for many other service products, the performance of an investment bank can only be evaluated after the fact; therefore, bankers depend heavily on their reputation and on client relationships built up over the years. These relationships entail deep knowledge of the client's needs and ways of doing business; to maintain its reputation and hold on to its clients, the banking firm must, of course, continue to service these needs effectively. Losing a major client through unsatisfactory performance can do great harm to the bank's reputation. In part, it is these relationships, along with the small number of internationally active investment banks, that makes a presence in every country unnecessary. The U.S. banking house will involve overseas partners as needed when working with each client.

A total of 34 U.S. financial service firms owned or controlled 129 foreign affiliates, including nonfinancial affiliates, in 1983. The total number of foreign financial service affiliates is much larger—800 in 1983, a drop of about 17o from the previous year—with the rest owned or controlled by U.S. firms whose primary lines of business place them in other industries. These affiliates include not only investment banking and brokerage operations, but credit agencies, savings and loan associations, lease financing operations, and other nonbank financial service affiliates.

Beyond selling financial services locally, the overseas affiliates of American firms export financial services to the United States in substantial volume, and in particular supply services to their U.S. parents. Majority-owned affiliates alone sold $3.6 billion in financial services to the United States in *1982,* all but **$300** million to their parent firms, and *$4.5* billion in **1983,** with $4.3 billion representing affiliate-parent sales.

Foreign Revenues in Financial Services

Table 34 contains OTA's estimates of the foreign revenues of U.S. financial service firms (excluding commercial banks), along with the U.S. revenues of foreign firms, The decrease from *1982* to *1983* resulted in part from the drop

in total number of affiliates noted above; sales by minority-owned affiliates were nearly $3 billion greater in 1982 than in 1983. Most foreign revenues come from affiliate sales, with less than 20 percent representing direct exports. The U.S. revenues of foreign firms are similarly weighted toward affiliate sales. Data to estimate the relative proportions of income from interest and fees do not exist.

Balance of Payments in Financial Services

As table 34 notes, a midrange estimate for exports of financial services by U.S. firms would be perhaps $1,0 to $1.5 billion during each of the years 1982 to 1984. In addition, the U.S. affiliates of foreign firms sell financial services to non-U. S. customers. Such transactions also count as U.S. exports in a balance of payments sense, but there are no data on their magnitudes, If U.S. affiliates of foreign firms sold as high a percentage of their services abroad as foreign affiliates of U.S. firms sold back to the United States, then 35 to 40 percent of their sales may have been exported from the United States. Total sales by foreign affiliates in the United States were $8.2 billion in 1982 and $11,1 billion in 1983. A reasonable upper limit on exports by the U.S. affiliates of foreign firms would then seem to be about $3 billion in 1982 and $4 billion in 1983.

Foreign-owned firms sold perhaps $0.5 billion directly to the United States in the form of imported financial services during each of the years 1982 to 1984. The other major source of imported financial services, the foreign affiliates of U.S. firms, had much higher sales, as pointed out above. U.S. sales accounted for 36 percent of total sales for majority-owned foreign affiliates in 1982 and 43 percent in 1983.

Table 34.—Foreign Revenues in Investment Banking and Brokerage Services[a] (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$ 0.5- 1.5	$1.0-2.0	$1.0-2.5
Affiliate sales	10.8	7,7	NA
Majority-owned	6.3	6,0	NA
Minority -owned[b]	4.5	1,7	NA
	$11.3 -12.3	$8.7-9.7	
U.S. revenues of foreign firms:			
Direct imports	$ 0.0- 0.5	$0.0-0.5	$0.0-0.5
Affiliate sales	$ 4.9. 6.6	$6.7-8.9	NA
	$ 4.9- 7.1	$6,7-9,4	

NA = not available
[a]All figures exclude commercial banking revenues
[b]Includes some unknown amount of U S revenues

SOURCE Off Ice of Technology Assessment

Given the many uncertainties in this industry, particularly the lack of data on non-U. S. sales of U.S. affiliates of foreign firms, OTA's estimates span a considerable range. It seems likely that the U.S. balance of payments position in this sector was at worst a deficit of perhaps $1.5 to $2.5 billion annually over 1982 to 1984—which would be due primarily to imports by U.S. parent firms from their foreign affiliates—and at best a surplus of more than $2.o billion. Midrange estimates would be: a deficit of $0.4 billion in 1982, a surplus of $0.3 billion in 1983, and a surplus of $0.9 billion in 1984.

LEASING

With a *financial lease* ownership of the leased item transfers ultimatel$_y$ to the lessee, while the lessor retains title with an *operating lease* or rental agreement. In both cases, the lessee makes pre-arranged payments for the use of the leased assets. Financial leasing may be either *direct,* in which the lessor provides full financing, or *leveraged,* in which third-party investors may provide debt funding in addition to lessor financing, In recent years, tax advantages have encouraged the rental or leasing of computers, automobiles and trucks, and other capital equipment—e. g., industrial machinery. Small and/or rapidly expandin$_g$ firms with limited sources of capital also find it to their advantage to rent or lease. Because financiaI leases function much like purchases of goods on credit, the emphasis in this section is on operating leases, which are unambiguously service products, However, separation of the two has not always been possible,

Equipment manufacturers may operate subsidiaries that rent or lease their own products (e.g., computers). Banks have also entered the leasing business alongside independent leasing and rental firms. OTA has been unable to separate foreign leasing by U.S. banks from other revenue-generating bank activities, so that bank leasing revenues are included in the "Commercial Banking" section. The estimates in this section cover only firms whose primary business is leasing, including, however, subsidiaries of banks and equipment manufacturers set up for this purpose,

Domestic Industry

New lease receivables reached an estimated $74.5 billion in 1984, and $80,5 billion in 1985, Table 35 shows that new leases have remained at a level of about 27 to 28 percent of business investment in capital equipment over the past few years, following rapid growth during the latter part of the 197os. Because no single SIC group encompasses all leasing activity, and because organizations ranging from insurance companies and banks to captive financing firms engage in leasing, Federal Government sources do not provide information on the number and size of firms constituting this sector.

No reliable estimates of employment in the U.S. equipment rental and leasing industry are available.

Measuring Foreign Activity in Equipment Leasing

Foreign leasing may be either *cross-border,* where lessor and lessee are located in two different countries, or *indirect,* where the lessor is a foreign affiliate. No comprehensive data on cross-border leasing revenues are available; the estimates below are based on partial data from major international lessors as well as OTA's estimates of internationally leased assets,

Structure and Nature of Industry Practices Internationally

The Department of Commerce places the world leasing market, in terms of new lease investment, at approximately $92 billion in 1982, with developed countries accounting for over 95 percent of the total, and the United States alone about two-thirds of the worldwide total. Japan was the second largest market for new lease investment at $9.2 billion, or roughly 10 percent of the world total (figure 26).

As with leasing in the U.S. market, many types of firms engage in leasing internationally. Tax policies affect international leasing patterns, along with the other factors that have led to extensive leasing in the United States—reduced front-end expenditures for capital goods, greater flexibility for the lessee, and, on the lessor's side, diversification of asset-earning portfolios.l2 Among the tax benefits peculiar to cross-border leasing, "double-dipping" occurs when both lessor and lessee can claim tax preferences because of differing national definitions and/or tax treatment of leased assets, Recent U.S. legislation has limited the extent to which U.S. tax benefits can be transferred

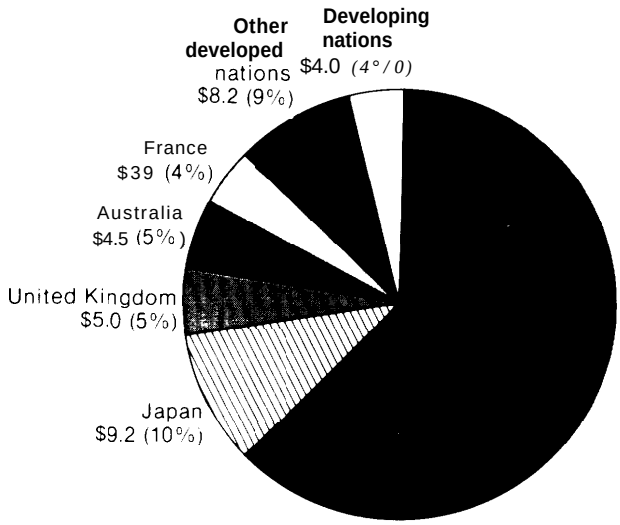
[12]On the financial benefits of leasing, see *World Leasing* **yearbook** 1985 (London: Hawkins Publishers Ltd., 1985).

Table 35.—Leasing as a Percentage of Business Investment in Equipment

	Equipment leasing (new lease receivables)	Business investment in equipment	Leasing as a percent of business investment in equipment
	(billions of dollars)		
1978	$26.5	$170.2	15.60/o
1980	43.5	197.8	22.0
1982	57.6	207.5	27.8
1984	74.5	274.5	27.1
1985[b]	80.5	300.1	26.8

[a]Business investment in equipment represents private nonresidential investment in producers' durable equipment.
[b]Estimated.
SOURCE 1986 *U.S Industrial Outlook* (Washington, DC:U.S Department of Commerce, January 1986), p. 53-1

Figure 26.–Global Leasing Market (new leases, 1982) (billions of dollars)



TOTAL: $92 billion

SOURCE Computed from data in *Competitive Assessment of the U S Equipment Leasing Industry* (Washington, DC Department of Commerce, International Trade Administration, March 1985), p 23

to non-U.S. entities via cross-border leasing. As a consequence, U.S. lessors have evidently curtailed their cross-border business.

For independent equipment leasing and rental firms, the 1982 Census of Service Industries provided information, for the first time, on the international business of U.S. operating lessors. The Census identified over 17,000 operating leasing establishments, excluding automobile and computer rental/leasing. Of these, less than 3 percent (481 establishments, mostly among the larger firms, as indicated by a share of total industry receipts of 7 percent) indicated that some fraction of their receipts came from nonresidents of the United States. Not all of these establishments reported the level of their foreign receipts; of those that did, an average of one-third of total receipts represented leases with nonresidents. Table 36 indicates the relative importance of heavy construction equipment in foreign leasing.

U.S. lessors also operate through affiliates and subsidiaries abroad. The 1982 benchmark survey of FDI indicated that 9 U.S. equipment rental and leasing firms maintained 19 affiliates abroad (including nonleasing affiliates).

Table 36.—Receipts From Nonresidents for U.S. Leasing Establishments Reporting Nonresident Receipts, 1982

Equipment leasing, except finance leasing	43.20/o
Rental of heavy construction equipment with operators	26.4
Equipment rental	21.5
Leasing and rental of heavy construction equipment without operators	4,2
Overall	32.8 o/o

SOURCE: 1982 Census of Service *Industries: Miscellaneous Subjects* (Washington, DC: U S Department of Commerce, Bureau of the Census December 1985), p 142

The survey also identified 84 other affiliates classified as equipment leasing and rental firms, which emphasizes the importance of the leasing affiliates of U.S. parents whose primary business places them in other industries, (Once again, these affiliate figures exclude automobile and computer rental and leasing firms; nor do they include banking and financial affiliates abroad that engage in leasing in addition to their other financial services activities.)

Foreign Revenues in Equipment Leasing

Table 37 summarizes OTA's estimates. At most direct cross-border leasing appears to generate about 25 percent of foreign revenues; leasing revenues of foreign affiliates account for the remaining 75-plus percent. While data on direct foreign leasing in the United States are almost totally lacking, the stream of revenues generated by cross-border leasing into the United States seems to be less than $1 billion annually.

Table 37.— Foreign Revenues in Equipment Rental and Leasing (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:	$4.4-5.5	$4.5-5.6	$4.6-5.7
U.S. ***revenues of foreign firms:***			
Direct imports	$0.0-1.0	$0.0- 1.0	$0.0-1.0
Affiliate sales	0.2-0.3	0.2-0.3	0.2-0,3
	$0.2-1.3	$0.2-1.3	$0.2- 1.3

SOURCE Off Ice of Technology Assessment

Balance of Payments in Equipment Leasing

Because data on foreign leasing operations in the United States are so scarce, OTA could not estimate with confidence the U.S. current account balance in leasing, nor even determine whether the Nation runs a current account surplus or deficit in this category. However, it can probably be assumed that the annual current account surplus or deficit in leasing is less than $1 billion (table 37).

LEGAL SERVICES

Trade takes place when legal services are provided directly in foreign markets, or when foreign customers purchase them in the domestic market of the service provider. Specialized legal services supplied in conjunction with other services—e. g., accounting, management consulting, financial services—are generally treated as part of the service in question; this discussion covers only those business entities established primarily to supply legal services.

Domestic Industry

A growth industry in the United States, receipts for legal services have increased by 12 percent or more each year since 1979. The industry's revenues reached $55 billion in 1985. Most of the firms in the U.S. legal services industry are small, often practices with one or two lawyers and annual receipts of less than $100,000, In 1982, almost three-fourths of all firms in the industry had receipts of less than $250,000; fewer than 1 percent had receipts in excess of $5 million. The 1982 Census of Service Industries found that the 50 largest legal service firms that year accounted for about 7 percent of total industry receipts. According to that Census, business clients accounted for 49 percent of the industry's revenues, and individuals (including estates) 44.5 percent. The remainder represented government purchases of legal services and other sources of income.

About one-fourth of the 700,000-some people employed in legal services in 1985 were lawyers. About 70 percent of practicing attorneys work for legal service firms or in private practice, with the rest holding jobs in corporations, trade associations, government, and other organizations. Of those in the legal services industry, about 44 percent work in general practice, with 10 percent specializing in negligence, 7.4 percent in corporate law, and 5.4 percent in real estate,

Structure and Nature of Industry Practices Internationally

Trade in legal services takes two forms: lawyers and legal service firms can seek customers in foreign markets; they can also work in their domestic market, providing services to foreigners.ls Given the regulatory structures typical of the legal profession, American lawyers and legal service firms operating abroad generally provide legal consultation rather than practice in courts of law; they may give legal advice (notably, advice on U.S. law for foreign clients), engage in negotiations, prepare documents. The restrictions faced by American lawyers in foreign markets vary from country to country, and may include: citizenship requirements for admission to the local bar; restrictions to acting as legal advisors; restraints that prevent local and foreign attorneys from working for or with one another.

Foreign lawyers seeking to practice in the United States also must deal with restrictions, generally at the State level. Citizenship cannot be a requirement for bar admission, following a Supreme Court decision in 1973. In New York, the largest center of foreign legal activity in the United States and one of the four or five centers for international legal practices, consultants from foreign countries may be licensed without passing the bar exam, but licensed foreign legal consultants can only give

13 Much of the followin, discussion is based on S. M. Cone, III, "Government Trade Policy and the Professional Regulation of Foreign Lawyers, " unpublished manuscript, Feb. 8, 1986.

advice based on that received from a member of the New York bar. Pending proposals in the District of Columbia and Hawaii would create similar guidelines for the licensing of foreign attorneys, but a recently adopted Michigan rule, and a pending proposal in California, prohibit foreign attorneys from advising on State or Federal law, although permitting consulting on the laws of their own countries. Similarly, the Illinois Supreme Court recently rejected a petition that would have permitted foreign legal consultants to offer advice on U.S. and Illinois law.

Foreign Revenues in Legal Services

Table 38 summarizes estimated U.S. foreign revenues in legal services, as well as the U.S. revenues of foreign legal service providers. The figures on direct trade have been based on judgments of informed industry sources. Foreign affiliates of U.S. legal firms had negligible revenue in 1982 and 1983; most overseas operations represent a direct extension of a firm's domestic business, rather than a locally incorporated entity. The most recent Commerce survey of FDI, in 1983, reported no U.S. legal affiliates of foreign firms.

Balance of Payments in Legal Services

Essentially all of the foreign revenues in table 38, then, represent direct trade in legal services, as opposed to affiliate sales. The United States is almost certainly a net exporter of legal services, although the magnitude of the surplus is unlikely to be more than $1 billion annually.

Table 38.—Foreign Revenues in Legal Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$0.0-2.0	$0.0-2.0	$0.0-2.0
Affiliate sales	0.1	0.1	NA
	$0,1-2.1	$0.1-2.1	
U.S. revenues of foreign iirms:			
Direct imports	$0.0-1.0	$0.0-1.0	$0.0-1.0
Affiliate sales	—[a]		
	$0.0-1.0	$0.0- 1.0	$0.0-1.0

NA = Not available
[a]Negligible

SOURCE Office of Technology Assessment

LICENSING

Companies negotiate licenses for the use of patents, trademarks, and know-how, with charges in the form of royalties and license fees that normally depend on the licensee's sales volume. More so than franchising or leasing, this category of services is not an industry, but a business activity that cuts across most industries, goods-producing as well as service-producing. Unless otherwise noted, charges other than royalty and license fees—management fees, charges for the use of tangible property, fees for services rendered, film rentals—have been excluded from this category.

Domestic Industry

While licensing is common domestically as well as internationally, the Federal Government does not collect data on the extent of licensing payments within the United States.

Measuring Foreign Activity in Licensing

For analytical purposes, licensing between parent firms and affiliates must be distinguished from unaffiliated licenses. The latter can be assumed to represent arms-length transactions, with charges that reflect a market value. The former cannot, because multinationals make use of licensing fees to move funds internationally—e. g., seeking to minimize their worldwide tax bills, to circumvent foreign exchange restrictions. Outbound licensing, in which U.S. firms charge fees to foreign firms for patents, know-how, or trademarks, greatly exceeds inbound licensing.

BEA gathers quarterly data on receipts and payments of royalties and license fees. The BEA data can be disaggregated into affiliated and unaffiliated receipts and payments, and subdivided to some extent by industry and geo-

graphic region. Unfortunately, the disaggregation cannot be extended to new licensing agreements versus receipts and payments on continuing agreements. Because many agreements remain in force for years, there is no way to directly determine trends in new licensing agreements over time. In addition, some types of licenses—primarily technology exchange agreements, in which the parties do not assign explicit prices—are not reported.

Structure and Nature of Licensing Practices Internationally

For licensing between affiliated firms, the *1982* outbound benchmark of U.S. direct investment abroad provides the maximum level of available detail by industry. Table 39 shows that net licensing receipts of U.S. parent firms have been concentrated most heavily in manufacturing, particularly nonelectrical machinery (which includes computers and office equipment) and chemical products (including pharmaceuticals). Service industry parents accounted for $135 million in net receipts, less than 4 percent of the total.

Table 39.—Distribution by Industry of 1982 Net Licensing Receipts of U.S. Parent Firms From Their Foreign Affiliates[a]

	Percent of all affiliated net licensina receipts
Manufacturing	78.20/o
Food and kindred products	3.1 "/0
Chemicals and allied products	17.5
Primary and fabricated metals	1.7
Machinery except electrical	36.0
Electric and electronic equipment	5.2
Transportation equipment	1.5
Instruments and related products	5.2
Other manufacturing	8.0
Other industries	21.8
Wholesale trade	17.1
Services[b]	3.8
Other	0.8
Total	100.0 "/0
Total net receipts	$3.57 billion

[a]Distribution by industry of U.S Parent
[b]Also includes construction, transportation, communication, banking, finance, insurance, real estate, and retail trade,
NOTE' Subtotals may not add due to rounding

SOURCE: *U.S. Direct Investment Abroad: 1982 Benchmark Survey Data* (Washington, DC: U.S Department of Commerce, Bureau of Economic Analysis, December 1985)

The data on the receipts and payments of the U.S. affiliates of foreign parents—i.e., inbound affiliated receipts and payments—provide less detail. Manufacturing industries account for about half of all royalty and license payments of U.S. affiliates, with chemicals making up half the payments in manufacturing.

While the dollar values assigned to unaffiliated royalty and license fees are more meaningful, the relatively high level of aggregation hinders interpretation. Moreover, royalty and license fees for patents, trademarks, and know-how cannot be separated from other fee and royalty charges—e. g., management fees, However, BEA believes that royalty and license fees represent the predominant share of unaffiliated fee and royalty data. Unaffiliated receipts by U.S. firms and individuals exceeded payments by $1.3 billion in 1982 and 1983, and $1,2 billion in 1984. Payments grew more rapidly over the period, increasing by 23 percent from 1982 to 1984, with receipts essentially unchanged. Figure 27 shows receipts by industry; there are no comparable data for payments.

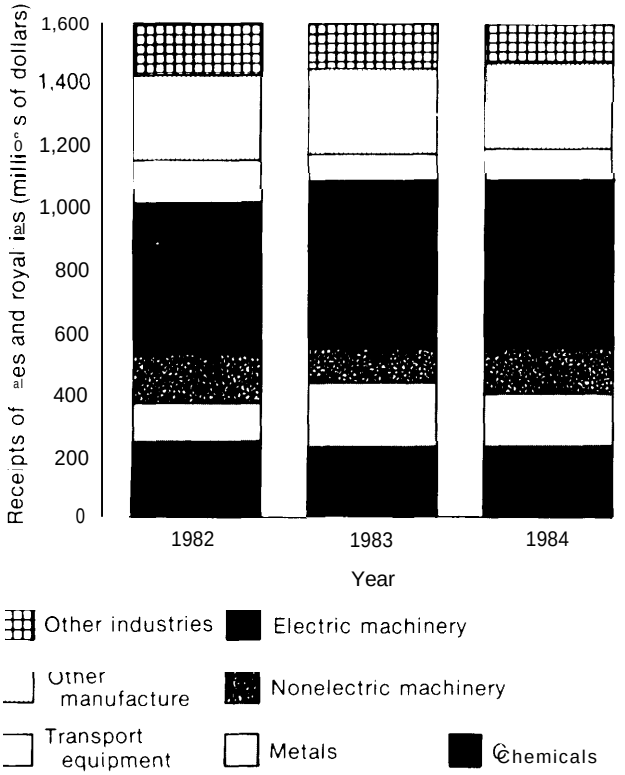
Balance of Payments in Licensing

Table 40 summarizes the impact of licensing on the U.S. balance of payments. The overall surplus has been about $4.5 billion, one of the larger surpluses in the service categories. Net affiliated receipts accounted for 80 percent of the total surplus in 1982 and 1983, and 84 percent in 1984.

Geographic Distribution of Licensing Activity

Table 41 summarizes net receipts (at the maximum level of available detail) of affiliated royalty and license fees in manufacturing industries by location of the foreign affiliate. The industrialized nations account for almost all of the net receipts, 92 to 95 percent annually over the period 1978-84, with the most rapid growth in receipts from Canada, the non-Latin American developing nations, and the Australia/New Zealand/South Africa (ANZSA) group.

Figure 27.— U.S. Unaffiliated Receipts of Fees and Royalties by Industry, 1982-84



NOTE Data include royalties and license fees and other unaffiliated fees

SOURCE Department of Commerce, Bureau of Economic Analysis, unpublished data

Figure 28 gives the distribution of unaffiliated fee and royalty receipts and payments for 1984. The United States ran a surplus with all regions, including a surplus of $471 million with Japan and $371 million with Western Europe.

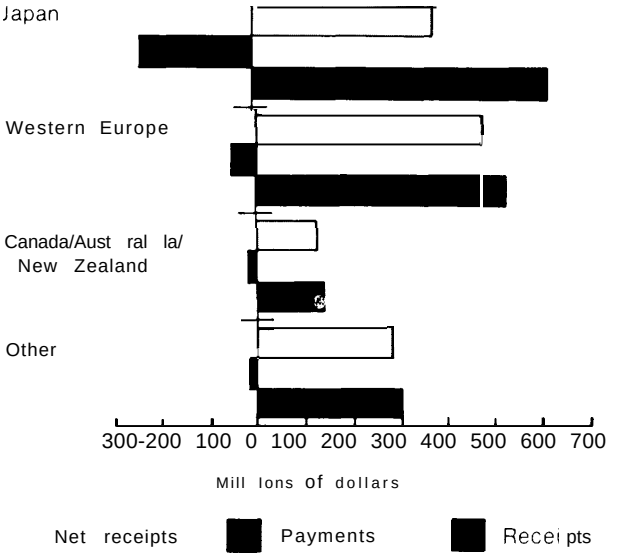
Table 40.– Balance of Payments in Licensing (billions of dollars)

	1982	1983	1984
U.S. receipts:			
Unaffiliated ...	$1.5	$1.6	$1.6
Affiliated inbound	—a	—a	—a
Affiliated outbound	3.6	3.5	3.8
	$5.2	$5,2	$5.5
U.S. payments:			
Unaffiliated .,	$0.3	$0.3	$0.3
Affiliated inbound	0.4	0.5	0.6
Affiliated outbound	—a	—a	—a
	$0.7	$0.8	$1.0
U.S. net receipts:			
Unaffiliated .,	$1.3	$1.3	$1.2
Affiliated inbound	–0,3	– 0.4	–0.6
Affiliated outbound	3.6	3.5	3,8
	$4,5	$4.4	$4.5

a Less than $100 million NOTE Totals may not add due to rounding

SOURCES *Survey of Current Business*, various issues U S D/reef *Investment Abroad: 1982 Benchmark Survey Data* (Washington, DC U S Department of Commerce, Bureau of Economic Analysis, December 1985)

Figure 28.– U.S. Unaffiliated Fees and Royalties, 1984



SOURCE C L Bach, ' U S International Transact Ions, Fourth Quarter and Year 1984, ' *Survey of Current Business*, March 1985 pp 29-58

Table 41 .—U.S. Parents' Net Affiliated Receipts of Royalties and License Fees in Manufacturing

	1978	1980	1982	1983	1984	Percent increase 1984 over 1978
			(millions of dollars)			
Canada	$279	$ 334	$ 364	$ 400	$ 439	57.3 "/0
United Kingdom	350	433	418	408	436	24.6
Other Europe	1,132	1,586	1,316	1,514	1,517	34,0
Japan	273	NA	261	335	380	39,2
ANZSA [a]	80	NA	99	90	120	50,0
Latin America	86	138	102	76	107	24.4
Other .,	39	66	67	69	68	74.4
	$2,242	$3,014	$2,627	$2,891	$3,067	36.80/o

[a] Australia, New Zealand and South Africa

NOTE Totals may not add due to rounding

SOURCES 1978.83 :*Service Transactions in the U S International* Accounts, 1977-7983 (Washington, DC U S Department of Commerce, Bureau of Economic Analysis, n o date), and 1984: U S Department of Commerce Bureau of Economic Analysis, u n published data

MANAGEMENT, CONSULTING, AND PUBLIC RELATIONS

Companies in this industry group provide management and administrative services, public relations services, management consulting, economic, behavioral, and marketing research, and related service products on a contract or fee basis.[10]

Domestic Industry

Firms in this sector had sales estimated at $28 billion in 1984. Receipts were $24.8 billion in 1983 and $20.6 billion in 1982. As reported in the 1982 Census of Service Industries and indicated in figure 29, management consulting has been the biggest segment of the industry, which is populated by relatively small enterprises. Of nearly 39,000 consulting firms (and more than 41,000 establishments) identified in the 1982 Census, only 88 had revenues of more than $10 million. The 50 largest took in 17.6 percent of total industry revenues.

As might be expected from the rapid growth in revenues, employment has also expanded—from 366,000 in 1982 and 403,000 in 1983 to 458,000 in 1984.

Measuring Foreign Activity in Consulting Services

Many firms provide consulting and management services—e.g., to their foreign subsidiaries—as part of other businesses. So far as possible, these activities, along with consulting provided by accounting and financial service firms, law offices, health service management firms, etc., have been excluded from the estimates below.

[14]The following are not included:

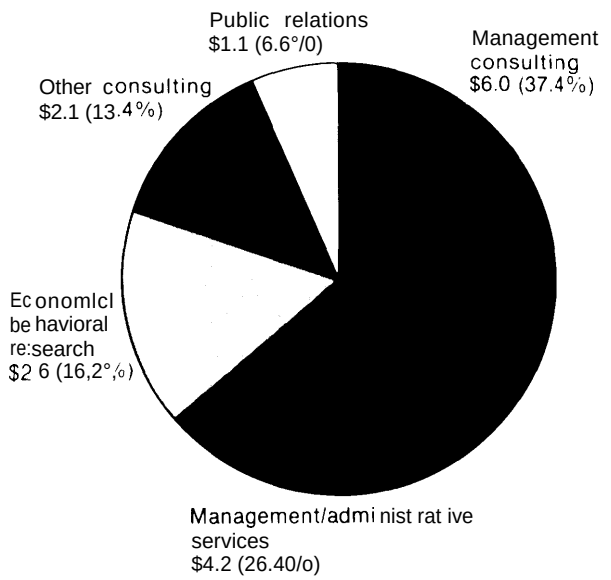
- consulting supplied as a byproduct of other services (see, for example, "Accounting" and "Advertising");
- firms engaged primarily in the business of providing information, database, and videotex services (see "Information Services"];
- firms providing management services that also include operating staff (hotel management, computer facilities management]; and
- firms providing construction management services (see "Construction" and "Engineering, Architecture, and Surveying").

Structure and Nature of Industry Practices Internationally

The 1982 benchmark survey of U.S. FDI revealed that U.S. firms had direct equity positions in 118 foreign management, consulting, and public relations affiliates, The parent firms of more than half the affiliates fell in industries other than management, consulting, and public relations, Independently, the U.S. International Trade Commission (ITC) estimated in 1981 that 75 to 80 American consulting firms maintained overseas offices.

Slightly more than 4,000 of 41,000 establishments reported sales to nonresidents in the 1982 Census of Service Industries. As tables 42 and 43 indicate, for those with sales to nonresidents, the share was substantial, 22.6 percent of receipts overall. These 4,000-plus establishments held a combined share of the U.S. market in 1982 of about 18 percent, indicating that

Figure 29.— Management, Consulting, and Public Relations Industry Receipts, 1982 (billions of doilars)



TOTAL: $16.0 billion

SOURCE: *1982* Census *of Service Industries: Miscellaneous Subjects* (Washington, DC: Department of Commerce, Bureau of the Census, December 1985), p 142

Table 42.—Percent of U.S. Management, Consulting, and Public Relations Establishments Indicating Sales to Nonresidents, 1982

Economic and behavioral research	10.5 %
Management consulting	12.9
Public relations	8.8
Management and administrative services	4.2
Overall	9.80/o

SOURCE *1982 Census of* Service *Industries Miscellaneous Subjects* (Washington, DC U S Department of Commerce, Bureau of the Census, December 1985) p 142

Table 43.—Percent of Receipts From Nonresidents for U.S. Management, Consulting, and Public Relations Establishments Reporting Nonresident Sales, 1982

Economic and behavioral research	23.8%
Management consulting	17.6
Public relations	14.8
Management and administrative services	35.4
Overall !	22.6°/0

SOURCE 1982 *Census of Service Industries Miscellaneous Subjects* (Washington DC U S Department of Commerce, Bureau of the Census, December 1985), p 142

exporting firms were somewhat larger than average. This was particularly true for management and administrative consulting.

Incomplete information on foreign consulting activity in the U.S. market indicates that total sales were well under $1 billion annually over the 1982-84 period, mostly provided by overseas affiliates of U.S. firms. The latter get roughly one-third of their sales through transactions with U.S. parent firms. Nevertheless, U.S. purchases of management, consulting, and public relations services from foreign affiliates come to only 2 or 3 percent of total domestic sales.

Foreign Revenues in Consulting Services

Table 44 indicates that direct exports accounted for perhaps one-third to one-half of total foreign revenues, with the remainder generated by affiliates. U.S. imports of management, consulting, and public relations services are unknown, but probably amount to less than $0.5 billion annually exclusive of sales to the United States by the foreign consulting affiliates of U.S. firms.

Table 44.—Foreign Revenues in Consulting Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$0.5-1.1	$0.6- 1.4	$0.6-1.6
Affiliate sales	1.2	1.2	NA
Majority-owned	1.2	1.2	NA
Minority-owned	—[a]	—a	NA
	$1.7-2.3	$1.8-2.6	
U.S. revenues of foreign firms:			
Direct imports	$0.0-0.5	$0.0-0.5	$0.0-0.5
Affiliate sales	NA	0.1	NA
		$0.1-0.6	

NA – Not available
aNegligible
SOURCE Off Ice of Technology Assessment

Balance of Payments in Consulting Services

OTA cannot say with certainty whether the United States runs a surplus or deficit in direct trade of consulting services, but the balance either way is probably less than $1 billion. The estimates in table 44 indicate that the Nation maintains a positive balance in direct trade among unaffiliated parties This is offset to some degree by imports from U.S. affiliates abroad. Foreign affiliates of U.S. firms sold $0.6 billion annually in services to the United States in 1982 and 1983; essentially all of these sales were to their U.S. parents.

Geographic Distribution of Foreign Revenues

Responses to the ITC survey mentioned above suggest that as much as two-thirds of foreign revenues come from Canada and Europe. (The Commission's sample included accounting firms that provided consulting services.) It appears that private companies purchase most of the exports of U.S. consulting services in the industrialized world, but that in developing countries, governments and international organizations are major customers.

MOTION PICTURES

American movies and television programming play in many parts of the world, with payments for film and videotape rentals abroad a substantial source of income for the industry. This category of trade includes distribution agreements covering all types of film and videotape, as well as production costs incurred in overseas locations.

Domestic Industry

Industry revenues came to an estimated $15.6 billion in 1984, $14.5 billion in 1983, and $14.0 billion in 1982. The most recent Census of Service Industries identified more than 7,3oo firms engaged in the production, distribution, and services segment of the industry in 1982, but 11 large concerns, each with revenues in excess of $100 million, had nearly half (46.6 percent) of total receipts.

Employment for 1984 was about 220,000, with some 47 percent having jobs in production firms.

Measuring Foreign Activity in Motion Pictures

While films remain the single largest component of rental receipts, in recent years, foreign revenues from the various forms of television programming have increased rapidly. The Motion Picture Association of America (MPAA) estimates that by 1984 foreign revenues from television, pay-TV, and videotapes for home use totaled more than film rentals from theaters. Table 45 gives the distribution of receipts for 1980 and 1984, showing in particular the rapid growth in home video rentals. Revenues from foreign films shown in the United States trail considerably behind the overseas rentals of American films, although foreign films represent a significant fraction of all releases in the United States—34 percent in *1985,* according to *Variety*.

Table 45.—Estimated Percentage Distribution of Foreign Revenues in the U.S. Motion Picture Industry

	1980	1984
Theatrical	73.7 "/0	41 .9 "/0
Television	25.7	33.9
Pay-TV	—	0.6
Home video	0.7	23.6
	100.0 "/0	100.0 "/0

NOTE Totals may not add due to rounding

SOURCE Motion Picture Association of America, unpublished data

Structure and Nature of Industry Practices Internationally

Production in foreign countries also creates trade flows. In 1984, 46 of 130 film starts by major Hollywood producers, and 105 of 188 independent studio productions, took place overseas. Since costs are lower abroad, U.S. producers frequently look to other countries for sites, but foreign producers seldom come here. An upper bound on the overseas expenditures of U.S. film makers, and hence on imports of production services, would be about $2 billion (based on assuming costs per film start to be the same here and overseas). While the U.S. affiliates of foreign firms in this industry had total sales of **$0.8** billion in 1982 and nearly $1,0 billion in *1983,* no breakdowns by industry segment (production, distribution, box office) are available.

Foreign Revenues in Motion Pictures

Table 46, summarizing OTA's estimates, includes the estimated overseas expenditures of U.S. film production companies, as well as in-

Table 46.—Foreign Revenues in Motion Pictures (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$1.6	**$1.9**	**$1.9**
Affiliate sales	1.5	2.0	NA
Majority-owned	1.4	1.9	NA
Minority-owned	0.1	0.1	NA
	$3.1	$3.9	
U.S. revenues of foreign firms:			
Direct imports[a]	$0.1-1.4	$0.1-1.7	$0.2-2.7
Affiliate sales	0.8	1.0	NA
	0.9-2.2	1,1-2.7	

NA = Not available

[a]Includes estimated overseas expenditures of U.S film producers as well as U.S film rental payments

SOURCE: Office of Technology Assessment

ternational film rental fees, in the direct export and import figures. As the table indicates, direct exports produce about half of U.S. foreign revenues, affiliate sales the rest. Uncertainties concerning overseas production expenditures by U.S. companies translate into a wide range of estimates for imports. If foreign film production costs were comparable to U.S. costs, then the annual overseas expenditures of the American industry would exceed *$1* billion. But these costs are certainly less. How much? Not only will that depend on the country of production, but on whether the film maker is one of the major firms or an independent. Many of the latter have much lower costs, and in *1984* they accounted for fully 70 percent of foreign film starts by U.S. production companies (compared with 59 percent of all film starts, domestic plus foreign). Finally, some unknown fraction of the costs of foreign film starts by U.S. firms will be incurred in the United States—e.g., some salaries.

Balance of Payments in Motion Pictures

The uncertainties in overseas production expenditures carry over to the balance of payments estimates. While the United States has run an estimated annual surplus of at least *$0,5* billion and possibly in excess of $1.5 billion in the film rental and distribution segment of the industry, some of this will be offset by foreign production expenditures. Overall, the balance of payments in the motion picture industry has probably been on the order of a *$1* billion surplus annually.

Geographic Distribution of Foreign Revenues

The MPAA ranks the *10* largest markets for U.S. motion pictures in this order: Japan, Canada, France, West Germany, the United Kingdom, Italy, Spain, Australia, Mexico, and Sweden. Variety's summary of the geographic distribution of rental receipts for major U.S. distributors puts Canada in first place, however, with 17 percent of foreign rentals, followed by Japan at *12* percent, France at *11* percent, and West Germany at 7 percent.

COMPUTER SOFTWARE

Companies in this industry develop, produce, maintain, and upgrade software on both a custom and packaged basis. OTA includes the software content of turnkey systems, along with the software revenues of firms that manufacture hardware. Data processing, database, and other information services and computer services have been excluded (see sections on "Data Processing" and "Information Services").

Domestic Industry

In part because hardware manufacturers sell so much software—more than 4 billion dollars' worth for IBM alone in 1985—there are no official government figures on the size of the industry or the size of the U.S. market, Worldwide, *1985* software sales have been put at perhaps $3o billion, with U.S. suppliers, including the foreign affiliates of American firms, taking about 70 percent of the total, or $21 billion. The Commerce Department estimates that the sales of American firms broke down as follows: packaged programs, $14 billion; custom software, about $4 billion; and systems integration, perhaps $3.5 billion. By type of firm, the market divides roughly as follows: hardware manufacturers and independent software producers, each 40 percent, and systems integrators, 20 percent,

Estimated total employment in the U.S. industry was *508,000* as of mid-1985, excluding systems analysts and self-employed programmers,

Measuring Foreign Activity in Software

Hardware manufacturers and systems integrators provide a great deal of computer software bundled with hardware, making it diffi-

cult to estimate software revenues. When the software does not carry a separate price, but is included in the system price, the value of software exports must be approximated. Such approximations tend to be crude—e.g., based on rules of thumb for the fraction of system cost or price that can be attributed to software as a function of the size of the system (software tends to represent a greater fraction of system cost for large machines).

Structure and Nature of Industry Practices Internationally

Sixty percent of firms responding to the 1984 International Software Survey of the Computer Software and Services Industry Association (still known as ADAPSO) reported foreign revenues. As table 47 shows, many of the smaller companies in this industry do business internationally as well as in the United States. Among the firms surveyed with international operations, 71 percent maintained a presence in the United Kingdom, followed by Canada and Australia (both 59 percent), France (56 percent), and West Germany (49 percent). The ADAPSO survey also indicated that 8 percent of these firms marketed software abroad exclusively through subsidiaries, 38 percent through agents or distributors, with 54 percent using both methods. Distribution patterns and type of foreign presence vary with country. For instance, of the firms surveyed with a presence in West Germany, 55 percent maintained subsidiaries. In Japan, the corresponding figure was only *23* percent (table 48); 80 percent of American firms with a presence in Japan had agents' or distributors' offices.

Table 47.—U.S. Software Firms With International Sales, 1984

Size of firm by 1983 sales	Number of firms surveyed	Percent with international sales
<$5 million 80	(70%)	49 "/0
$5 to $20 million 19	(17%)	75 "/0
$20 to $50 million . . . 6	(5°/0)	100 "/0
>$50 million 9	(8°/0)	100 "/0
Overall 114	(100°/0)	610/'0

SOURCE "International Software Survey, " Association of Data Processing Service Organizations, July 1984

Foreign Revenues in Software

OTA's estimates, table 49, suggest that perhaps 30 to 40 percent of total foreign revenues of U.S. firms result from direct exports, with the rest accounted for by sales through affiliates. While there are no data on the Nation's software imports, analysts agree that the United States maintains a healthy surplus of exports over imports. American firms do, however, import some of the software that they sell in the U.S. market from their overseas affiliates; many develop some of their software overseas, and they may also produce multiple copies of software developed in the United States in offshore facilities, According to the direct investment surveys of the Commerce Department, hardware firms have been most active in importing software from affiliates; sales to the United

Table 48.–Type of Foreign Presence for U.S. Software Firms, 1984 (as percentage of all U.S. software firms operating in each country)

	Company-owned subsidiaries	Agents' or distributors' offices	Other organizational forms
West Germany	550/0	47 "/0	30/0
Benelux	50	50	4
Canada	46	39	15
United Kingdom	43	51	8
France	41	61	5
New Zealand.	35	65	4
Australia	24	63	NA
Japan.	23	80	4
Italy	16	84	3
South Africa	12	85	4

NA = not available
NOTE' Country totals may exceed 100°/0 due to multiple presence of firms
SOURCE "International Software Survey, " Association of Data Processing Service Organizations, July 1984

Table 49.—Foreign Revenues in Computer Software (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports (excluding turnkey systems)	$1.4	$2.2	$2.4
Direct exports (turnkey systems)	0.2-0.3	0.3-0.4	0.4-0.5
Affiliate sales[a]	3.0-4.1	3.2-4.4	3.4-4.7
Software firms	0.2-0.8	0.2-0.8	0.2-0.8
Hardware firms,	2.8-3.3	3.0-3.6	3.2-3.9
	$4.6-5.8	$5.7-7.0	$6.2-7.6
U.S. revenues of foreign ***firms:***			
Direct imports	$0.0-1.7	$0.0-2.2	$0.0-2.7
Affiliate sales	0.0-0.2	0.0-0.2	NA
	$0.0-1.9	$0.0-2.4	

NA = not available
aAffiliate sales for other computer servtce ftrms were Included with data Processing industry totals
NOTE Totals may not add due to rounding
SOURCE Off Ice of Technology Assessment

States by overseas software affiliates were less than $100 million in both 1982 and 1983.

Balance of Payments in Computer Software

Based on the estimates in table 49, it seems clear that the United States ran a surplus in the software account that may have approached $3 billion in 1984,

Geographic Distribution of Foreign Activity

Europe has been by far the largest market for U.S. software exports. Only the United States, Japan, and Western Europe have large installed bases of computer hardware at this time, with the Japanese market hard to penetrate. While BEA's FDI surveys do not provide data on software itself, results for Computer and Data Processing Service affiliates, which include software affiliates, suggest the likely patterns: Europe, 74 percent of all affiliate sales; Canada, 10 percent; other, 16 percent. Because of IBM's large market share, Commerce cannot reveal information on sales by region for affiliates of hardware companies.

TELECOMMUNICATIONS

In most countries, telecommunications services—notably, telephone networks—fall into the public sector. While a few other countries have begun to follow the U.S. lead by deregulating some aspects of access to public switched telecommunications networks and/or public data networks, in most cases control remains with government-run "postal, telephone, and telegraph" (PTT) authorities, Value-added networks that include provision of telecommunications services (e. g., TYMNET) have been included under "Information Services" rather than in this section. In general, however, the telecommunications infrastructure can carry both voice and data communications; the latter, of course, have been growing rapidly in recent years, forcing changes in regulatory regimes as well as in network equipment,

Domestic Industry

Domestic telecommunications revenues have by now grown well beyond $100 billion; the Commerce Department's estimated 1984 revenues for the traditional telephone and telegraph carriers alone comes to $98.5 billion (table 50). Of the 1984 total, domestic revenues represented $95.7 billion and international revenues $2.8 billion. The Commerce Department figure for international revenues includes payments to U.S. carriers by American customers on outgoing international calls, as well as access payments by foreign carriers on incoming calls. According to the definitions adopted by OTA in this report, the former are purely domestic transactions, even though the communication is international in nature, because both buyer

Table 50.—U.S. Telecommunication Industry Revenues by Market Segment

	1984 revenues (billions of dollars)
Traditional common carriers:	
Domestic service	$95.7
International service	2.8
Long-distance carriers	2.6
Radio common carriers	0.7
Value-added carriers	0.2
Other operating carriers	0.1
Domestic satellite companies	0.6
Interconnect services	0.6
	$103.2

NOTE' Total does not add due to rounding

SOURCE 1985 *U S Industrial Outlook* (Washington, DC: U.S Department of Commerce, January 1985), pp 31.3,4.

and seller are U.S. residents. Thus the figures presented below for foreign revenues and balance of payments impact differ from those presented as "international revenues" by the Department of Commerce.

International revenues have been growing rapidly; the Commerce Department has predicted that domestic revenues will increase by 6.8 percent in 1986, while international revenues will increase by 12.5 percent. Domestically, new and growing segments of the market such as mobile radio phone services, packet-switched data communications, specialized long-distance carriers and domestic satellite companies accounted for about $4.7 billion of revenues in 1984–table 50.

U.S. telecommunications service firms employed some 986,000 Americans in 1984.

Measuring Foreign Activity in Telecommunications Services

International telecommunications services over the public network are provided jointly by carriers in the originating and receiving countries, with the carrier in the originating country paying an access fee to the receiving carrier. Thus, the fee paid by the customer to a U.S. carrier on a voice or message transmission out of the United States actually involves two transactions. The first is domestic, between U.S. customer and U.S. carrier. It can be thought of as the fee for carrying the message to the border. The second transaction can be viewed as taking place between the U.S. customer and the foreign carrier in the country where the message terminates, with the U.S. carrier acting as intermediary. The U.S. carrier remits a portion of the fee charged the customer as an access charge paid to the foreign carrier. When the transmission passes through intermediate countries, as many do, the billings reflect this. In 1983, then, U.S. telephone carriers collected $2.3 billion from U.S. overseas callers, of which they retained about $600 million and passed on $1.7 billion in access payments to foreign carriers. Similarly, foreign carriers remitted $0.9 billion to the United States for access on incoming calls.

Particularly where PTTs continue to control the infrastructure, tariffs for telecommunications services may not reflect the prices that market transactions would set. For example, subsidized service for residential customers has been common in many parts of the world. Furthermore, no standard method exists for assigning value to services provided through the private networks that some large multinational companies have established; such transactions are only partially covered in the revenue estimates below. The balance of payments figures compiled by the Department of Commerce and utilized in OTA's estimates include payments to INTELSAT for leased satellite channels, but there are no data on services provided over privately owned and operated networks.

Structure and Nature of Industry Practices Internationally

As noted above, outgoing voice and data communications over the public network require payments for access by the U.S. carrier. Likewise, incoming transmissions generate receipts from foreign carriers. Table 51 summarizes Federal Communications Commission data for 1983, the most recent year available.

Table 51 .—U.S. International Telephone and Telegraph Communications, 1983[a]

	Number (millions)	U.S. revenues (millions of dollars)	Foreign payouts (millions of dollars)
Communications originating in the United States:			
Telephone	219.9	$ 608.6	$1,730.5
Telegraph (message)	4.9	16.0	38.3
Telegraph (telex)	69.6	183.2	196.2
	294.4	$ 807.8	$1,965.0
Communications terminating in the United States:			
Telephone	178.8	$ 930.6	
Telegraph (message)	3.4	10.4	
Telegraph (telex)	64.8	202.3	
	247.0	$1,143.3	

aExcludes telegraph private line revenues and telephone and telegraph transited Communications (communicati neither originatlng nor terminating tn the United States)

SOURCE *Statistics of Communications Common Carriers Year Ended December 1983* (Washington. DC Federal Communications Commission, no date), pp 27, 167, 170

Foreign Revenues in Telecommunications Services

The direct export and import data in table 52 represent access receipts and payments on international calls, as well as U.S. payments to INTELSAT for leasing of satellite channels. As the table indicates, direct exports of telecommunications services and sales of the foreign affiliates of U.S. firms were roughly comparable in magnitude in 1982 and 1983, the most recent years for which data are available.

Balance of Payments in Telecommunications Services

Based on OTA's estimates, table 52, the United States ran an estimated deficit in telecommunications services of $0.8 to $1.1 billion annually between 1982 and 1984, excluding any balance of payments impacts of communications over private networks. With rates varying greatly in different countries, balance of payments figures depend heavily on tariff structures and access charges as well as on the volume of traffic. Differentials for inbound and outbound calls have started to diminish as foreign PTTs have begun to reduce their charges in the wake of U.S. deregulation.

Geographic Distribution of Foreign Revenues

Table 53 summarizes the revenues of U.S. carriers on incoming voice and message communications by region for 1983, the most recent year for which such information is available, with payments data in table 54. In dollar terms, incoming transmissions from Europe accounted for 43 percent of telephone revenues and 31 percent of telex revenues, but only 35 percent of total payments on outgoing voice transmissions and 25 percent for message transmissions, Comparing the two tables shows that the United States has been in a deficit position with all re-

Table 52.—Foreign Revenues in Telecommunications Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U.S. firms:			
Direct exports	$1.1	$1.3	$1.3
Affiliate sales	1.2	1.3	NA
Majority-owned	0.2	NA	NA
Minority-owned	1,0	NA	NA
	$2.3	$2.6	
U.S. revenues of foreign firms:			
Direct imports	$1.9	$2.0	$2.4
Affiliate sales	0.2	0.0-0.6	NA
	$2.1	$2.0-2.6	

NA = not available

SOURCE Office of Technology Assessment

gions on international telephone transmissions, a result of both the higher volume of outgoing calls and higher per-call payouts. A similar deficit holds with all regions except Europe for telegraph transmissions.

Table 53.—U.S. Revenues for International Voice and Message Communications Terminating in the United States, 1983 (millions of dollars)

	Telephone	Telegraph	
		Message	Telex
Europe	$395.5	$4.2	$61.2
Africa	44.4	0.6	10.7
Middle East	89.4	0.4	17.1
West Indies	95.4	0.4	5.5
Central America	27.5	0.2	5.6
South America	85.0	0.9	29.5
Asia/Pacific	187.7	3.0	71.0
	$930.6	$10.4	$202.3

NOTES: Totals do not add because of data adjustments unspecified in original source. Asia/Pacific figures include Hawaii/mainland communications

SOURCE" *Statistics of Communications Common Carriers Year Ended December 1983* (Washington, DC: Federal Communications Commission, no date), pp. 24-27, 164-170

Table 54.—U.S. Payments to Foreign Carriers on International Voice and Message Transmissions Originating in the United States, 1983 (millions of dollars)

	Telephone	Telegraph	
		Message	Telex
Europe	$ 595.9	$9.3	$48.4
Africa	51.8	1.7	10.6
Middle East	157.5	0.6	17.1
West Indies	180.2	2.3	6.2
Central America	67.6	1.3	6.3
South America	208.9	3.7	29.4
North America.	57.5	0.1	2.8
Asia/Pacific	404.7	13.9	74.5
	$1.730.5	$38.3	$196.2

NOTE Totals do not add because of data adjustments unspecified in original source Asia/Pacific figures include Hawaii North America figures include Alaska.

SOURCE: *Statistics of Communications Common Carriers Year Ended December 1983* (Washington, DC: Federal Communications Commission, no date), pp 24-27, 164-170

TRANSPORTATION

The international transportation accounts—primarily charges for moving people and goods between nations—also include support services such as warehousing and port charges, By value, air passenger travel and ocean freight shipping greatly exceed other modes of international transportation. Among the remnants of the cruise fleet, no more than an occasional ship still flies a U.S. flag. Air freight has been growing steadily, however—most of it moving in the same planes that carry people. A few firms—Flying Tigers, for one—specialize in international air freight, but the passenger airlines, which already have the necessary foreign presence, take most of the business. For an indication of the scope for combining passenger and freight operations, note that a Boeing 747 with a full load of passengers has as much residual freight capacity as a 707 devoted entirely to cargo. Not only is land transport—e,g., by car, truck, train, or pipeline between the United States and Canada or Mexico—small in value terms, but it is conceptually difficult to capture as a trade flow.

Domestic Industry

Table 55 summarizes total operating revenues for selected segments of the U.S. transportation services industry. Figure 30 gives the break-

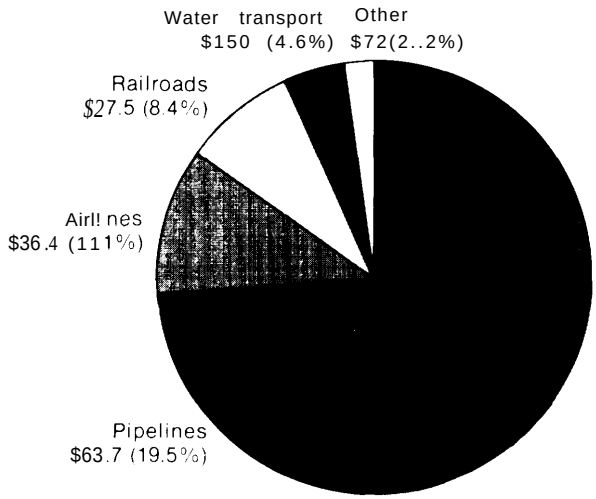
Table 55.—U.S. Transportation Services Revenues (billions of dollars)

	1982	1983	1984
Railroads	$ 27.5	$ 26.7	$ 29.5
Water transport	15.0	15.9	NA
Trucking	177.7	188.5	208.3
Airlines	36.4	39.0	43.8
Pipelines	63.7	61.9	NA
Public warehousing	3.0	NA	NA
Arrangement of passenger transportation	4.2	NA	NA
	$327.5		

NA = not available

SOURCES **Railroads, trucking:** *1986 Industrial Outlook* (Washington, DC U S. Department of Commerce, January 1986), pp 55-4, 55-8; **Water transport, pipelines;** *National Transportation Statistics* (Washington, DC U S Department of Transportation, Research and Special Programs Administration, June 1985), pp 34,40-41, **Airlines:** *Air Transport 1985: The Annual Report of the US Scheduled Airline Industry* (Washington, DC: Air Transport Association of America, no date); and **Public warehousing, arrangement of passenger transportation:** *1982 Census of Service Industries: Miscellaneous Subjects* (Washington, DC U S. Department of Commerce, Bureau of the Census, December 1985), p 145, 152

Figure 30.— U.S. Transportation Receipts, 1982 (billions of dollars)



SOURCES Railroads, trucking— *1986 U S Industrial Outlook* (Washington, DC Department of Commerce, International Trade Administration, January 1986), pp 55-4, 5543 Water transport, pipelines — *National Transportation Statistics* (Washington, DC Department of Transportation, Research and Special Programs Administration, June 1985). PP 34, 4041, **Airlines**—*Air Transport 1985 The Annual Report of the U S Scheduled Airline Industry* (Washington, DC Air Transport Association of America, no date), Public warehousing, arrangement of **passenger transportation** — *1982* **Census** *of Service Industries Miscellaneous* **Subjects** (Washington DC Department of Commerce Bureau of the Census December 1985), pp 145, 152

down by market segment for 1982, the most recent year for which data covering all modes are available. In both table and figure, water and air transport include international as well as domestic revenues of U.S. carriers.

Measuring Foreign Activity in Transportation Services

By convention, the nationality of the passenger, and the nationality of the importer in the case of freight, define whether international transportation counts as import, export, or domestic transaction for a particular nation. The fare payment of an American flying to Europe on a U.S. carrier represents a domestic transaction, even though the travel is international. A similar flight on a European carrier counts as a U.S. import of transportation services. Likewise, when a U.S. flag carrier brings imported goods to the United States, the shipping charges represent a domestic transaction. Transportation imports occur, not only when foreign carriers transport U.S. passengers or U.S. imported goods, but when U.S. carriers pay for foreign port services. Transportation exports occur when U.S. carriers transport foreign passengers or U.S. exported goods, and when foreign carriers purchase U.S. port services,

Structure and Nature of Industry Practices Internationally

A wide range of trade barriers restrict international passenger and freight transportation. Both air and ocean travel are governed by a maze of national laws and intergovernmental agreements, some imposed by national governments primarily for domestic purposes, others with no other purpose than the restriction of trade,

Air travel and tourism depend on one another in obvious ways: air passenger transportation, notwithstanding the discount fares pioneered by carriers like Laker, remains costly. When fares go down, tourism goes up. Low-cost routes can bolster tourism revenues. Cheap fares to London engender cheap fares to the continent. Because the United States is an affluent nation, and traditionally a large net importer of tourism (and business travel), the U.S. balance of payments normally shows a substantial deficit on air passenger travel.

American companies compete in international transportation markets through ownership of foreign firms, as well as direct trade.

1, Waterborne Transport.—Many countries have protected their merchant shipping fleets from foreign competition through “cabotage laws,” exemplified by the Jones Act in the United States, with its national defense rationale.15 While preserving some markets for U.S. carriers, the Jones Act not only forces U.S. companies shipping in coastal waterways to pay higher rates than the market would set, it places similar burdens on busi-

15 Ssection 27 of the Merchant Marine Act of] 92(), known as the Jones Act, requires that all domestic shipping (i. e., from one U.S. port to another] move by U.S.-flag vessels, built in the United States and crewed by Americans. See *An Assessment of Maritime Trade and Technology* (Washington, DC: Office of Technology Assessment, October 1983), pp. 163-168, and also app. B, which summarizes the cargo policies of other nations.

nesses in Alaska, Hawaii, and Puerto Rico. Although the disparity between U.S.-flag rates and those of foreign-flag ships has declined over the past few years, the cost differentials remain substantial. For example, lumber shipped from Oregon to the East Coast on U.S.-flag vessels becomes significantly more expensive than Canadian lumber shipped from Vancouver under a foreign flag.

Shipping companies must maintain a foreign presence wherever they expect to compete, but in most countries an agency will serve as well as an affiliate. American firms often participate in international maritime markets through ownership or control of flag-of-convenience or other foreign shipping operations. The 155 shipping affiliates of American companies had total revenues of $2.4 billion in 1983, while 33 foreign-owned shipping concerns in the United States had sales of only $0.9 billion. Plainly, the U. S.-controlled share of the international shipping market is considerably greater than indicated by U.S.-flag shipping.

2. *Air Transport.*—Until recently, negotiated bilateral agreements covered almost all international air travel. By controlling fare structures and the exchange of routes, governments sought to shield their country's airlines—many of them nationalized—from competition. Although employees of the U.S. Government, and many foreign governments, must still use domestic airlines on international routes, flights between the United States and Europe have been largely deregulated, Intra-European routes remain well-protected, while competition on routes from the United States to the Far East remains notably less intense than for trans-Atlantic flights.

   As in ocean shipping, many U.S. air carriers have invested in overseas affiliates. In 1982, nine U.S. air transport firms, with a combined share of the American market exceeding 50 percent, controlled a total of 71 foreign affiliates (including affiliates in other industries).

   Whether or not they have affiliates, passenger airlines that fly internationally generally maintain a foreign presence to supplement the local travel agents in the countries they serve. Most operate their own marketing and booking offices in major cities to provide information, sell tickets, service travel agents, and undertake advertising and promotional campaigns. Air carriers must also maintain facilities at foreign airports for handling passenger traffic, baggage and freight, and for cleaning and maintaining planes. In some cases, they purchase these services from a local company, typically a domestic airline, but most major carriers prefer to use their own personnel to maintain service levels. Many of these employees will be hired locally, with some on assignment from the home country; salaries for the latter come under the port expenditures category.

3, *Land-Based Transport.—The* inland freight balance between the United States and Canada was near zero in 1984, with receipts of slightly over $1 billion in each direction. Data on the balance with Mexico are not available, but total receipts in each direction came to less than $1 billion. U.S. FDI holdings in foreign rail operations are negligible, while U.S. rail operations under foreign ownership had total receipts of $0.7 billion in 1983, less than 3 percent of the market.

Foreign Revenues in Transportation Services

Table 56 summarizes foreign revenues of U.S. transport carriers and U.S. revenues of foreign carriers. As table 56 indicates, direct exports made up somewhat more than half of foreign revenues. Direct exports were more important for the U.S. revenues of foreign firms, constituting about 80 percent of the total.

Balance of Payments in Transportation Services

As the estimates in table 56 show, the U.S. deficit in passenger and freight transportation services has been growing, reaching about $4.3 billion in 1984, well above the previous 2 years' figures. The deficit in the freight transport account grew from $2.4 billion in 1982 to $5,2 billion in 1984; the passenger transport account

Table 56.—Foreign Revenues in Transportation Services (billions of dollars)

	1982	*1983*	*1984*
Foreign revenues of U.S. firms:			
Direct exports:			
Freight [a]	$ 5.1	***$ 5.5***	***$ 5.6***
Passenger	3,2	***3.0***	***3.0***
Port services	7.8	***8.0***	***9.3***
Other	0 . 6	***0.6***	***0.6***
Subtotal	16.7	17,1	18.5
Affiliate sales[b]	13.5	10.9	NA
	$30.2	$28.1	
U.S. ***revenues of foreign firms:***			
Direct imports:			
Freight [a]	$ 7,5	$ 8,2	$10.8
Passenger	4.8	5.5	6.5
Port services	4.7	4.6	4.7
Other	0.7	0,8	0.8
Subtotal	17.7	19.1	22,8
Affiliate sales	4.8	5.1	NA
	$22.5	$24.2	

NA not available
NOTE Totals may not add due to rounding
[a]Excludes u S /Mexico inland freight
blncludes transportation service sales of nontransportatlon affiliates
SOURCE Office of Technology Assessment

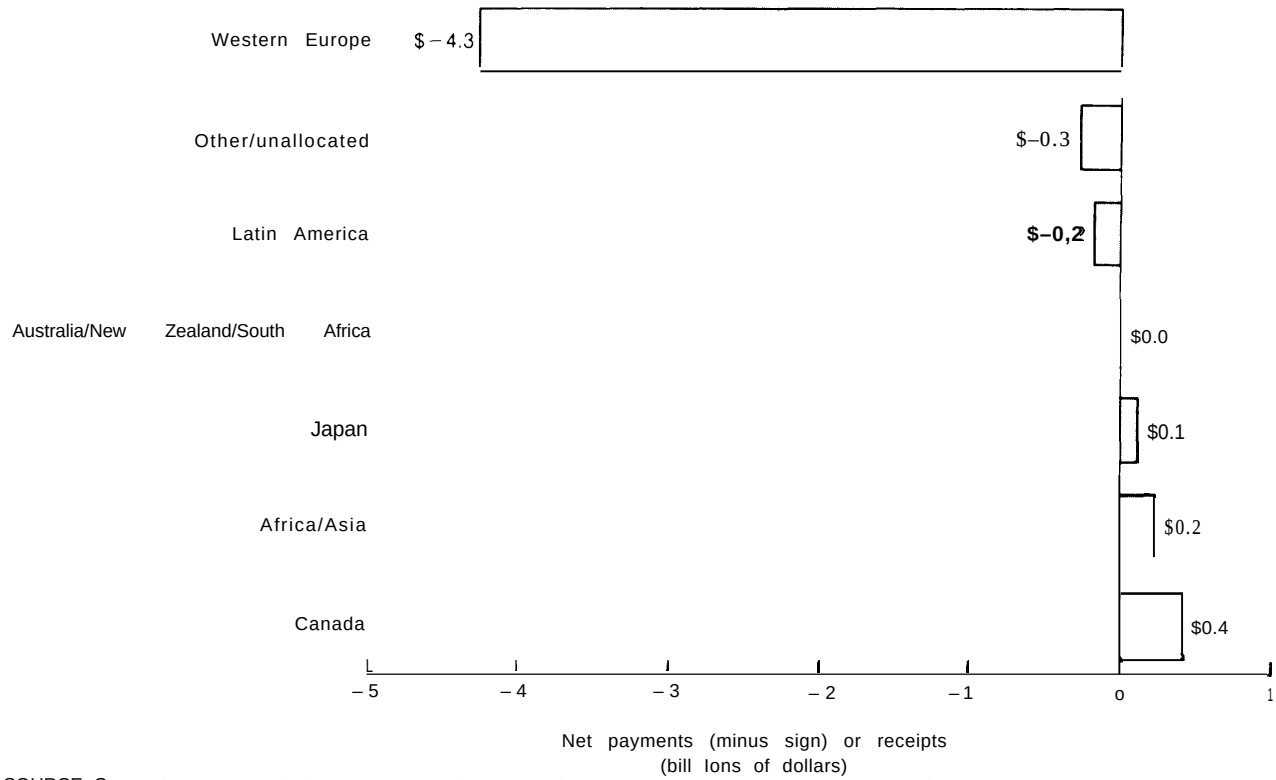
deficit increased from $1.6 billion to $3,5 billion over the same period. These were offset to some extent by an increase in the port services surplus, from $3.1 billion to $4.6 billion, over 1982 to 1984.

Table 57.—Geographic Distribution of U.S. Direct Trade in Transportation Services, 1984 (billions of dollars)

	Receipts	Payments	Net receipts
Japan	$2.8	$2.7	$ 0.1
Canada	2.6	2,3	0.4
Western Europe	5.4	9.7	–4,3
ANZSA [a]	0.7	0.7	—
Latin America	2.2	2,4	–0.2
Africa/Asia	3.8	3.6	0.2
Other/unallocated	1.1	1.4	–0.3
	$18.5	$22.8	$–4.3

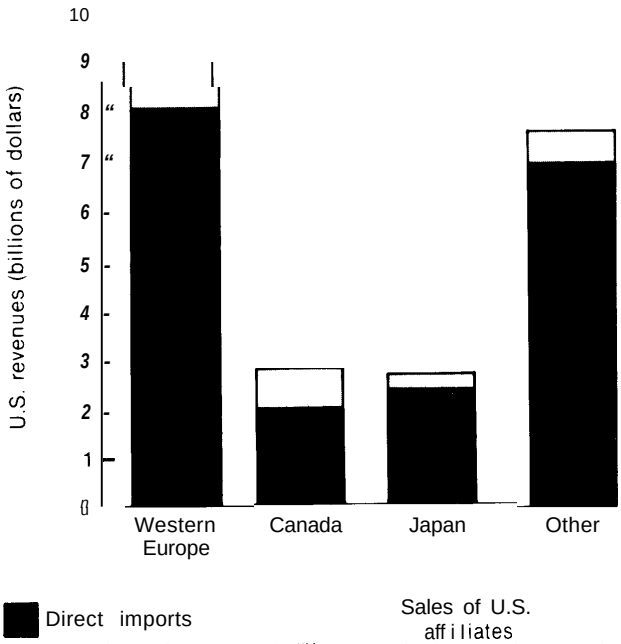
aAustralia, New Zealand, and South Africa
NOTE Totals may not add due to rounding
SOURCE C L Bach, 'U S International Transact Ions Fourth Quarter and Year 1984, " *Survey of Current Business* March 1985, pp 29-58

Figure 31.– Net U.S. International Transportation Transactions, 1984



SOURCE C L Bach, "U S International Transact Ion, Fourth Quarter and Year 1984, ' survey *of Current* **Business,** March 1985, pp 29-35

Figure 32.— U.S. Revenues of Foreign Transportation Firms, 1983



SOURCES Direct sales—C L Bach, "U S International Transactions, Fourth Quarter and Year 1983, " *Survey of Current Business*, March 1984, PP 38-66 Affiliate sales—*Foreign Direct Investment In the United States Operations of U S Affiliates of Foreign Companies, Preliminary* 1983 *Estimates* (Washington, DC: Department of Commerce. Bureau of Economic Analysis, December 1985).

Geographic Distribution of International Activity

Table 57 summarizes the geographic distribution of direct imports and exports of transportation services for 1984, with figure 31 showing net exports by region. The magnitude of the total transport deficit in 1984 almost exactly equaled the $4,3 billion deficit with Western Europe; the United States ran a rough balance with the rest of the world.

Figure 32 gives the distribution of revenues for foreign affiliates in the United States during 1983, the most recent year available. Comparison with the direct import figures, also given in the chart, shows that imports constituted the bulk of the U.S. revenues of Japanese, Canadian, and European firms. Firms in these countries, combined, accounted for roughly two-thirds of direct imports and 84 percent of affiliate sales in the U.S. market.

TRAVEL

Trade in travel services takes place when Americans spend money while visiting another country, or when foreigners come here. Expenditures for transportation between the countries go into that account, but travel by tourists within a country becomes an item in the travel service category, along with food, lodging, and any goods purchased. Rather than representing a single service, travel-related expenditures encompass a broad range of items; the account registers spending by business travelers, students, and those seeking health care, as well as vacationers. Because the category is restricted to direct expenditures of travelers, sales of travel-related services by U.S. affiliates abroad are not included here, but under the specific service (e. g., franchised hotels and car rental agencies).

Domestic Industry

The U.S. Travel Data Center estimates domestic expenditures for travel-related services at $230 billion for 1984, including both foreign travelers in the United States and spending by U.S. residents traveling domestically. The corresponding figures for 1982 and 1983 were $198 billion and $21o billion, respectively.

Related employment has been estimated at 4,7 million for 1982, The U.S. Travel and Tourism Administration estimated in 1983 that

313,000 American jobs depended on the expenditures of foreign visitors to the United States.

Measuring Foreign Activity in Travel Services

Sample surveys of travelers entering and leaving the United States form the basis for estimates of imports and exports of travel and tourism expenditures. In 1983, USTTA began conducting in-flight surveys of air travelers, with questions on purpose of trip, destination, average expenditures, and other related information; these surveys are far more comprehensive in coverage than the BEA surveys distributed by the Customs Service (ch. 3). The primary limitation of the USTTA surveys, which cover only air travel, is that they provide little useful information on travel between the United States and Canada or Mexico.

Structure and Nature of Industry Practices Internationally

On a yearly basis, U.S. residents traveling abroad typically outnumber foreign residents coming to the United States. As a result, the United States typically runs a deficit in the travel portion of the current account. This is true even though average per-trip expenditures for foreign visitors to the United States in recent years have exceeded those of U.S. travelers abroad—primarily an exchange rate phenomenon, given the decline in average dollar-denominated expenditures of U.S. travelers overseas from 1983 to 1984. As this suggests, international tourism expenditures, and especially the trade balance figures, depend sensitively on inflation-adjusted rates of exchange, as well as on income levels and air fares. Recent economic troubles in Mexico illustrate the point: in 1981 and 1982, Mexicans spent more than $3 billion annually in the United States, but in 1983 and 1984 the totals fell below $2 billion. In contrast, U.S. travelers to nonborder regions of Mexico spent $1.6 billion in 1984, compared with just over $1 billion for the preceding year, These shifts resulted primarily from falling real incomes and high levels of inflation in Mexico, making travel in the United States much more expensive for Mexicans; meanwhile, travel to Mexico became relatively cheaper for Americans.

Figure 33 summarizes the findings of USTTA in-flight surveys by purpose of trip. The results suggest that foreign travel to the United States is somewhat more likely to be for business purposes, with the greater portion of U.S. travel abroad for pleasure. Of course, many trips have multiple purposes—e. g., combined business and pleasure—thus it is difficult to categorize expenditures by purpose of trip.

Figure 34 illustrates how foreign visitors to the United States spend their money, on the average. While there are no comparable data for U.S. travelers abroad, the allocation is probably not greatly different.

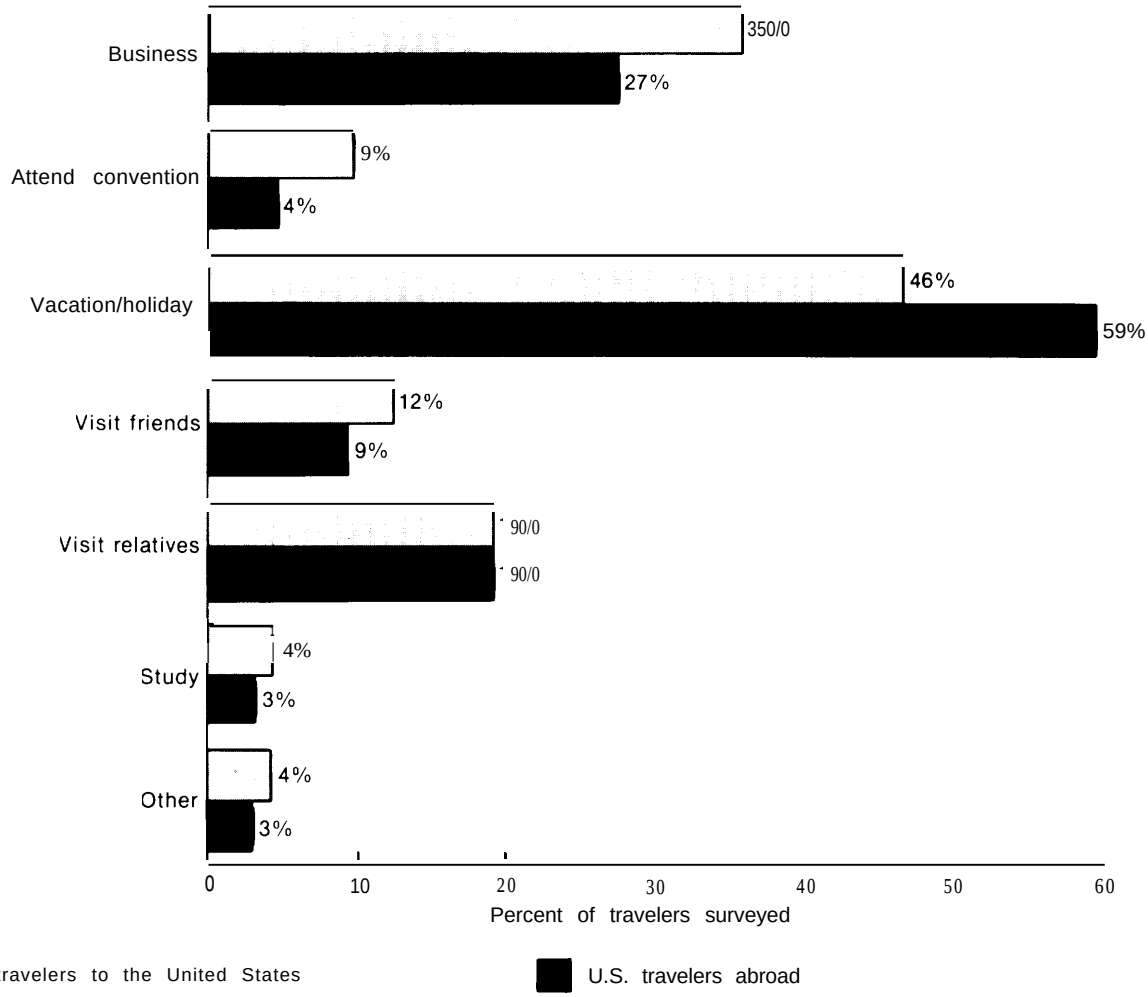
Balance of Payments in Travel Services

Table 58 summarizes the estimated impact of travel services. The United States ran a surplus of about $2 billion in the travel account in 1982, only to see that replaced by deficits of $1.7 billion in 1983 and $2.7 billion in 1984—a further indication of the sensitivity of tourism expenditures to factors such as exchange rates. As the dollar rose—and air fares dropped—the number of Americans traveling abroad rose from 8.5 million in 1982 to over 12 million in 1984. U.S. expenditures overseas increased by $2 billion, while the expenditures of overseas travelers to the United States fell by an estimated $1.3 billion. The average expenditures of foreign visitors apparently changed little, but the number declined from 8.8 million to 7.5 million, The size of the travel deficit would have been even greater had not the average per trip expenditures of U.S. travelers overseas declined significantly. Over the 1982-84 period, the U.S. deficit on passenger fares likewise grew from $1.6 billion to $3.5 billion.

Geographic Distribution of Foreign Revenues

Table 59 shows travel-related receipts and payments for 1984 by region. Europe has accounted for the largest share of both receipts and payments. As figure 35 indicates, in 1984 the United States ran a travel surplus of over $800 million with the Far East (principally Ja-

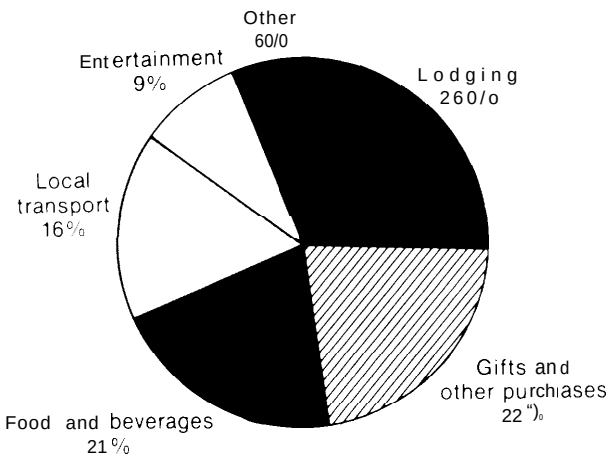
Figure 33.–International Travel by Purpose of Trip, 1984



NOTE. Totals exceed 100 percent due to incidence of multipurpose trips

SOURCES: U.S. **travelers** ovemeas—"IFlightht Survey of International Air Travelers: Profile of U.S. Residents Traveling to Overseas Destinations January-December 1984, " Department of Commerce, U.S. Travel and Tourism Administration, no date; **Foreign travelers** to U. S.—"In-Flight Survey of International Air Travelers: Profile of Overseas Visitors to the U.S.A January-December 1984, " Department of Commerce, U.S. Travel and Tourism Administration, no date.

Figure 34.—U.S. Expenditures of Foreign Visitors, 1984



SOURCE "In-Flight Survey of international Air Travelers. Profile of Overseas Visitors to the U S A January-December 1984, " Department of Commerce, U S Travel and Tourism Administration no date

pan), about $700 million with Canada, and a smaller surplus with South and Central America (excluding Mexico). The deficits with Mexico ($1.7 billion) and the Caribbean ($I.6 billion) exceeded those with Europe (nearly $1.4 billion).

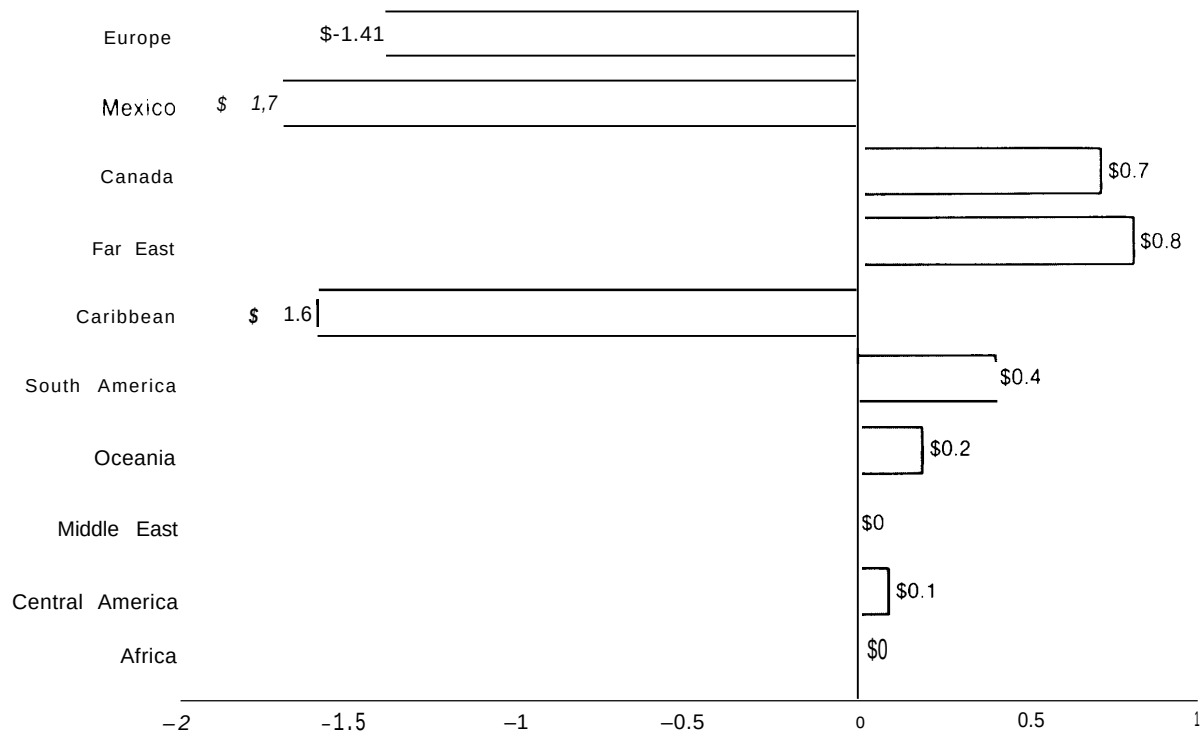
Table 58.—Balance of Payments in Travel Services (billions of dollars)

	1982	1983	1984
U.S. receipts for travel services . .	$15.7	$14,1	$13,7
Travelers from overseas.	10.0	9.0	8.7
Travelers from Canada	2,6	3,2	3.1
Travelers from Mexico	3.1	2.0	1.9
U.S. payments for travel services .. .	$13,7	$15.8	$16.4
U.S. travelers overseas. . .	8.4	10.1	10.4
U.S. travelers to Canada	1.9	2,2	2.4
U.S. travelers to Mexico	3.3	3.6	3.6

NOTE Totals may not add due to rounding

SOURCE Office of Technology Assessment

Figure 35.—U.S. Travel Surplus or Deficit by Region, 1984



SOURCES Computed from data in "In. Flight Survey of International Air Travelers Profile of Overseas Visitors to the U.S A January December 1984, " Department of Commerce U S Travel and Tourism Administration, no date, "In-Flight Survey of International Air Travelers Profile of U S Residents Traveling to Overseas Destinations January December 1984, " Department of Commerce, U S Travel and Tourism Administration, no date and J E Bolyard 'International Travel and Passenger Fares, 1984. " Survey *of Current Business* May 1985, pp 14.17

Table 59.–U.S. Travel Receipts and Payments by Region, 1984

	Receipts	Payments
Europe	24.77,	27.3%
Canada	22.7	13.6
Far East	16.5	12.5
Mexico	13.8	22.8
South America	7.0	5.9
Caribbean	5.7	8.9
Oceania	3.2	3.0
Middle East	3.2	3.0
Central America	2.5	1.8
Africa	1.3	1.2
	100.O%	100.O%

NOTE" Totals may not add due to rounding

SOURCES Computed from data in "In-Flight Survey of international Air Travelers Profile of Overseas Visitors to the U.S A January-December 19&l," US. Department of Commerce, Travel and Tourism Administration, no date; "In-Flight Survey of international Air Travelers: Profile of U.S Residents Traveling to Overseas Destinations JanuaryDecember 1984," U.S Department of Commerce, Travel and Tourism Administration, no date; and J E Bolyard, "International Travel and Passenger Fares, 1984," *Survey of Current Business*, May 1985, pp 14-17

MISCELLANEOUS SERVICES

Here OTA includes direct trade and affiliate sales in several services not covered elsewhere, along with items which BEA has traditionally included in the services account, although they do not strictly represent trade in (nonfactor) services. The totals in table 60 for direct exports of miscellaneous services include BEA estimates for the following: affiliated and unaffiliated fees (excluding royalties and license fees included under "Licensing"); expenditures in the United States by foreign governments and international organizations; receipts from Canadian affiliate trade unions; miscellaneous commissions; wages of U.S. residents abroad; spending by temporary resident aliens; and other private miscellaneous services. The direct import totals include comparable items, with minor exceptions.[16] For affiliate sales, the figures in table 60 include: agricultural services; metal mining services; R&D and testing laboratories; lodging; and employment agencies and temporary help supply services.

Table 60.—Foreign Revenues in Miscellaneous Services (billions of dollars)

	1982	1983	1984
Foreign revenues of U. S.:			
Direct exports	$ 4.7	$ 5.3	$5.7
Affiliate sales	5.5	6.0	NA
	$10.2	$11.3	
U.S. revenues of foreigners:			
Direct imports		$ 1.9	$2.1
Affiliate sales	2.8-3.5	3.2	NA
	$4.6-5.3	$ 5.1	

NA = Not avatlable.

SOURCE Off Ice of Technology Assessment

The miscellaneous category does not include estimates for a number of services on which little or no information exists—most notably entertainment services and training services. These have not been included in OTA's estimates in this report; the overall impact of these omissions on the balance of payments should be small.

[16] Specifically, the import totals include fees (other than royalties and license fees); payments to Canadian affiliate trade unions; wages of temporary resident aliens: expenditures of U.S. residents abroad; and other p rivate miscellaneous services.

U . S . GOVERNMENT PRINTING OFFICE : 1986 0 - 62-638 : QL 3