

Recent Trends in U.S. Services Trade

2004 Annual Report

June 2004
Publication No. 3703

Investigation No. 332-345
United States International Trade Commission



U.S. International Trade Commission

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PREFACE

On August 27, 1993, on its own motion and pursuant to section 332(b) of the Tariff Act of 1930 (19 U.S.C. 1332(b)), the U.S. International Trade Commission (USITC) instituted investigation No. 332-345, *Annual Reports on U.S. Trade Shifts in Selected Industries*. The current report format was developed by the USITC in response to Congressional interest in establishing a systematic means of examining and reporting on the significance of major trade developments, by product, and with leading U.S. trading partners, in service, agricultural, and manufacturing sectors. A significant amount of the information contained in this recurring report reflects basic research that is required by staff to maintain a proficient level of trade and industry expertise. The Commission has found such expertise to be essential in its statutory investigations and in apprising its varied customer base of global industry trends, regional developments, and competitiveness issues.

On December 20, 1994, the Commission on its own motion expanded the scope of this report to include more detailed coverage of service industries. Under the expanded scope, the Commission has published two reports annually, one entitled *Shifts in U.S. Merchandise Trade* and the second entitled *Recent Trends in U.S. Services Trade*. Services trade is presented in a separate report in order to provide more comprehensive and timely coverage of the sector's performance.

The current report begins with a statistical overview of U.S. trade, foreign direct investment, and affiliated transactions in services and a discussion of key trends. Thereafter, the report presents nine chapters, each covering a unique service sector. These chapters include industry-specific analyses that focus on factors relating to trade and investment during 1997-2002, while identifying major trading partners during the subject period. In addition, the chapters examine the transactions of majority-owned affiliates during 1997-2001. The sector-specific chapters conclude by discussing the factors that underlay growth or decline in these industries during 1990-2001. The report concludes with a discussion of offshore outsourcing in the information technology sector.¹

Recent USITC publications focusing on the service sector include *Examination of U.S. Inbound and Outbound Direct Investment* (USITC publication 3383, Jan. 2001), *Natural Gas Services: Recent Reforms in Selected Markets* (USITC publication 3458, Oct. 2001), *Oil and Gas Field Services: Impediments to Trade and Prospects for Liberalization* (USITC publication 3582, Mar. 2003), *Express Delivery Services: Competitive Conditions Facing U.S.-based Firms in Foreign Markets* (USITC publication 3678, Apr. 2004), and *Solid and Hazardous Waste Services: An Examination of U.S. and Foreign Markets* (USITC publication 3679, Apr. 2004).

¹ An earlier version of this discussion appeared as an article in the Commission's *Industry, Trade, and Technology Review* (USITC publication 3661, Nov. 2003).

The information and analysis in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under other statutory authority.

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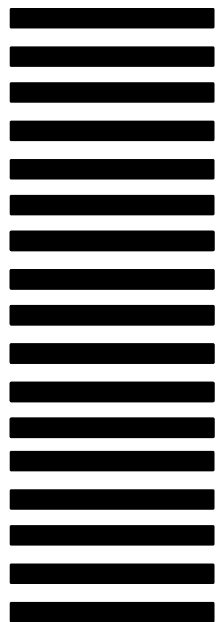
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CHAPTER 1

INTRODUCTION

Scope

The U.S. International Trade Commission (USITC) routinely monitors trade developments in the service, agricultural, and manufacturing sectors. This report, prepared annually, analyzes significant trends in services trade as a whole, assesses trade and trade-related issues in selected service industries, and identifies major U.S. trading partners. Data are presented for cross-border transactions, sales through affiliates, and direct investment. All three sets of data are presented to illustrate clearly the international commercial dimensions of U.S. service industries.

Approach

Services data presented in this report are drawn principally from the most recent annual data available for U.S. cross-border trade, affiliate transactions, and direct investment. Much of this data is estimated and published by the U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA). Information presented for purposes of analyzing trade data and examining U.S. service industries is drawn from a wide variety of sources, including individual firms, trade associations, industry journals, other government agencies, and electronic media. Chapter 2 of this report describes the nature and extent of cross-border trade, affiliate transactions, and direct investment in the service sector as a whole. Chapters 3 through 11 examine audiovisual, banking and securities, education, express delivery, insurance, solid and hazardous waste, telecommunication, utilities, and wholesaling services. These chapters define the scope of industry activities; specify the extent to which those activities are captured by trade data; provide an analysis of trends in cross-border trade, affiliate transactions, and direct investment, as appropriate;¹ and briefly examine the state of the U.S. industry in terms of size and growth. The analysis of cross-border trade compares performance in 2002 to trends evident during 1997–2001. Due to recent industry reclassifications, the analysis of inbound direct investment and sales by U.S.-based affiliates of foreign parent firms focuses on the years 1998-2001 only, and the analysis of outbound direct investment and sales by foreign-based affiliates of U.S. parents focuses on the years 1999-2001. Industry reclassifications resulted in a break in these data series, precluding meaningful trend analysis.²

In chapters 3 through 11, the discussions of trade and investment data are followed by examinations of domestic industries during 1990-2001, with a view toward identifying and explaining factors underlying growth or decline. These discussions are facilitated by the relatively recent development of estimates of gross output, gross

¹ Complete data are not available for all industries.

² For more information regarding this reclassification, see box 2-1 in ch. 2.

product, and intermediate inputs, which are integrated with national income and product accounts and input-output accounts.³ Chapters examine each industry's real gross output and the components thereof: real gross domestic product (GDP) by industry, reflecting primary inputs of labor and capital; and intermediate inputs, including energy, raw materials, semifinished goods, and services provided by U.S. and foreign sources. Where growth or decline in gross output principally reflects changes in primary inputs, trends in employment,⁴ compensation,⁵ labor productivity,⁶ and fixed assets (i.e., plant, land, and equipment, including software) are explored. Where growth or decline in gross output reflects changes in intermediate inputs, these inputs are identified and examined by consulting input-output tables for the years 1992 and 1997, the most recent years for which disaggregated input-output tables are available. Where appropriate, industry analyses reference returns to labor, or unit labor cost, and returns to capital, or unit capital cost. In the discussion, unit labor costs are calculated by dividing current dollar compensation of employees by real gross product per industry. Unit capital costs are calculated by dividing property-type income by real gross product per industry. Property-type income includes corporate profits and proprietors' income with inventory valuation adjustment, rental income of persons, net interest, private capital consumption allowances, business transfer payments, the current surplus of government enterprises less subsidies, and government consumption of fixed capital. This is, in effect, all the income returned to investors.

Chapter 12 features a discussion of offshore outsourcing in the information technology (IT) sector.⁷ This chapter identifies the motivations driving offshore outsourcing, and assesses the state of IT outsourcers in India and China.

Services Trade in Context

U.S. merchandise trade is not discussed in this report. As noted in the *Preface*, it is the subject of a separate USITC annual report.⁸ However, to put U.S. services trade in perspective with merchandise trade, cross-border services trade accounted for

³ For further information on newly available data sets on U.S. service industries, see U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), "Improved Estimates of Gross Product by Industry for 1947-98," *Survey of Current Business*, June 2000, pp. 24-54.

⁴ Employment is measured in full-time equivalents (FTEs)

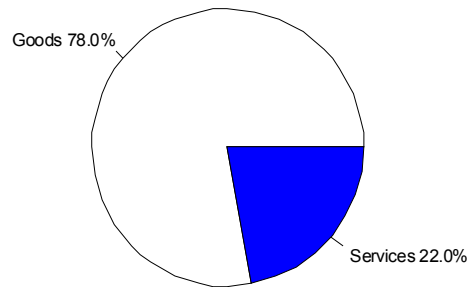
⁵ Compensation is measured in wage and salary accruals, employer contributions for social insurance, and other labor income per FTE.

⁶ Labor productivity is measured as GDP by industry per FTE. An alternative measure of labor productivity is gross output per FTE. The former has been chosen to focus on productivity gains achieved by each subject industry. Gross output per FTE would reflect productivity trends in industries supplying intermediate inputs as well as each subject industry. Another indicator of productivity, total factor productivity, is not used in the analysis.

⁷ An earlier version of this chapter appeared as an article in the Commission's publication *Industry, Trade, and Technology Review* (USITC publication 3661, Nov. 2004).

⁸ This report, *Shifts in U.S. Merchandise Trade 2002*, USITC publication 3611, July 2003, is available on the U.S. International Trade Commission's website, <http://www.usitc.gov>.

Figure 1-1
U.S. cross-border trade volume, by sector, 2002



Total trade volume = \$2.4 trillion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, p. 28.

22 percent of total U.S. cross-border trade volume in 2002 (figure 1-1).⁹ U.S. cross-border trade in services generated a \$64.8-billion surplus in 2002, in contrast to a U.S. merchandise trade deficit of \$482.9 billion.¹⁰ The service sector accounted for 76 percent of U.S. private-sector gross domestic product¹¹ and 83 percent of private-sector employment in 2002 (figures 1-2 and 1-3).¹²

According to data reported by the World Trade Organization (WTO), global cross-border exports of services totaled \$1.6 trillion in 2002.¹³ The United States was by far the largest services exporter, accounting for 17.4 percent of such exports worldwide (figure 1-4). Other significant services exporters included the United Kingdom (7.8 percent), Germany (6.3 percent), and France (5.5 percent).¹⁴ Among those countries for which 2002 trade data were reported by the WTO, the United States posted the largest services trade surplus (\$67 billion) while Germany posted the largest services trade deficit (\$49.5 billion) (figure 1-5).¹⁵

⁹ Total trade volume is the sum of the value of imports and exports.

¹⁰ For purposes of comparison with the merchandise trade deficit, the figure cited for the services trade surplus reflects public-sector as well as private-sector transactions. Elsewhere in this report, services trade data reflects private-sector transactions only. USDOC, BEA, *Survey of Current Business*, July 2003, p. 28.

¹¹ USDOC, BEA, *Survey of Current Business*, May 2003, p. 14.

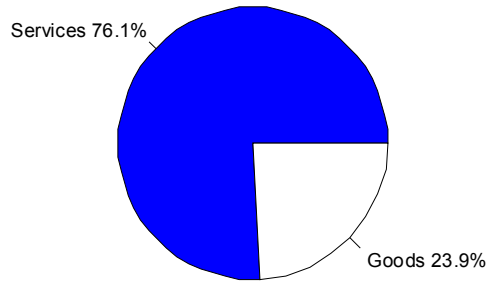
¹² *Ibid.*, May 2003, p. D-36.

¹³ World Trade Organization (WTO), "World Exports and Imports of Commercial Services, by Selected Region and Economy, 2002," found at <http://www.wto.org>, retrieved Feb. 12, 2004.

¹⁴ *Ibid.*

¹⁵ These figures reflect private-sector transactions only. Further, WTO figures treat trade in insurance services differently than BEA, accounting for the difference between the surplus reported by BEA (\$64.8 billion) and that reported above. WTO, "World Exports and Imports of Commercial Services, by Selected Region and Economy, 2002."

Figure 1-2
U.S. private-sector gross domestic product, by sector, 2002

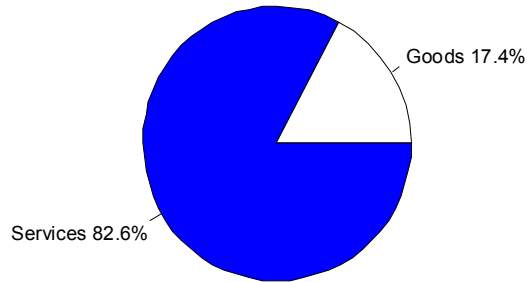


Total private-sector GDP = \$9.1 trillion¹

¹ Includes a statistical discrepancy of \$-116.7 billion dollars.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, May 2003, p. 14.

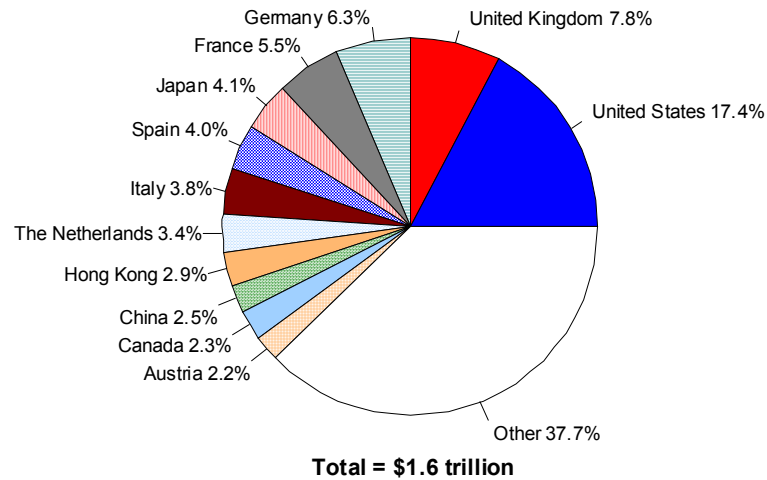
Figure 1-3
U.S. private-sector employment, by sector, 2002



Total full-time equivalent employees = 104 million workers

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Mar. 2004, p. 29.

Figure 1-4
Global cross-border exports of services, by exporting country, 2002¹

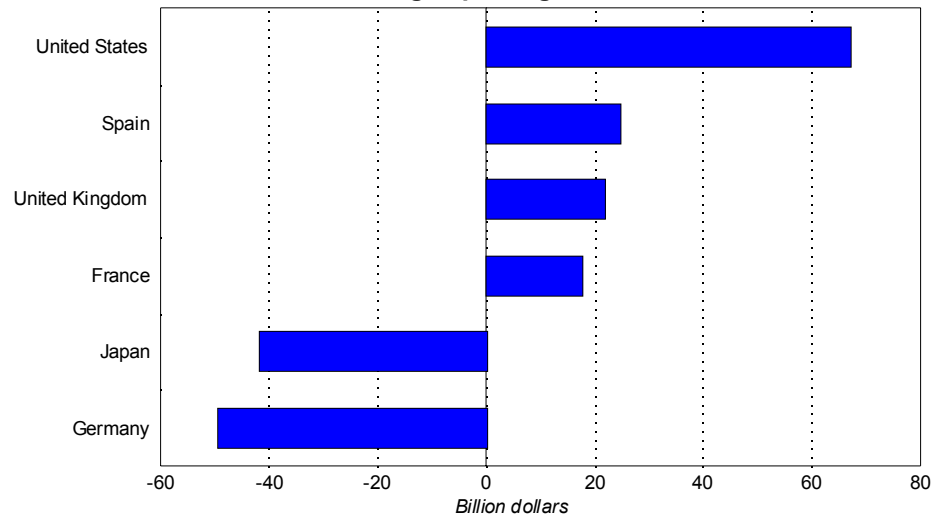


¹ Total may not equal 100 percent due to rounding.

Note.--Excludes public sector transactions.

Source: World Trade Organization, *World Exports of Commercial Services by Selected Region and Economy, 2001*, found at Internet address <http://www.wto.org/>, retrieved Jan. 13, 2004.

Figure 1-5
Services trade balances of leading exporting countries, 2002



Note.--Excludes public sector transactions.

Source: World Trade Organization, *World Exports and Imports of Commercial Services by Selected Region and Economy, 2001*, found at Internet address <http://www.wto.org/>, retrieved Jan. 13, 2004.

CHAPTER 2

U.S. TRADE IN SERVICES

Nature of Trade in Services

Nations trade services through two principal channels. The first, cross-border trade, entails sending individuals, information, or money across national borders.¹ The second channel, affiliate transactions, entails selling services through affiliated firms established or acquired by multinational companies in foreign markets.² Such affiliates are funded through foreign direct investment. The relative importance of affiliate transactions and cross-border trade has gradually shifted in recent years. In 1987, when efforts to track U.S. services trade commenced, the majority of U.S. services exports were delivered to foreign consumers through cross-border channels. However, by 1996, sales of services by U.S.-owned, foreign affiliates surpassed U.S. cross-border services exports, and in 2001, the former exceeded the latter by \$156.7 billion (figure 2-1).³ U.S. purchases of services from foreign-owned affiliates have exceeded cross-border service imports in every year since 1989, with the former exceeding the latter by \$165.3 billion in 2001.⁴

Cross-Border Trade

The U.S. current account reported a surplus on trade in private services⁵ of \$74.3 billion in 2002 (figure 2-2).⁶ This represented a slight (0.5 percent) increase over the 2001 surplus and marked a departure from the 4.3-percent average annual decrease

¹ Employing terminology found in the General Agreement on Trade in Services (GATS), this channel encompasses modes-of-supply: one (cross-border supply), two (consumption abroad), and four (movement of natural persons).

² Employing terminology found in the GATS, this channel encompasses mode of supply three (commercial presence).

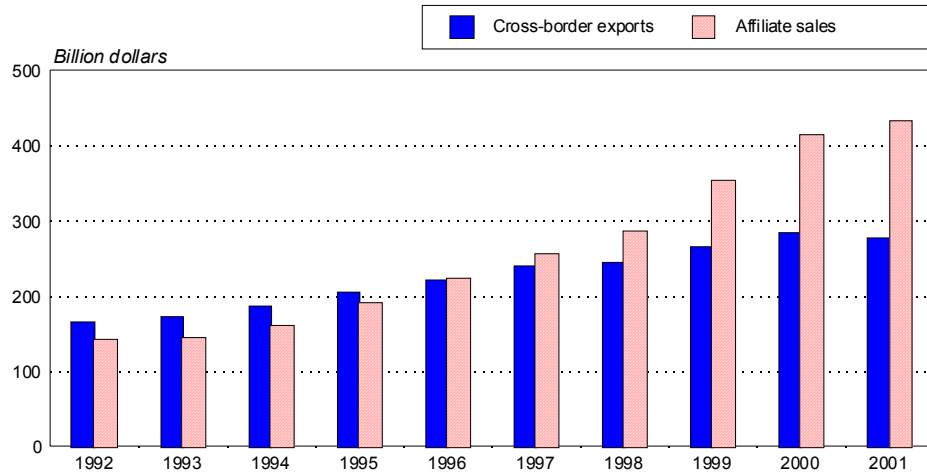
³ For a more detailed discussion of the relative importance of cross-border trade and affiliates sales, see United States International Trade Commission (USITC), *Examination of U.S. Inbound and Outbound Direct Investment*, USITC publication 3383, Jan. 2001, pp. 5-1 - 5-3 and 5-11 - 5-13.

⁴ U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Oct. 2003, p. 59.

⁵ Cross-border services trade, as reported in the current account, includes both private- and public-sector transactions. The latter principally reflect operations of the U.S. military and embassies abroad. However, because public-sector transactions are not considered to reflect U.S. service industries' competitiveness and may introduce anomalies resulting from events such as international peace-keeping missions, this report will focus solely on private-sector transactions, except where noted.

⁶ Values are reported before deductions for expenses and taxes, as gross values are most directly comparable across countries, industries, and firms. USDOC, BEA, *Survey of Current Business*, June 1992, pp. 68-70.

Figure 2-1
U.S. cross-border exports¹ of services and U.S.-owned foreign affiliate sales of services, 1992-2001²

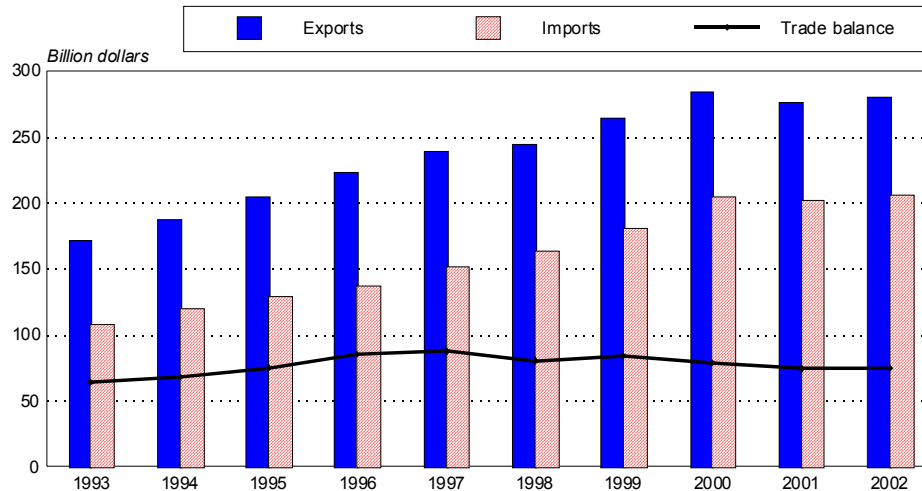


¹ Trade data exclude public-sector trade.

² Affiliate sales data for 1999, 2000, and 2001 were reported under a new industry classification system. For more information, see text box 2-1.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, p. 59.

Figure 2-2
U.S. cross-border trade in private services: Exports, imports, and trade balance, 1993-2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-79.

experienced during 1997-2001. Exports increased by 1.5 percent to \$279.5 billion in 2002, slower than the average annual growth of 3.7 percent experienced during 1997-2001. Cross-border service imports increased by 1.8 percent to \$205.2 billion in 2002, after growing at an average annual rate of 7.7 percent during 1997-2001.⁷

Travel and tourism services remained the leading exports, accounting for 23.8 percent of U.S. service exports (figure 2-3).⁸ Other industries accounting for large shares of total U.S. service exports were those related to intangible intellectual property (resulting in the payment of royalties and license fees),⁹ which represented 15.8 percent; maritime and air freight transport services (including port services), 10.4 percent; and business, professional, and technical services (hereafter, professional services), 10.3 percent. Intrafirm exports, which principally reflect transactions between U.S. parent firms and foreign affiliates, accounted for 27.4 percent of total service exports in 2002. Transactions between parent firms and their affiliates predominantly included those related to intellectual property, research and development, financial services, management consulting, operational leasing, and computer and information services.¹⁰

Leading service imports remained the same in 2002 as the year before. Travel and tourism accounted for 28.3 percent of total service imports; maritime and air freight transport, 18.8 percent; passenger fares, 9.7 percent;¹¹ and royalties and license fees, 9.4 percent. In 2002, intrafirm trade accounted for 23.1 percent of total cross-border service imports. The largest component of intrafirm trade reflected U.S. affiliates' payments of royalties and license fees to foreign parents.¹²

In 2002, as in most other years, the majority of U.S. service industries registered cross-border trade surpluses. Notable exceptions included telecommunication, insurance, freight transport, and passenger transport services. The deficit on telecommunication services, however, continues to decline in response to the significant reductions in international settlement rates (see chapter 10). Certain professional service industries, such as the advertising and accounting industries, also experienced trade deficits in 2002. However, the professional services industry as a whole posted an \$18.1-billion surplus, led by installation, repair, and maintenance services; operational leasing; database and other information services; and the computer and data processing industries.

In 2002, the European Union (EU) was the largest market for U.S. cross-border exports of services, accounting for 34.2 percent of such exports. The United Kingdom, Japan, and Canada were the largest single-country U.S. export markets, accounting for 11.4 percent, 10.6 percent, and 8.7 percent of total U.S. service

⁷ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 78-79.

⁸ The table in appendix A delineates, where applicable, the activities reflected in official cross-border services trade data.

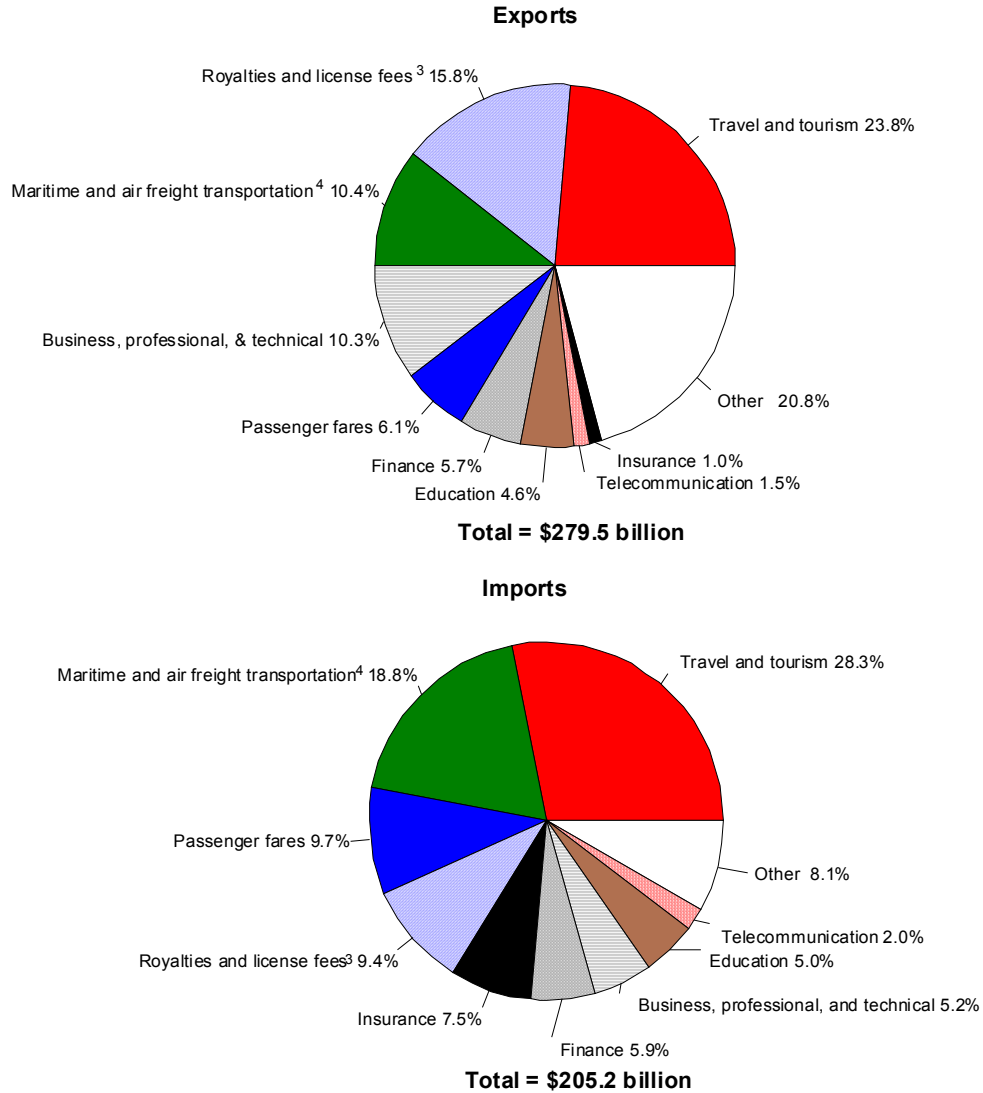
⁹ These services principally include management services and sales of rights to industrial processes; broadcasts and recordings of live events; books, records, and tapes; business format franchises; trademarks; and distribution, use, and reproduction of computer software.

¹⁰ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 66.

¹¹ *Ibid.*, pp. 78-113.

¹² *Ibid.*, p. 66.

Figure 2-3
U.S. cross-border service exports and imports,¹ by industry, 2002²



¹ See appendix A for a description of service industries.

² Totals may not equal 100 percent due to rounding.

³ Intrafirm trade between affiliates of multinational corporations represented 73.0 percent of U.S. exports and 78.6 percent of U.S. imports of intellectual property in 2001.

⁴ Reflects freight transport and port services only. Excludes ground transport services.

Note.--Trade data exclude public-sector transactions.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-113.

exports, respectively (figure 2-4). With regard to U.S. imports of services, the EU supplied the predominant share (37.6 percent). The United Kingdom (13 percent), Canada (9 percent), and Japan (8.4 percent) were the largest single-country suppliers of U.S. imports of services. In 2002, the United States registered cross-border trade surpluses measuring \$18.5 billion with the EU, \$12.4 billion with Japan, \$5.9 billion with Canada, and \$4.8 billion with Mexico.¹³

Foreign Direct Investment

The provision of many services requires that the service provider be proximate to the consumer for both practical and regulatory reasons. For example, accounting firms prefer to provide services to overseas clients through foreign affiliates, in part because regulations may restrict, or render uneconomic, cross-border transmission of financial data. Similarly, architectural and engineering firms find that the establishment of a commercial presence in a foreign market is often a necessary legal prerequisite for obtaining contracts. Consequently, many firms establish a commercial presence abroad through foreign direct investment.

Data on foreign direct investment position track parent firms' equity holdings in all foreign affiliates,¹⁴ plus the net value of loans between parents and affiliates. For 2002, these data indicate that the U.S. direct investment position in foreign service industries totaled \$1.1 trillion, reflecting 11.5-percent growth over the previous year. This exceeded the 7.3-percent average annual growth rate recorded during 1999-2001. The foreign direct investment position in U.S. service industries posted a slight increase (0.3 percent) to \$816.7 billion in 2002.¹⁵ This was a marked departure from the 28.7 percent average annual growth recorded during 1998-2001.¹⁶ Conversion to the NAICS¹⁷-based data collection methodology precludes comparison of data earlier than 1998 for foreign direct investment in the United States and 1999 for U.S. direct investment abroad (box 2-1).

¹³ USDOC, BEA, *Survey of Current Business*, Oct. 2003, pp. 80-81.

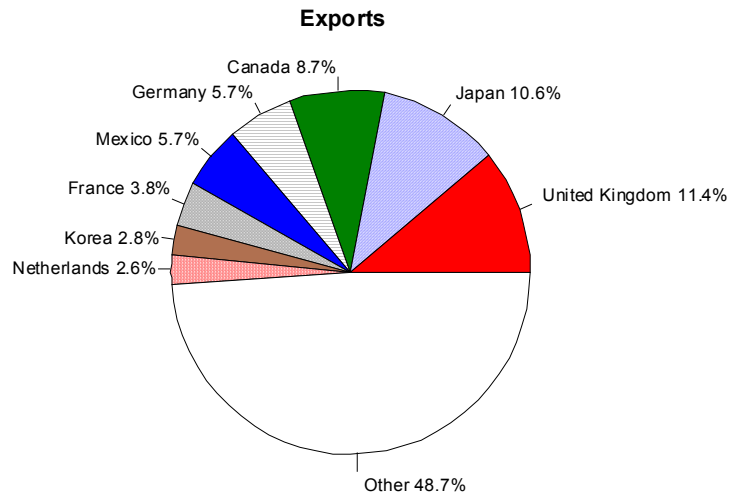
¹⁴ An affiliate is defined as a business establishment in which there is investment of 10 percent or more by a single natural (or juridical) person who is a national of (or based in) a country other than that of the establishment.

¹⁵ USDOC, BEA, *Survey of Current Business*, Sept. 2003, pp. 92-94 and 145-147.

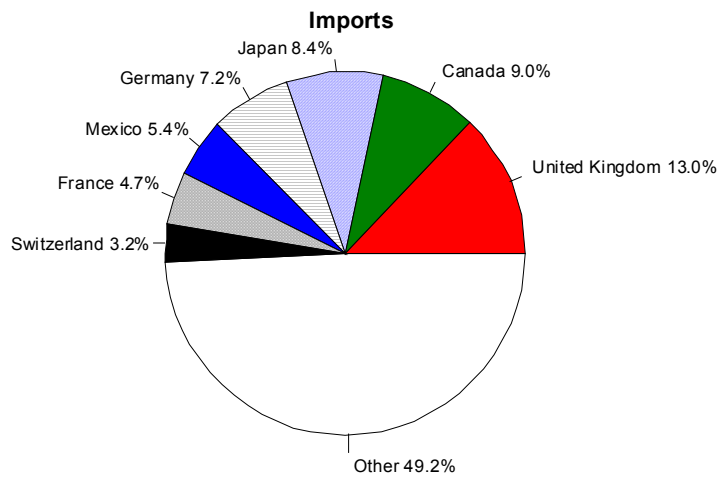
¹⁶ The slowdown in FDI in U.S. services industries can be linked, in part, to the overall U.S. decline in FDI inflows experienced in 2002, which was due in large part from the repayment of loans by foreign affiliates to parent companies as firms presumably tried to take advantage of lower interest rates in the United States, as well as improving the debt-to-equity ratio of parent firms. United Nations Conference on Trade and Development, *World Investment Report 2003*, April 2003, p. 13.

¹⁷ North American Industry Classification System.

Figure 2-4
U.S. cross-border service exports and imports, by country, 2002¹



Total = \$279.5 billion



Total = \$205.2 billion

¹ Totals may not equal 100 percent due to rounding.

Note.--Trade data exclude public-sector transactions.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 80-81.

Box 2-1**Investment and Affiliate Transactions: Changes in Definition and Classification**

BEA uses the North American Industry Classification System (NAICS) to report on U.S. purchases of services from U.S.-based affiliates of foreign parent firms for 1997 and all subsequent years; U.S. sales of services by foreign-based affiliates of U.S. parent firms for 1998 and all subsequent years; foreign direct investment in the United States (FDIUS) for 1999 and all subsequent years; and U.S. direct investment abroad (USDIA) for 1999 and all subsequent years.¹ Data prior to these years were based on industry classifications found in the 1987 U.S. Standard Industrial Classification (SIC). The NAICS was developed jointly by the statistical agencies of the United States, Canada, and Mexico.

Adoption of the NAICS system entailed a redefinition of services classifications, which is believed to raise the estimated value of total U.S. sales and purchases of services from affiliates. The reason for this increase is that those transactions defined as sales and purchases of services under the NAICS that were previously defined as sales and purchases of goods under the SIC system exceed sales and purchases of goods under the NAICS that were formerly defined as sales and purchases of services under the SIC system. Examples of transactions newly classified in service industries under the NAICS include sales and purchases of newspapers, periodicals, books, and records. Alternatively, NAICS-based definitions of sales and purchases of services exclude some transactions that SIC-based definitions include, such as sales by and purchases from dental laboratories and firms that reproduce software and video.²

The NAICS system also has an impact on investment data. The reclassification of service industries reported for FDIUS was most evident in two major service areas. Holding companies have been removed from finance and are now reported under "Management of companies and enterprises." Also, several categories were moved under the new "Information" section. This section includes publishing, motion picture and sound recordings, broadcasting and telecommunication, and information and data processing services.³ USDIA's reclassification primarily has an impact on two major service industries. First, the utilities sector was broken out into three service industries. Second, holding companies and real estate are now separate from finance and insurance.⁴

The implementation of the NAICS provides certain advantages over the SIC-based classifications, including enhanced industry detail, better reflection of new and emerging technologies, and a more logical distinction between goods and services.⁵ For example, restaurants are included in retail trade in the SIC; accordingly, sales by restaurants are treated as sales of goods. Under the NAICS classification, restaurants are included in the service industry "accommodation and food services," and their sales are classified as sales of services. The treatment under NAICS better reflects meal preparation, table service, and the provision of facilities for on-site meal consumption, which differentiate restaurants from grocery stores and other establishments providing unprepared food to retail customers, whose sales are treated as sales of goods.

¹ Office of Management and Budget, *North American Industry Classification System: United States, 1997* (Washington, DC, 1998).

² For additional information on differences between the NAICS and SIC classification systems, see Bureau of the Census, *1997 Economic Census: Bridge Between NAICS and SIC*, found at Internet address <http://www.census.gov/epcd/ec97brdg/>.

³ USDOC, BEA, *Survey of Current Business*, Sept. 2003, p. 46.

⁴ *Ibid.*, pp. 96-98.

⁵ USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 61.

The U.S. direct investment position in foreign services markets is largest in holding companies,¹⁸ the financial services industry,¹⁹ and the wholesale trade industry (figure 2-5). In 2002, U.S. direct investment in holding companies had reached a position of \$422.8 billion, or 38.2 percent of U.S. direct investment abroad in the service sector, while the financial services and wholesale trade industries accounted for \$172.0 billion and \$114.9 billion of such investment, respectively. In 2002, wholesale trade, insurance, and depository institutions attracted the largest shares of foreign direct investment in the U.S. service sector, accounting for \$188.8 billion, \$104.1 billion, and \$80.7 billion of such investment, respectively.²⁰

The United Kingdom²¹ remained the top host country of U.S. direct investment abroad in services, accounting for holdings of \$192.8 billion (table 2-1) in 2002. Financial services (excluding depository institutions) accounted for 24.6 percent of these holdings. Other countries that hosted large shares of U.S. services investment included Bermuda, Canada, and Switzerland, which respectively accounted for holdings valued at \$68.9 billion, \$65.0 billion, and \$64.5 billion in 2002.²²

The United Kingdom was the top source of foreign direct investment in the U.S. service sector in 2002, accounting for holdings valued at \$209.1 billion. Investment in the wholesale trade and information industries each accounted for over 34 percent of these holdings. Other leading sources of service sector investment in the United States included France, Japan, Germany, and Canada, which respectively accounted for holdings of \$100.5 billion, \$96.2 billion, \$85.8 billion, and \$68.7 billion in 2002.²³

Affiliate Transactions²⁴

As noted above, transactions carried out by foreign affiliates account for the largest share of total services deliveries.²⁵ Unlike data on direct investment position, which reflect equity holdings in all foreign affiliates, the data on affiliate transactions

¹⁸ Holding companies are designed primarily for tax purposes, and channel funds to operating companies in both service and non-service industries. As a consequence, the end use activity of such investment in holding companies cannot be determined.

¹⁹ Includes securities and commodities brokerage. Excludes depository institutions, insurance, business franchising, holding companies, and real estate.

²⁰ USDOC, BEA, *Survey of Current Business*, Sept. 2003, pp. 92-94 & 145-147; and Sept. 2002, pp. 65-66 and 95-96.

²¹ The United Kingdom was the top destination of U.S. direct investment abroad despite the suppression of data reported by the utilities and professional, scientific, and technical services industries.

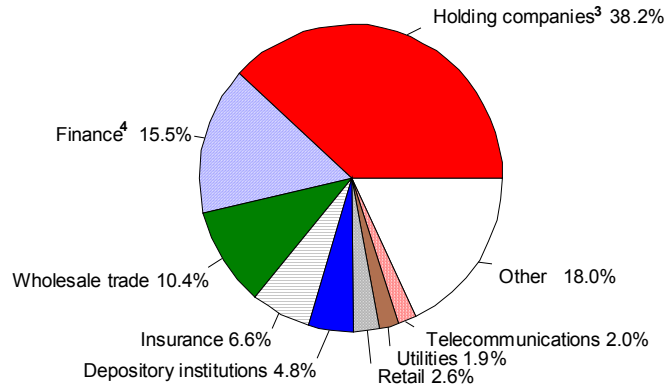
²² USDOC, BEA, *Survey of Current Business*, Sept. 2003, pp. 118-121.

²³ *Ibid.*, pp. 66-69.

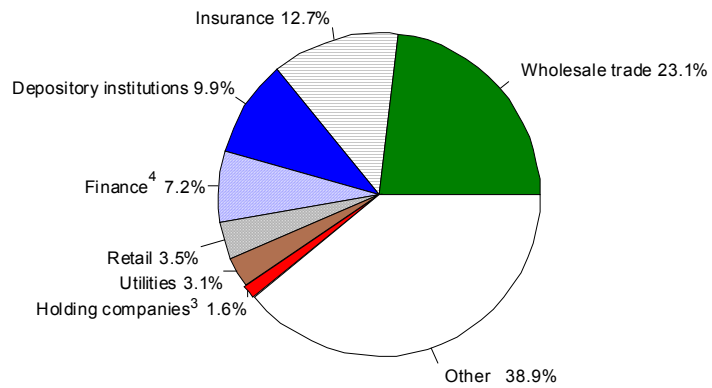
²⁴ Appendix B describes the activities reflected in official data regarding affiliate transactions.

²⁵ Affiliate sales and purchases figures reflect total services transactions by affiliates from all industries. Thus, these data include services transactions by affiliates in the services, manufacturing, agriculture, and mining sectors. For example, manufacturing firms may provide repair services in addition to producing and selling goods.

Figure 2-5
Investment in the service sector:¹ U.S. direct investment position abroad and foreign direct investment position in the United States, by industry, 2002²



U.S. direct investment position abroad = \$1.1 trillion



Foreign direct investment position in the United States = \$816.7 billion

¹ Compiled by the Commission.

² Total may not equal 100 percent due to rounding.

³ Holding companies exist primarily for tax purposes, and are used to channel funds to operating companies in a wide variety of industries.

⁴ Includes securities and commodities brokerage.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 2003, pp. 145-147 and 92-94.

Table 2-1
U.S. direct investment position abroad (USDIA) and foreign direct investment in the U.S. (FDIUS),
estimates for selected countries, 1999-2002

	1999	2000	2001	2002	Percentage change, 2001-2002
—————Million dollars—————					
USDIA					
Bermuda	(¹)	(¹)	65,209	68,880	5.6
Canada	60,015	65,462	67,064	64,969	-3.1
France	(¹)	23,483	22,666	23,292	2.8
Germany	(¹)	26,170	31,739	36,847	16.1
Hong Kong	(¹)	(¹)	² 19,578	32,800	(¹)
Japan	² 29,901	43,243	² 41,298	² 48,783	18.1
Switzerland	36,408	51,929	55,637	64,512	16.0
United Kingdom	159,290	182,081	188,464	² 192,774	2.3
FDIUS					
Bermuda	(¹)	(¹)	(¹)	(¹)	(³)
Canada	61,041	67,805	75,273	68,698	8.7
France	31,950	53,711	75,988	100,450	32.2
Germany	56,857	63,323	107,212	85,846	-19.9
Hong Kong	(¹)	(¹)	1,175	1,601	36.3
Japan	² 95,685	² 94,803	(¹)	² 96,192	(³)
Switzerland	(¹)	(¹)	(¹)	(¹)	(³)
United Kingdom	69,160	196,010	196,514	209,076	6.4

¹ Data were suppressed to avoid the disclosure of data of individual companies.

² Under reported due to the suppression of data.

³ Not available.

Source: Compiled by the Commission based on data from U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

presented herein track only majority-owned affiliates' sales to unaffiliated foreigners in the host market.²⁶

²⁶ Majority-owned foreign affiliates of U.S. firms are defined as foreign affiliates for which the combined direct and indirect ownership interest of all U.S. parents exceeds 50 percent. Majority-owned U.S. affiliates of foreign firms are U.S.-based affiliates for which the combined direct and indirect ownership interest of all foreign parents exceeds 50 percent. For reporting purposes, the country in which the U.S.-based affiliate's "ultimate beneficial owner" resides receives credit for sales to U.S. persons. An ultimate beneficial owner of a U.S. affiliate is the entity, proceeding up the affiliate's ownership chain, that is not owned more than 50 percent by another person. In 2001, sales by U.S. majority-owned affiliates abroad accounted for 89 percent of sales by all U.S. affiliates abroad, while U.S. purchases from majority-owned foreign affiliates in the United States accounted for 86 percent of U.S. purchases from all foreign affiliates. USDOC, BEA, *Foreign Direct Investment in the United States: Operations of U.S. Affiliates of Foreign Companies, Preliminary 2001 Estimates*, Table J-1; and USDOC, BEA, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates, Preliminary 2001 Estimates*, Tables II.A 1 and III.A 1 found at <http://www.bea.doc.gov/>, retrieved Mar. 5, 2004.

In 2001, services sales by majority-owned, foreign-based affiliates of U.S. companies increased by 4.5 percent to \$432.2 billion.²⁷ U.S.-owned affiliates in the public utilities industry accounted for 17.3 percent of total services sales by foreign affiliates of U.S. firms, representing the largest share for any single industry (figure 2-6). Other industries that accounted for large shares of affiliate sales were the insurance (15.1 percent), wholesale trade (4.9 percent), transportation and warehousing (4.8 percent), and telecommunications (4.7 percent) industries.²⁸

The majority of U.S. affiliate sales of services are transacted with EU Member States, which accounted for 54.1 percent of sales in 2001. Among EU Member States, the top markets for U.S. affiliate sales were the United Kingdom, Germany, and France, which in 2001 accounted for 28.7 percent, 6.1 percent, and 4.6 percent of total U.S. affiliate sales of services, respectively (figure 2-7). U.S.-owned affiliates in Canada and Japan accounted for 11.8 percent and 8.2 percent of affiliate sales of services, respectively.²⁹

In 2001, services purchases from majority-owned, U.S.-based affiliates of foreign firms totaled \$366.9 billion, up 6.5 percent over the previous year. Services purchased from U.S.-based insurance affiliates accounted for 23.2 percent of total U.S. purchases of services from foreign-owned affiliates in 2001. Purchases from utilities affiliates, financial services affiliates, transportation and warehousing affiliates, and wholesale trade affiliates of foreign firms accounted for 7.8 percent, 7.4 percent, 6.5 percent, and 2.7 percent of total purchases, respectively.³⁰

U.S.-based affiliates owned by EU parent companies accounted for 68.0 percent of total U.S. purchases of services from foreign-owned affiliates in 2001. Purchases from British-owned affiliates accounted for 19.0 percent of U.S. purchases, while purchases from Dutch-owned and French-owned affiliates accounted for 15.1 percent and 12.6 percent of total U.S. purchases, respectively. Affiliates of Canadian, Swiss, and Japanese parent firms accounted for 14.1 percent, 9.2 percent, and 7.1 percent of U.S. purchases, respectively.³¹

²⁷ Sales receipts are reported before deductions for expenses and taxes, as gross sales figures are more directly comparable across countries, industries, and firms. USDOC, BEA, *U.S. Direct Investment Abroad: 1994 Benchmark Survey, Final Results*, May 1998, p. M-17; and USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 116.

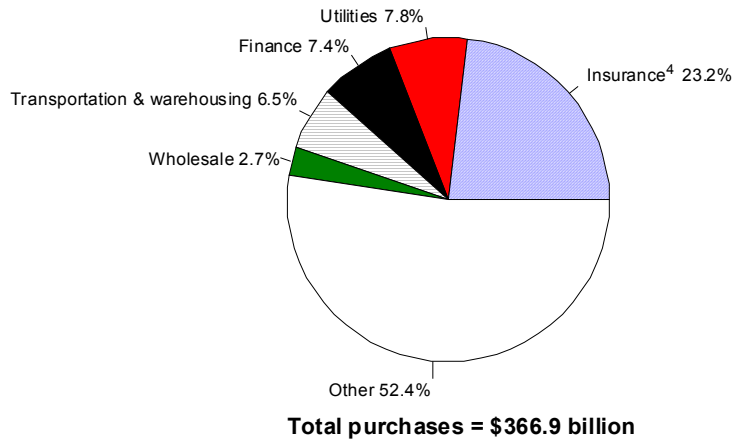
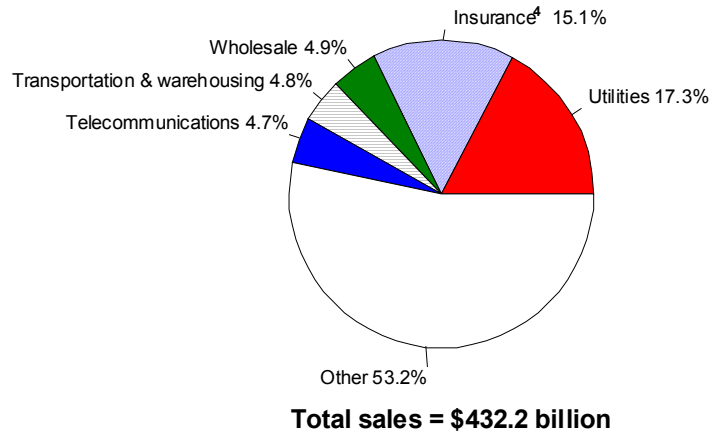
²⁸ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 118.

²⁹ *Ibid.*, p. 114.

³⁰ *Ibid.*, p. 116.

³¹ *Ibid.*, p. 118.

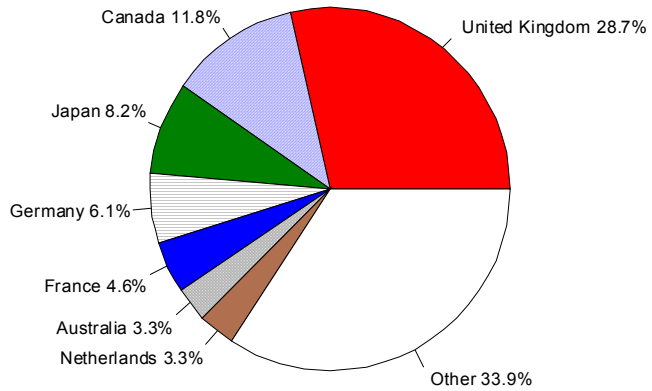
Figure 2-6
Affiliate service transactions: U.S. sales¹ and purchases,² by industry, 2001³



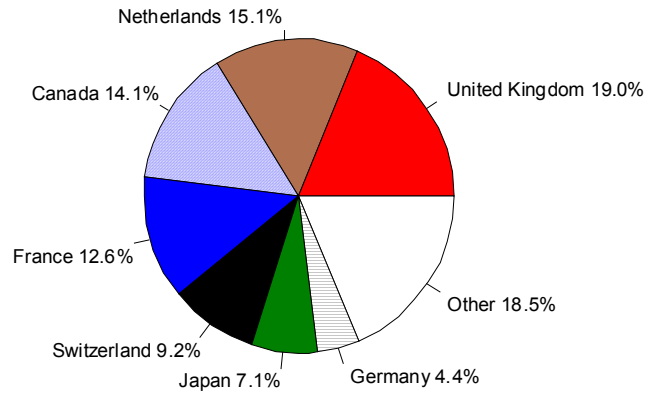
¹ Sales of services by majority-owned foreign affiliates of U.S. parent firms.
² Purchases of services from majority-owned U.S. affiliates of foreign parent firms.
³ Total may not equal 100 percent due to rounding.
⁴ Includes insurance carriers, agencies, brokerages, and other insurance related activities.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 116 and 118.

Figure 2-7
Affiliate service transactions: U.S. sales¹ and purchases,² by country,³ 2001



Total sales = \$432.2 billion



Total purchases = \$366.9 billion

¹ Sales of services by majority-owned foreign affiliates of U.S. parent firms.

² Purchases of services from majority-owned U.S. affiliates of foreign parent firms.

³ Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, p. 114.

CHAPTER 3

AUDIOVISUAL SERVICES

Introduction

Audiovisual services comprise the production and distribution of recorded entertainment, such as motion pictures, television and radio programs, music, and music videos. These services are provided to consumers through projection in theaters, commercial flights, and other public venues; rental or sale of prerecorded works; and television, pay television, and radio broadcasting. Providers of audiovisual services collect royalties, rental fees, license fees, and sales revenue in return for granting rights to display, broadcast, reproduce, or distribute audiovisual works, which are typically prerecorded on film reels, video tapes, digital video disks (DVD), audio cassettes, and compact disks (CD). Transactions occur both across borders and through foreign affiliates. Data on cross-border trade in audiovisual services reflect payments for rights to display, reproduce, or distribute motion pictures and television programs¹. Affiliate data reflect sales to foreign persons of motion pictures, television tapes and films by U.S.-owned production and distribution affiliates and sales to U.S. persons by foreign-owned motion picture and sound recording affiliates located in the United States.²

Trade and Investment Trends

Cross-Border Trade

U.S. cross-border exports of audiovisual services in 2002 amounted to \$9.8 billion, reflecting 10.9-percent growth over 2001 (figure 3-1)³. This was similar to the 10.5-percent growth rate experienced during 1997-2001. Rapid export growth demonstrates the enduring strength of U.S. studios in international film production and distribution markets. European Union (EU) countries, specifically the United Kingdom, Germany, and the Netherlands, along with Japan and Canada were the largest cross-border export markets for U.S. motion pictures in 2002 (figure 3-2).

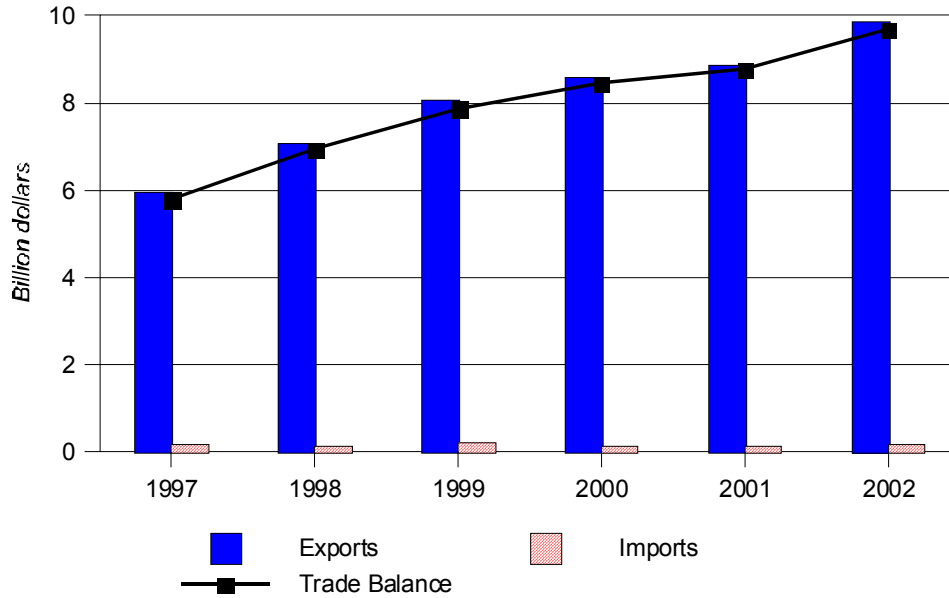
Cross-border imports in 2002 amounted to \$153 million, a 47-percent increase from the previous year. Such growth contrasts with the performance of imports during 1997-2001, when they decreased by 10 percent per annum. EU countries accounted for \$59 million, or 39 percent, of U.S. imports in 2002, while imports from Canada

¹ USDOC, BEA, "U.S. International Services: Cross-Border Trade in 2002 and Sales Through Foreign Affiliates in 2001," *Survey of Current Business*, Oct. 2003, p. 69.

² USDOC, BEA, *Survey of Current Business*, Nov. 2001, pp. 76-83.

³ USDOC, BEA, "U.S. International Services: Cross-Border Trade in 2002 and Sales Through Foreign Affiliates in 2001," *Survey of Current Business*, Oct. 2003, p. 100.

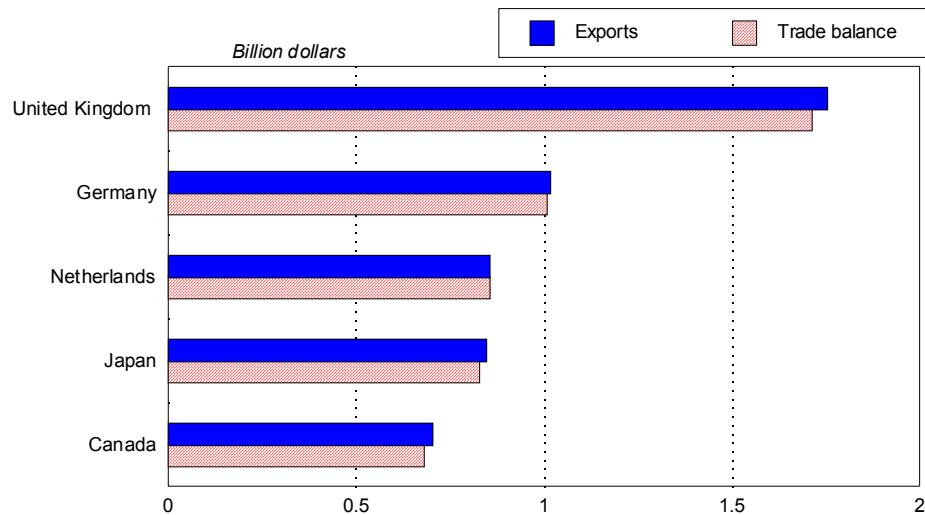
Figure 3-1
Audiovisual¹ services: Cross-border trade, 1997-2002



¹ For this figure, audiovisual services is defined as film and television tape rentals.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 94-100; Oct. 2002, pp. 100-101; and Oct. 2001, pp. 76-77.

Figure 3-2
Audiovisual¹ services: U.S. cross-border exports and trade balance, by major trading partners, 2002



¹ For this figure, audiovisual services is defined as film and television tape rentals.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 100-101.

and Japan totaled \$23 million and \$20 million, respectively⁴. The growth observed in cross-border exports and imports of audiovisual services during 2002 reflects the overall increase in economic activity experienced by the United States and several trading partners, which resulted in increased discretionary income.⁵

Foreign Direct Investment and Affiliate Transactions

Following a decline in 2001, cumulative U.S. direct investment abroad (USDIA) in the motion picture industry increased by 22.8 percent to \$4.3 billion in 2002. U.S. movie production abroad has increased significantly since 1999 as U.S. studios have increasingly opted to shoot movies outside the United States to benefit from lower foreign production costs. Canada is the most popular foreign production site for U.S. companies. However, in the future, exchange rate fluctuation may reduce the incentive for U.S. studios to produce films in Canada, promoting alternative sites such as the United Kingdom and Australia⁶. Foreign affiliates of U.S. parents recorded sales of \$7.6 billion in 2001.⁷

Cumulative foreign direct investment in the U.S. motion picture industry (FDIUS) increased by 22 percent to \$17 billion in 2001, up from \$14 billion in 2000⁸. Such investment has increased unevenly in recent years. One explanation for vacillations in FDIUS growth may be the size of mergers and acquisitions in the industry. For example, in 2000, Vivendi (France) acquired an 86-percent interest in Universal Studios as part of a \$30-billion purchase of Seagram Co. (Canada)⁹. Though total sales data have been suppressed to prevent disclosure of individual company operations, available data suggest that U.S. affiliates of foreign parents recorded motion picture and video sales in the neighborhood of \$5 billion to \$6 billion in 2001.¹⁰

Industry Analysis

Real gross output in the U.S. motion picture industry experienced 3.1 percent average annual growth during 1990-2001 (table 3-1), reaching \$65 billion. To increase output, motion picture producers increased their use of both primary and intermediate inputs. Intermediate inputs in the motion picture industry, which increased by 3 percent during the period, principally include motion pictures developed by

⁴ USDOC, BEA, "U.S. International Services: Cross-Border Trade in 2002 and Sales Through Foreign Affiliates in 2001," *Survey of Current Business*, Oct. 2003, p. 101.

⁵ *Ibid.*, p. 63.

⁶ Industry representative, interview by USITC staff, Washington, DC, Jan. 20, 2004.

⁷ USDOC, BEA, "U.S. International Services: Cross-Border Trade in 2002 and Sales Through Foreign Affiliates in 2001," *Survey of Current Business*, Oct. 2003.

⁸ Most recent data available.

⁹ Standard and Poor's, *Industry Surveys, Movies & Home Entertainment*, Feb. 12, 2004, p.1, found at <http://www.netadvantage.standardandpoors.com/>, retrieved Mar. 19, 2004.

¹⁰ USDOC, BEA, "U.S. International Services: Cross-Border Trade in 2002 and Sales Through Foreign Affiliates in 2001," *Survey of Current Business*, Oct. 2003, p. 118.

Table 3-1
U.S. motion picture industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
				Percent
Real gross output (<i>billion dollars</i>)	46.5	56.8	64.7	3.1
Real gross domestic product (<i>billion dollars</i>)	21.2	24.6	29.5	3.0
Real intermediate inputs (<i>billion dollars</i>)	25.2	32.1	35.1	3.0
Real net stock of private fixed assets (<i>billion dollars</i>)	17.6	30.7	38.8	7.5
Employees, full-time equivalent (<i>thousands</i>)	314	421	472	3.8
Profits (<i>million dollars</i>)	552	-155	(¹)	(¹)
Labor productivity ² (<i>thousand dollars</i>)	67.5	58.4	62.5	-0.7
Unit labor cost ³	0.51	0.76	0.83	4.5
Unit capital cost ⁴	0.28	0.23	0.33	1.7

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

second parties;¹¹ real estate (including ownership, leasing, and development); legal, engineering, and accounting services; advertising services; and other professional services, including commercial photography. Other significant inputs include duplication services, dubbing/subtitling for foreign markets,¹² communication services, and construction services, such as set building.

Real gross domestic product also grew at an average annual rate of about 3 percent during 1990-2001, reaching \$30 billion. Unit labor costs increased by an average annual rate of 4.5 percent, principally due to near zero labor productivity growth. Further, rapidly increasing unit labor costs partially reflect significantly higher wages for top actors. Industry experts note that salaries of leading performers that

¹¹ Intermediate inputs have been identified by consulting input-output tables developed for 1992 and 1997, the most recent years for which these tables are available. Input-output tables capture inputs to the motion picture industry in a broad SIC grouping that also reflects the amusement industry.

¹² Standard and Poor's, *Industry Surveys, Movie & Home Entertainment*, Nov. 16, 2000, p.17, found at <http://www.netadvantage.standardandpoors.com/>, retrieved Dec. 17, 2003.

frequently appear in blockbuster films¹³ typically averaged \$20 million per film by September 2000, a figure that has increased dramatically in recent years.¹⁴ Conversely, unit capital costs increased slightly, by 1.5 percent per annum, on average, during 1990-2001. The relatively low growth in unit capital costs appears to reflect uncertain profitability¹⁵. In order to reduce risk, studios are increasingly partnering to share distribution, production,¹⁶ and marketing costs.¹⁷

In addition, movie studios increasingly seek to reduce production costs by offshore outsourcing certain inputs. Currently, prospects for offshoring appear highest in 3-D animation, linear and nonlinear editing, and advertising¹⁸. Whether these efforts will improve profitability is unclear.

¹³ A blockbuster is defined as a film grossing \$100 million or more in domestic box office receipts. Standard and Poor's, *Industry Surveys, Movie & Home Entertainment*, Aug. 28, 2003, p. 12.

¹⁴ Standard and Poor's, *Industry Surveys, Movie & Home Entertainment*, Nov. 16, 2000, p.14, found at <http://www.netadvantage.standardandpoors.com/>, retrieved Dec. 17, 2003.

¹⁵ In the motion picture industry the overall odds of profitability are low. According to the Motion Picture Association of America (MPAA), only one in ten films retrieves its investment. BEA data suggest that the United States motion picture industry, taken as a whole, has not generated profits since 1994. Movie studios traditionally rely on occasional blockbusters to cover the losses generated by the majority of their movies. See U.S. International Trade Commission, "U.S. Film Industry: How Mergers and Acquisitions are Reshaping Distribution Patterns Worldwide," *Industry Trade and Technology Review*, Jan. 1997, USITC Publication no. 3017, p.18. MPAA, *Anti-Piracy, MPAA*, found at <http://www.mpa.org/antipiracy/content.htm>, retrieved on Jan. 14, 2004.

¹⁶ According to the MPAA, the total cost to produce a motion picture, for the average major studio, was over \$80 million in 2000. MPAA, *Anti-Piracy, MPAA*, found at <http://www.mpa.org/antipiracy/content.htm>, retrieved on Jan. 14, 2004.

¹⁷ Industry representative, interview with USITC staff, Jan. 13, 2004.

¹⁸ Kris Maher, "Next on the Outsourcing List," *The Wall Street Journal*, Mar. 23, 2004, pp. B-1 and B-8.

CHAPTER 4

BANKING AND SECURITIES SERVICES

Introduction

For the purposes of this discussion, banking and securities services comprise both fee-based commercial banking services and securities-related services. Fee-based commercial banking services include financial management and transaction services; advisory services; custody services;¹ credit card services; and other credit-related services, such as the provision of standby letters of credit for trade financing.² Securities-related services include brokerage services; securities lending services;³ securities clearance and settlement services; securities trading services; private placements;⁴ and securities underwriting services. Deposit-taking and lending services are excluded from this discussion.⁵ Both fee-based commercial banking services and securities-related services can be traded across borders or sold through affiliates.

Trade and Investment Trends

Cross-Border Trade

U.S. cross-border exports of banking and securities services increased by 4 percent to \$15.9 billion in 2002, following a 10-percent average annual increase recorded during 1997-2001. U.S. imports of banking and securities services decreased for the third consecutive year to \$3.7 billion in 2002, compared to a 5-percent average annual growth rate during 1997-2001. The rise in exports, coupled with the drop in imports, resulted in 9-percent growth in the U.S. trade surplus on banking and

¹ A custodian holds securities under a written agreement for a client and buys and sells when instructed. Custody services include securities safekeeping as well as collection of dividends and interest. Thomas P. Fitch, *Dictionary of Banking Terms* (New York: Barron's, 1990), p. 172.

² A standby letter of credit represents an obligation by the issuing bank to a designated third party (the beneficiary) that is contingent on the failure of the bank's customer to perform under the terms of the contract with the beneficiary. A standby letter of credit is most often used as a credit enhancement, with the understanding that, in most cases, it will never be drawn against or funded. Fitch, *Dictionary of Banking Terms*, p. 591.

³ A securities loan is a loan made by broker-dealers, banks, or other organizations to finance the purchase of securities. Fitch, *Dictionary of Banking Terms*, p. 552.

⁴ A private placement is the sale of an entire issue of securities to a small group of investors. Fitch, *Dictionary of Banking Terms*, pp. 481-482.

⁵ BEA does not report data on trade in deposit-taking and lending services provided by commercial banks.

securities services to \$12.2 billion (figure 4-1). The increase in exports was largely a result of increased brokerage commissions as foreign trade in U.S. bonds accelerated.⁶ Conversely, a decline in new issues of U.S. stocks and bonds abroad⁷ led to lower payments of brokerage commissions and thus, decreased imports.⁸

The United Kingdom, Bermuda, Belgium-Luxembourg, Canada, and Japan were the largest markets for U.S. exports of banking and securities services in 2002, purchasing \$2.7 billion, \$1.2 billion, \$983 million, \$873 million, and \$721 million of such services, respectively (figure 4-2). These figures represent 19-percent annual declines in exports to both Japan and Canada.⁹ Conversely, exports to the remaining three countries increased, with Belgium-Luxembourg showing the largest gain of 224 percent, or \$680 million over the 2001 level. The substantial gain is likely attributable to Luxembourg's role as a growing hub for pan-European distribution of mutual funds, owing to the country's favorable tax regime, and its associated purchase of services such as financial advising¹⁰ directly from U.S. firms. Exports to Bermuda rose by 32 percent, or \$299 million, which may reflect a continuing trend by U.S. corporations, formerly registered in the United States, to relocate to Bermuda for tax purposes.¹¹

As noted, a decline in securities transactions abroad in 2002 led to a decrease in brokerage commissions payments and the subsequent downturn in imports of financial services overall.¹² Imports from the United Kingdom, which accounted for 34 percent of total U.S. imports of banking and securities services in 2002, decreased by 27 percent from the previous year to \$1 billion.¹³ Even so, the United Kingdom continues to achieve this significant share as a large number of U.S. orders for foreign securities are placed through the offices of London financial services firms. Japan, Switzerland, and Germany were the next leading suppliers of such services, with imports from these countries totaling \$259 million, \$211 million, and \$171 million, respectively, all of which were lower than their 2001 levels.¹⁴

⁶ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 68. Foreign net purchases of U.S. corporate bonds reached \$182.3 billion in 2002, lower than the previous two years, but still the third-highest level to date. Foreign net purchases of U.S. treasuries, to include bills, bonds, and notes, rose 558 percent to \$121.7 billion in 2002. Securities Industry Association, *Securities Industry Fact Book 2003*, p. 79.

⁷ Foreign net purchases of U.S. stocks declined 58 percent to \$49.4 billion in 2002. Securities Industry Association, *Securities Industry Fact Book 2003*, p. 79.

⁸ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 70.

⁹ In 2002, Japan's GDP growth decreased by one percent from the previous year. The World Bank Group, *World Development Indicators Online*, found at <http://devdata.worldbank.org/dataonline/>, retrieved Feb. 12, 2004.

¹⁰ Industry representative, email correspondence with USITC staff, Mar. 9, 2004.

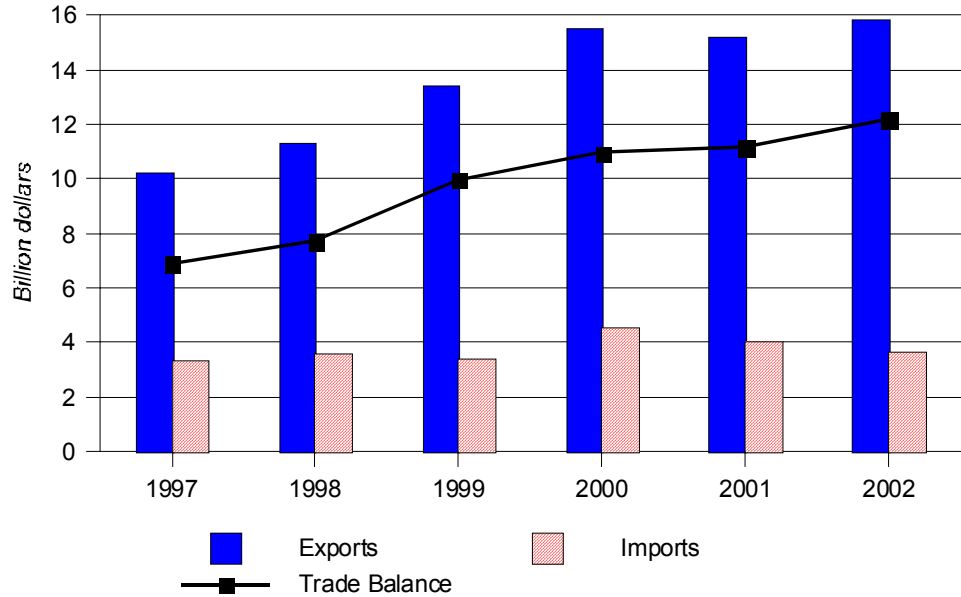
¹¹ For more information on the increase in size and frequency of multinational corporations shifting from U.S. parentage to foreign parentage in low-or no-tax countries (to include Bermuda) see U.S. Department of the Treasury, *Corporate Inversion Transactions: Tax Policy Implications*, May 17, 2002.

¹² USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 70.

¹³ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 101.

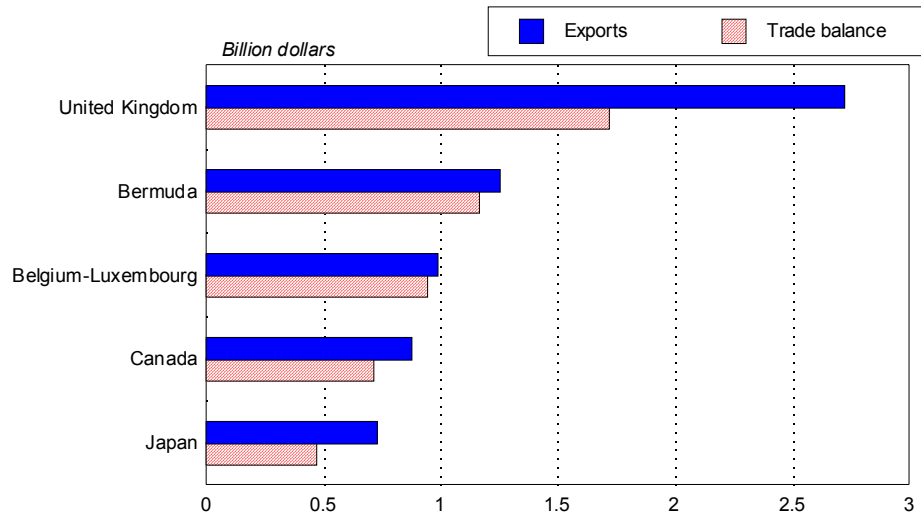
¹⁴ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 101.

Figure 4-1
Banking and securities services: Cross-border trade, 1997-2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-79.

Figure 4-2
Banking and securities services: U.S. cross-border exports and trade balance, by major trading partners, 2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 100-101.

Foreign Direct Investment and Affiliate Transactions

The U.S. direct investment position abroad in security and commodity brokerage and related financial services (principally holding companies) totaled \$172 billion in 2002, a 2-percent increase from 2001. This followed an average annual growth rate of 18 percent during the 1997-2001 period.¹⁵ In 2001, data on total sales of financial services by majority-owned foreign affiliates of U.S. multinational companies could not be disclosed for reasons of confidentiality, though data for previous years are available (figure 4-3). However, sales by affiliates located in the United Kingdom, traditionally accounting for the largest share, totaled \$17 billion in 2001, a 9-percent increase over 2000 levels. Sales by U.S.-based affiliates in Canada, Germany, and Japan totaled \$4.1 billion, \$2.8 billion, and \$2.5 billion, respectively, in 2001. The figure for Germany represents a 235-percent increase over 2000 levels.¹⁶

The foreign direct investment position in the U.S. security and commodity brokerage and related financial services market totaled \$58.8 billion in 2002, representing a 14-percent decline from 2001.¹⁷ The decrease is likely attributable to sluggish economic conditions in the United States at the time, and the reluctance by foreign parent companies to reinvest earnings by U.S. affiliates into those firms.¹⁸ The downturn followed a 12-percent average annual growth rate during the 1997-2001 period. U.S. purchases of financial services from majority-owned U.S. affiliates totaled \$27.2 billion in 2001, a 13-percent decrease from 2000 levels.¹⁹ Sales by Swiss-owned affiliates accounted for \$9.5 billion, or 35-percent of the total, likely due to the acquisition of two U.S. financial services firms by Swiss parent companies in 2000.²⁰ In 2001, U.S. purchases from affiliates of companies based in Canada, the United Kingdom, Germany, and France totaled \$3.5 billion, \$3.4 billion, \$2.5 billion, and \$2.4 billion, respectively.²¹

Industry Analysis

Real gross output for depository institutions, primarily commercial banks and savings and loan establishments, grew at an average annual rate of 2 percent during 1990-2001, reaching \$396 billion (table 4-1). The increase in demand for banking

¹⁵ USDOC, BEA, *Survey of Current Business*, Sep. 2003, p. 146. For the purposes of this discussion, financial services excludes depository institutions, insurance, and real estate.

¹⁶ Recently, German consumers have reportedly raised their expectations of financial services providers and are seeking more diverse offerings. Concurrently, however, German banks are facing declining returns, partly as a result of the loss in foreign exchange revenues that accompanied the conversion to the Euro. Subsequently, German banks are increasing partnerships with U.S. financial services firms that offer more competitive products, technology, services, and expertise so as to better respond to consumer preferences. Industry representative, email correspondence with USITC staff, Mar. 9, 2004.

¹⁷ USDOC, BEA, *Survey of Current Business*, Sep. 2003, p. 93.

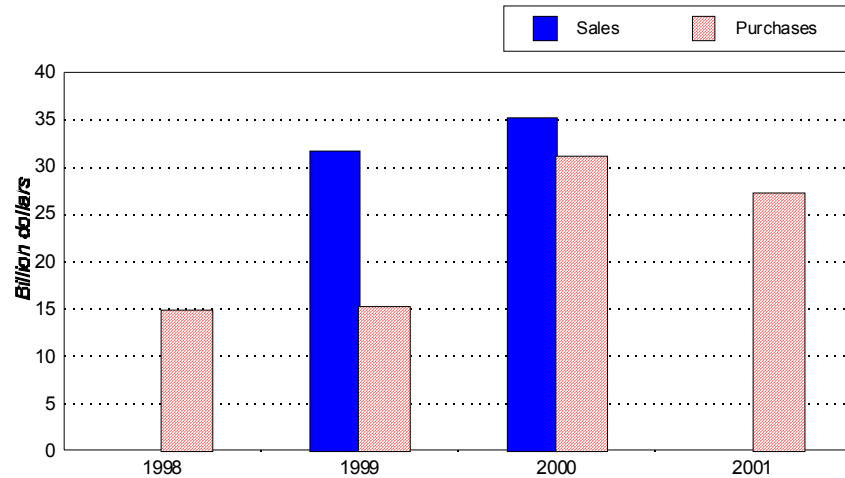
¹⁸ USDOC, BEA, *Survey of Current Business*, Jul. 2003, p. 22.

¹⁹ USDOC, BEA, *Survey of Current Business*, Oct. 2003, pp. 117-118.

²⁰ In 2000, Donaldson, Lufkin & Jenrette was acquired by Credit Suisse Group, and Paine Webber was acquired by UBS AG.

²¹ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 118.

Figure 4-3
Banking and securities services:¹ Sales² by U.S. majority-owned affiliates,
and purchases from foreign majority-owned affiliates, 1998-2001



¹ Excludes depository institutions.

² Sales data for 1998 are not available. Also, 2001 sales data were suppressed to avoid disclosure of data of individual companies.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-118; Oct. 2002, pp. 121 and 123; and Nov. 2001, pp. 93-94.

services motivated firms to use more intermediate inputs, which increased by 3.2 percent per year, on average, in inflation adjusted terms. Similarly, real gross output for security and commodity brokers grew at an average annual rate of 15.6 percent during the same period to \$320.3 billion, facilitated by a 13.6 percent average annual rate of growth in real intermediate inputs.²² Between 1992 and 1997, the most recent years for which data on such inputs are available, nominal intermediate inputs for the financial services sector increased 75 percent to \$291 billion. The most significant expenditure was on financial services, which increased by 120 percent during the period, likely reflecting outsourcing to both domestic and foreign providers, as well as increasing securities prices. Firms cite the need to reduce operating costs, monitor market fluctuations, and provide business continuity in the event of terrorism or natural disasters as the principal factors motivating the offshore outsourcing of financial services.²³ In addition, purchases of business and professional services grew by 63 percent, a likely indication of increased management and consulting activity; real estate grew by 40 percent, which may reflect branch expansion or early

²² Average annual growth in real intermediate inputs in the securities sector registered 22.2 percent during 1990-2000, but the substantial decline in market values in 2001 resulted in a 45.2 percent decline in intermediate inputs that year.

²³ Deloitte Research, *The Cusp of a Revolution: How Offshoring Will Transform the Financial Services Industry*, p. 4.

Table 4-1
U.S. finance industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
	<i>Percent</i>			
Depository institutions:				
Real gross output (<i>billion dollars</i>)	317.1	342.7	396.0	2.0
Real gross domestic product (<i>billion dollars</i>)	244.0	241.0	290.4	1.6
Real intermediate inputs (<i>billion dollars</i>)	73.5	101.7	104.2	3.2
Real net stock of private fixed assets (<i>billion dollars</i>)	262.5	274.6	302.5	1.3
Employees, full-time equivalent (<i>thousands</i>)	2,157	1,920	1,902	-1.1
Profits (<i>million dollars</i>)	(¹)	(¹)	(¹)	(¹)
Labor productivity ² (<i>thousands</i>)	113.1	125.5	152.7	2.8
Unit labor cost ³	0.28	0.35	0.37	2.4
Unit capital cost ⁴	0.39	0.63	0.84	7.3
Non depository institutions:				
Real gross output (<i>billion dollars</i>)	56.5	108.4	149.5	9.2
Real gross domestic product (<i>billion dollars</i>)	26.3	39.2	91.9	12.0
Real intermediate inputs (<i>billion dollars</i>)	29.9	69.2	64.4	7.2
Real net stock of private fixed assets (<i>billion dollars</i>)	117.8	192.2	316.7	9.4
Employees, full-time equivalent (<i>thousands</i>)	361	492	669	5.8
Profits (<i>million dollars</i>)	(¹)	(¹)	(¹)	(¹)
Labor productivity ² (<i>thousands</i>)	72.9	79.7	137.4	5.9
Unit labor cost ³	0.52	0.64	0.53	0.3
Unit capital cost ⁴	0.28	0.26	0.37	2.6
Security and commodity brokers:				
Real gross output (<i>billion dollars</i>)	65.3	169.3	320.3	15.6
Real gross domestic product (<i>billion dollars</i>)	42.0	108.0	245.1	17.4
Real intermediate inputs (<i>billion dollars</i>)	23.2	61.2	94.1	13.6
Real net stock of private fixed assets (<i>billion dollars</i>)	44.7	68.9	117.7	9.2
Employees, full-time equivalent (<i>thousands</i>)	430	557	767	5.4
Profits (<i>million dollars</i>)	(¹)	(¹)	(¹)	(¹)
Labor productivity ² (<i>thousands</i>)	97.7	193.9	319.6	11.4
Unit labor cost ³	0.75	0.67	0.57	-2.5
Unit capital cost ⁴	0.20	0.30	0.13	-3.9

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

instances of facilities management outsourcing;²⁴ and legal and accounting services rose by 60 percent, reflecting elevated merger and acquisition activity during the period.²⁵

During 1990-2001, real gross output of nondepository institutions, which primarily include mortgage bankers and brokers, experienced average annual growth of 9.2 percent to \$149.5 billion. In this case, average annual growth of 12 percent in gross domestic product, mirroring increasing inputs of labor and capital, outpaced the 7.2 percent rise in intermediate inputs. Employment growth averaged 5.8 percent annually, and labor productivity kept pace at 5.9 percent. It is likely that the 3.3-percent average annual decline²⁶ in 30-year conventional mortgage interest rates during 1990-2001 sparked activity and growth in this sector.

²⁴ The Outsourcing Institute, *Outsourcing Essentials*, "Facilitating Growth: The Fastest Growing Outsourcing Category Over the Past Year Has Been Real Estate/Facilities Management," Winter 2003, p. 12.

²⁵ U.S. mergers and acquisitions grew at an average annual rate of 45 percent between 1992-1997 to \$718 billion. Securities Industry Association (SIA), *2003 Securities Industry Fact Book* (New York: SIA, 2003), p. 18.

²⁶ Federal Home Mortgage Corporation historical data on 30-year conventional mortgages found at Internet address <http://www.federalreserve.gov/releases/h15/data/a/cm.txt>, retrieved Feb. 12, 2004.

CHAPTER 5

EDUCATION SERVICES

Introduction

Education services include formal academic instruction in primary, secondary, and higher education institutions, as well as instructional services offered by libraries and vocational, correspondence, language, and special education schools. Cross-border trade predominates in this service industry. U.S. cross-border exports reflect the estimated tuition and living expenses of foreign residents¹ enrolled in U.S. colleges and universities, while U.S. cross-border imports of education services represent the estimated tuition and living expenses of U.S. residents studying abroad.² Affiliate transactions in education services occur when educational institutions, using their own faculty and facilities, provide courses in foreign markets. Data on affiliate transactions are limited, especially those concerning sales by U.S.-based affiliates of foreign-parent firms; thus, the trade discussion in this chapter focuses principally on cross-border trade.

Trade and Investment Trends

Cross-Border Trade

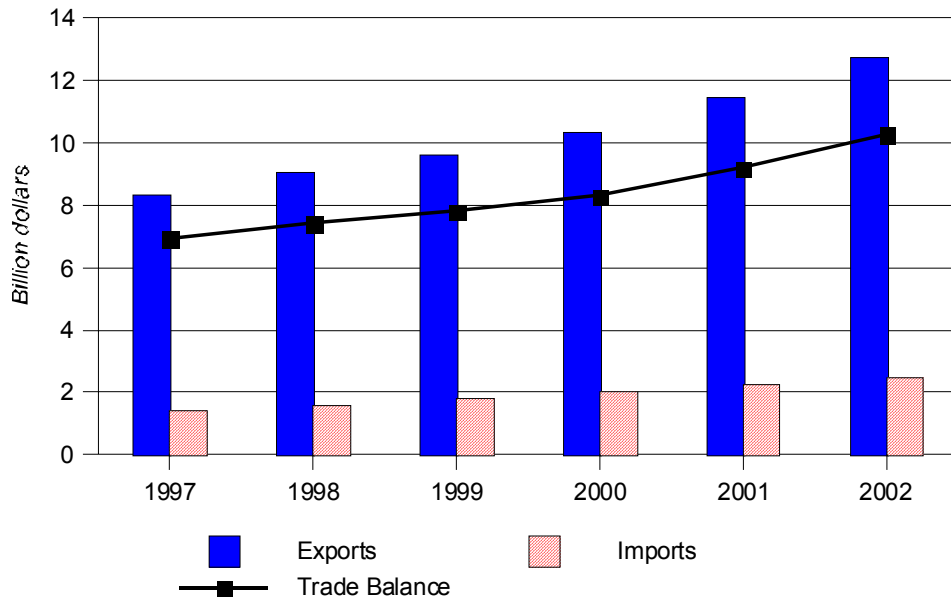
In 2002, U.S. exports of education services totaled \$12.8 billion, while imports amounted to \$2.5 billion, netting a \$10.3-billion surplus (figure 5-1). Exports increased by 11.2 percent in 2002, faster than the 8.3-percent average annual growth rate recorded during 1997-2001. In 2001 and 2002, foreign students' enrollment in colleges and universities in the United States increased each year by 6.4 percent, the highest annual rate of increase for such enrollments since 1980.³ In 2002, almost

¹ Foreign residents do not include U.S. citizens, immigrants, or refugees.

² U.S. residents must receive academic credit for study abroad from accredited U.S. institutions, whether or not they also receive academic credit from the foreign institution, to be included in trade data; the tuition and living expenses of those students whose academic credits for study abroad do not transfer to U.S. institutions, or who study abroad on an informal basis, are not included. Thus, actual study abroad by U.S. students is understated in the trade data and, accordingly, the U.S. trade surplus in education services is overstated. Institute of International Education (IIE), *Open Doors 2002* (New York, NY: IIE, 2002), p. 94.

³ Institute of International Education (IIE), *Open Doors 2003*, data, found at <http://opendoors.iienetwork.org/>, retrieved Jan. 15, 2004. During 1997-2002, enrollment by foreign students and expenditures per foreign student increased at an average annual rate of 4.9 percent and 3.7 percent, respectively. Calculated by USITC staff from data in IIE, *Open Doors 2003*, and U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Oct. 2003, pp. 78-79.

Figure 5-1
Educational services: Cross-border trade, 1997-2002



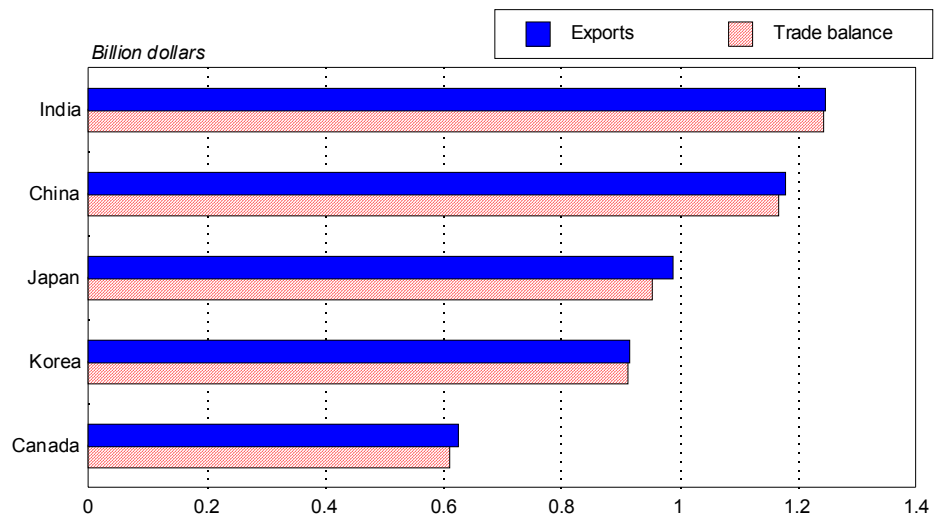
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-79.

583,000 foreign students attended colleges and universities in the United States; such students accounted for 4.3 percent of all students enrolled in U.S. colleges and universities that year, the highest proportion of foreign student enrollment to date. In 2002, the principal U.S. export markets for education services were India (10 percent), China (9 percent), Japan (8 percent), Korea (7 percent), and Canada (5 percent) (figure 5-2). During 1997-2002, India rose from the fourth-ranked U.S. export market for education services to the top-ranked market. Exports to India increased by more than 15 percent per year owing to substantial increases in enrollment by students from India rather than to higher expenditures per student.

U.S. imports increased by 8.7 percent in 2002, slower than the 12.9-percent average annual growth rate during 1997-2001. Approximately 161,000 U.S. students, a 4.4-percent increase from the previous year, received credit for study abroad in 2002. The average annual rate of increase in the number of U.S. students studying abroad was 11.6 percent during 1997-2001.⁴ The leading import suppliers in 2002 were the United Kingdom (19 percent), Spain (11 percent), Italy (10 percent), Mexico (9 percent), and France (8 percent). U.S. students tend to pursue study abroad for less

⁴ IIE data, found at <http://opendoors.iienetwork.org/>, retrieved Jan. 21, 2004. Trend data on the average annual rate of growth were calculated by USITC staff from IIE data.

Figure 5-2
Educational services: U.S. cross-border exports and trade balance, by major trading partners, 2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 100-101.

than one semester,⁵ while foreign students usually enroll in U.S. colleges and universities for longer periods, thereby promoting consistent trade surpluses in education services.

Although education services trade data for 2003 are not yet published,⁶ industry sources state that the foreign student enrollment growth rate in the United States for the 2002-03 academic year slowed to 0.6 percent, the slowest annual growth rate since 1996.⁷ Moreover, 46 percent of 276 higher education institutions surveyed in October 2003 reported that their foreign student enrollment decreased in the fall term 2003, principally attributed to more stringent U.S. visa application procedures, deteriorating economic circumstances abroad, and increasingly attractive foreign education institutions.⁸

⁵ IIE data, found at <http://opendoors.iienetwork.org/>, retrieved Jan. 21, 2004.

⁶ BEA publishes detailed cross-border trade data on education services annually in the *Survey of Current Business* during the fourth quarter for the preceding calendar year.

⁷ IIE, "International Student Enrollment Growth Slows in 2002/2003," press release, Nov. 3, 2003, found at <http://opendoors.iienetwork.org/>, retrieved Jan. 15, 2004.

⁸ IIE, "Fall 2003 Survey Report on International Educational Exchange," Nov. 17, 2003, found at <http://opendoors.iienetwork.org/>, retrieved Jan. 15, 2004. One-third of the responding institutions had higher enrollments from foreign students.

Foreign Direct Investment and Affiliate Transactions

Within education services, the amount of U.S. direct investment abroad and foreign direct investment in the United States is relatively small; thus, available data on investment and affiliate operations are limited. In 2002, U.S. investors' direct investment position in education services affiliates abroad totaled \$214 million, which surpassed the previous year by 8 percent. In 2001, foreign-based education services affiliates of U.S. parent firms generated sales of \$1.2 billion (figure 5-3), up 35 percent from the previous year.⁹ Foreign investors' direct investment in education services affiliates in the United States in 2002 totaled \$87 million, a 12-percent decrease from the previous year.¹⁰ In 2001, sales by U.S.-based education services affiliates totaled \$309 million, a 4-percent increase over the previous year, although a 37-percent decline from sales in 1997, the first year for which such transactions were reported separately.¹¹

Industry Analysis

During 1990-2001, the U.S. education services industry's real gross output increased by an average annual rate of 2.7 percent, to \$117.5 billion (table 5-1). The similarity of average annual growth rates in real gross domestic product (2.6 percent) and real intermediate inputs (2.9 percent) indicates that a collection of factors enabled growth in real gross output.

The industry's gross domestic product, or value added by primary inputs, amounted to \$66.5 billion in 2001. During 1990-2001, the average annual growth rate of unit capital costs, measuring 7.1 percent, exceeded the average annual growth rate of unit labor costs, measuring 4.5 percent. For much of the period, colleges and universities benefitted from the accumulation of endowment funds¹² and growing income from

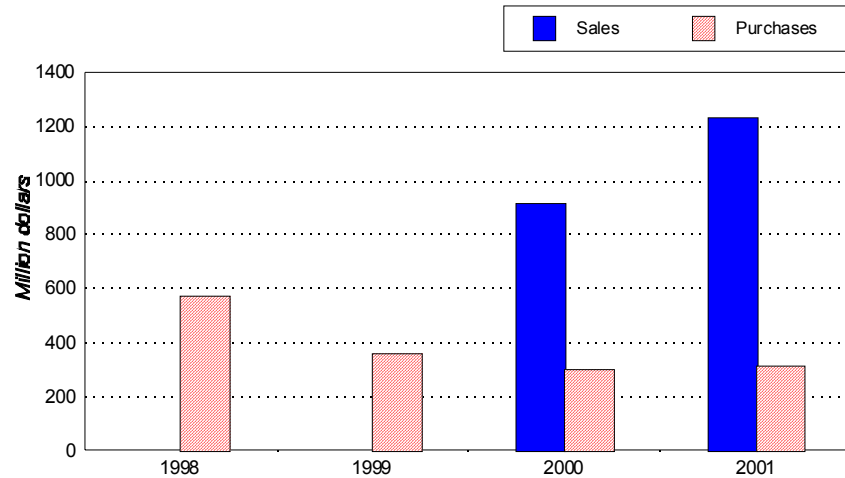
⁹ In part, the sales increase in 2001 by foreign-based education affiliates of U.S. firms may be attributable to acquisitions of several foreign higher education institutions by Sylvan Learning Systems, Inc. (U.S.), beginning in 1999. Sylvan Learning Systems, Inc., news releases and corporate financial reports. For years prior to 2000, data on sales of foreign-based education services affiliates of U.S. firms are unavailable or were suppressed to avoid disclosure of the operations of individual firms. U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-116.

¹⁰ U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 2003, p. 94.

¹¹ U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2000, p. 160, and Oct. 2003, pp. 117-118.

¹² National Association of College and University Business Officers (NACUBO), annual endowment studies, various years. However, the rate of return on endowments contracted by 3.6 percent in the fiscal year ended June 30, 2001. For additional information, see http://www.nacubo.org/about_nacubo/.

Figure 5-3
Educational services: Sales¹ by U.S. majority-owned affiliates, and purchases
from foreign majority-owned affiliates, 1998²-2001



¹ 1999 sales data was suppressed to avoid disclosure of data of individual companies.

² 1998 sales data are not available.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-118; Oct. 2002, p. 123; and Nov. 2001, p. 94.

Table 5-1
U.S. education industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
				Percent
Real gross output (<i>billion dollars</i>)	87.3	103.8	117.5	2.7
Real gross domestic product (<i>billion dollars</i>)	50.3	58.0	66.5	2.6
Real intermediate inputs (<i>billion dollars</i>)	37.0	45.8	50.8	2.9
Real net stock of private fixed assets (<i>billion dollars</i>)	12.5	14.8	19.2	4.0
Employees, full-time equivalent (<i>thousands</i>)	1,527	1,844	2,237	3.5
Profits (<i>million dollars</i>)	459	677	(¹)	(¹)
Labor productivity ² (<i>thousands</i>)	32.9	31.5	29.7	-0.9
Unit labor cost ³	0.73	0.94	1.19	4.5
Unit capital cost ⁴	0.03	0.05	0.07	7.1

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

sources such as license fees,¹³ tuition,¹⁴ and donations.¹⁵ Such income growth financed service providers' acquisitions or upgrades in private fixed assets, such as computer hardware and software, land, and facilities, as evidenced by the 4-percent annual increase, on average, in the net stock of private fixed assets during 1990-2001.

Employment in education services increased by an average annual rate of 3.5 percent during 1990-2001, slightly slower than the growth rate for private fixed assets. The relative similarity in growth rates for private fixed assets and employment appears to illustrate that capital does not directly substitute for labor in the education services industry.¹⁶ The 3.5-percent average annual growth rate for compensation per employee matched the growth rate for employment. In part, higher compensation resulted from shifts in higher education's overall workforce. In recent years, nonteaching professional staff such as computer services and endowment management services professionals have increased, while nonprofessional staff have decreased in proportion to overall employment in higher education services.¹⁷

Real intermediate inputs to education services amounted to \$50.8 billion in 2001. Certain business and professional services¹⁸ grew by 15.7 percent, leading growth in real intermediate inputs for the education services industry during 1990-2001. Additional intermediate inputs included advertising (5.5 percent), other printing and publishing¹⁹ (4.6 percent), and maintenance and repair services (4.1 percent).

¹³ Association of University Technology Managers, "AUTM Licensing Survey: FY 2002," found at http://www.autm.net/index_n4.html, retrieved Feb. 27, 2004. From historical data in the AUTM survey, USITC staff calculated that net license income reported by U.S. universities increased at an average annual rate of 19 percent during the 1994-2001 fiscal years.

¹⁴ U.S. Department of Education, National Center for Education Statistics (NCES), *Study of College Costs and Prices, 1988-89 to 1997-98*, vol. 1, Dec. 2001, pp. vii-viii, found at Internet address <http://nces.ed.gov/pubs2002/2002157.pdf>, retrieved Feb. 27, 2004. NCES reported that average annual tuition growth rates exceeded the growth in inflation at public and private higher education institutions during 1989-98; for example, by 4.8 percent at 4-year public institutions.

¹⁵ Rand Corporation, Council for Aid to Education (CAE), annual survey on voluntary support for education, various years, found at <http://www.cae.org/>. During 1990-2000, CAE reported that non-government sources of contributions to colleges and universities increased each year, in most years by at least 10 percent. In the fiscal year ended June 30, 2002, however, such contributions decreased by 1 percent, as economic weakness and declines in stock market portfolio values resulted in reduced gifts to higher education institutions. In fiscal year 2003, contributions remained at the level received in the previous year.

¹⁶ Steven G. Rivkin, "The Estimation of Productivity Change in Education," Apr. 2000, revised Aug. 2000, paper prepared for Brookings Institution Workshop on Measuring the Output of the Education Sector, Apr. 7, 2000, found at http://www.brookings.edu/dybkcroot/es/research/projects/productivity/workshops/20000407_01.pdf, retrieved Feb. 17, 2004.

¹⁷ NCES, *Digest of Education Statistics 2002*, ch. 3, found at <http://nces.ed.gov/programs/digest/d02/>, retrieved Jan. 16, 2004.

¹⁸ Examples of such activity include management consulting related to technological and curriculum innovation, development, and implementation. Industry sources, interviews by USITC staff, Washington, DC, Sept. 16, 2003.

¹⁹ Other printing and publishing excludes newspapers and periodicals.

Real gross domestic product in 2002 and 2003 for the industry is likely to fall below average growth rates recorded during 1990-2001, as capital growth has been eroded in recent years by declines or reduced growth in key funding sources such as gifts, endowments,²⁰ and state tax appropriations for operations.²¹ Meanwhile, wages are expected to be driven upward by public demand for high-quality teachers and other education professionals and student services, in light of projections that student populations will increase by 5 percent in elementary and secondary schools, and by 19 percent in degree-granting institutions from 2001 to 2013.²²

²⁰ NACUBO, "Higher Education Endowments Still Struggled in FY03," Jan. 20, 2004, found at http://www.nacubo.org/accounting_finance/endowment_study/, retrieved Mar. 1, 2004.

²¹ James C. Palmer and Sandra L. Gillilan, "State Higher Education Tax Appropriations for Fiscal Years 2002 and 2003," Illinois State University, Center for the Study of Education Policy, *Grapevine: A National Database of State Tax Support for Higher Education*, annual survey; and Edward R. Hines, "State Higher Education Appropriations 1991-92," State Higher Education Executive Officers, April 1992, found at <http://www.coe.ilstu.edu/grapevine/>, retrieved Feb. 27, 2004. From data reported in these surveys, USITC staff calculated that state tax appropriations to college and university operations increased at a 4.1-percent average annual rate in current dollars during the 1990-2001 fiscal years, although growth rates slowed to 3.4 percent and 1.2 percent in the 2002 and 2003 fiscal years, respectively.

²² NCES, *Projections of Education Statistics to 2013*, Oct. 2003, found at <http://nces.ed.gov/pubs2004/2004013.pdf>, retrieved Mar. 1, 2004.

CHAPTER 6

EXPRESS DELIVERY SERVICES

Introduction

The U.S. express delivery services (EDS) industry comprises firms that provide expedited movement of documents, parcels and other goods. These firms maintain control over the shipments throughout the delivery process and often use technology to monitor the location of each item. The industry includes large firms that integrate ground and air networks to provide a broad range of door-to-door delivery services and smaller firms that compete within niche industry segments, such as same-day or specialized freight delivery services. Where items are shipped internationally, express delivery providers are involved in customs clearance procedures, including the payment of required duties and taxes. The predominant form of EDS firms' participation in foreign markets is through the establishment of a foreign affiliate in the market to be served, and subsequent sales to local consumers. Within geographic markets, ground transport is generally limited to deliveries of no more than 500 miles, while air transport is reserved for longer distances and "time-sensitive" deliveries.

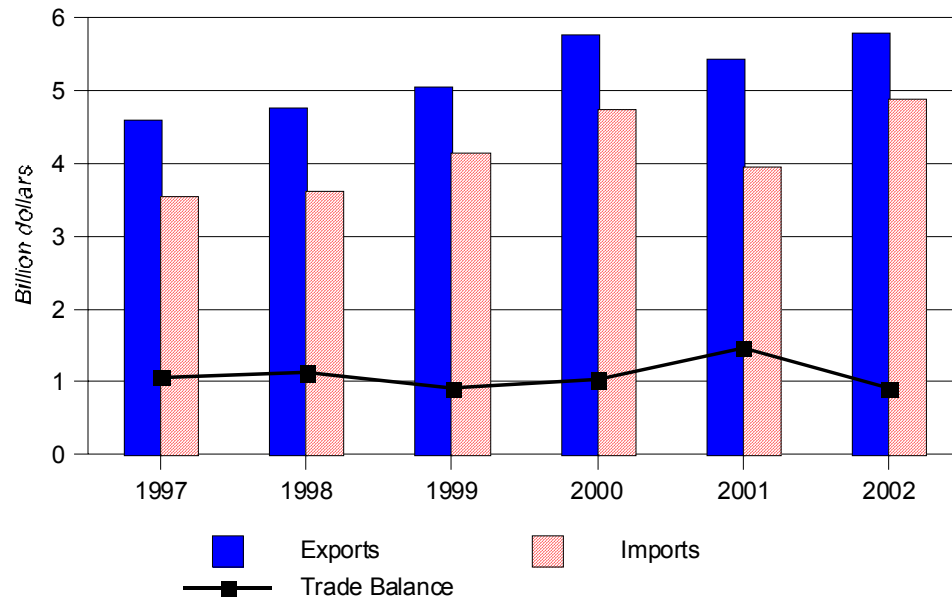
Trade and Investment Trends

Cross-Border Trade

Data on cross-border trade pertaining exclusively to express delivery services are not available. However, such trade is captured within air-freight transport data, which reflect the transport of goods by air, including time-definite (or express) delivery.¹ In 2002, U.S. exports of air freight services totaled \$5.8 billion, while U.S. imports totaled \$4.9 billion (figure 6-1). Exports increased by 6.6 percent in 2002, faster than the 4.2-percent average annual growth rate recorded during 1997-2001. Imports

¹ Data on U.S. exports of air freight services pertain to the carriage of documents, parcels, and freight by a U.S. carrier for a non-U.S. entity operating abroad. Data on U.S. imports of air freight services cover transactions derived from the carriage of documents parcels and freight by a foreign carrier to a U.S. entity operating in the United States. The accounts cover freight charges for transporting exports and imports of goods, and related express. The latter cover the receipts of U.S. carriers for transporting U.S. exports of goods, for transporting goods between two foreign parts, and the payments to foreign carriers for transporting U.S. imports of goods. The survey used by the U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA) to collect data requests revenue numbers for the transport of both freight and express items. Official from USDOC, BEA, telephone conversation with USITC staff, Nov. 21, 2003; and USDOC, BEA, Form BE-37, "U.S. Airline Operators' Foreign Revenues and Expenses," found at <http://www.bea.gov/bea/surveys/be37.pdf>, retrieved Nov. 21, 2003.

Figure 6-1
Air freight services: Cross-border trade, 1997-2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 82-85; Oct. 2002, pp. 88-91; and Oct. 2001, p. 68.

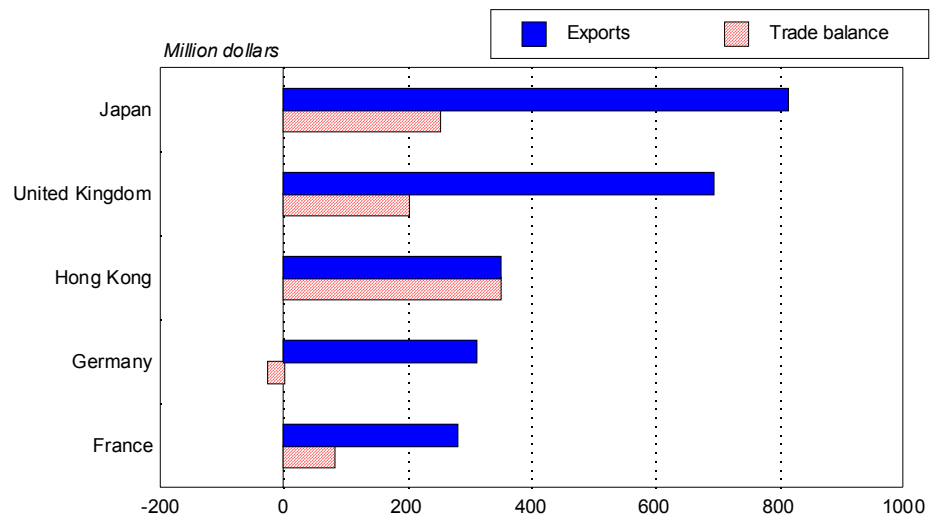
of U.S. air freight services increased by 23.2 percent, compared to a 2.8-percent average annual rate of growth during the period 1997-2001. The greater-than-average increase in exports and imports of air freight services during 2002 reflected a return to trade patterns that prevailed prior to 2001, when poor economic conditions and the September 11 terrorist attacks temporarily reduced EDS trade. These events led to sharp global declines in orders for goods, especially in the automotive and technology sectors, both of which depend on express air freight deliveries.²

The top five export markets for U.S. air-freight services in 2002 were Japan, the United Kingdom, Hong Kong, Germany, and France (figure 6-2). Exports to Japan totaled \$813 million, an increase of 5.7 percent from 2001, whereas exports to the United Kingdom reached \$693 million, representing a gain of 3.4 percent over the previous year. U.S. exports of air cargo services to Hong Kong, Germany, and France in 2002 totaled \$349 million, \$310 million, and \$279 million, respectively. Asia-Pacific was the fastest growing region for U.S. air-freight exports in 2002. During that year, U.S. exports of air cargo services to India grew by 100 percent, to Indonesia by 50 percent, and to China by nearly 30 percent.³ Other countries in

² Air Cargo Management Group, "International Air Freight and Express Industry Performance Analysis 2003," Nov. 2003, p. 18.

³ Over the previous 11 years, China and India were the fastest growing markets for U.S. air-freight services exports. During 1992-2002, U.S. exports of air cargo services to China and India grew at average annual rates of 34 percent and 24 percent, respectively. Data compiled by the Commission from *Survey of Current Business*, various issues, 1994-2003.

Figure 6-2
Air freight services: U.S. cross-border exports and trade balance, by major trading partners, 2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, p. 85.

which the market for U.S. air-freight services grew significantly in 2002 included Belgium-Luxembourg,⁴ Chile, Malaysia, New Zealand, and Norway.⁵

China was the largest source of U.S. air-freight imports in 2002. Imports from China reached \$582 million, an increase of 35.2 percent from the previous year. Japan was the second-largest supplier of U.S. air-freight imports at \$562 million, followed by the United Kingdom (\$493 million), Taiwan (\$368 million), and Germany (\$336 million). Of these four countries, U.S. imports from Taiwan experienced the highest growth, increasing by 41 percent over 2001. Other countries which registered large increases in air-freight shipments to the United States in 2002 included Brazil, Malaysia, Israel, Singapore, and Saudi Arabia.⁶

Affiliate Transactions

Data on transactions by foreign-based affiliates of U.S. express delivery firms are not available. Sales of courier and messenger services⁷ by U.S.-based affiliates of foreign firms totaled \$194 million in 2001.⁸ This represents less than 1 percent of the total domestic revenues generated by United Parcel Service (UPS) and FedEx Corporation (FedEx), which together had total receipts of \$40.7 billion in 2001.

⁴ BEA aggregates data pertaining to markets in Belgium and Luxembourg. USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 85.

⁵ Ibid.

⁶ Ibid.

⁷ The courier and messenger services sector comprises firms engaged in air, surface, or integrated delivery services, and includes large express delivery firms, such as FedEx and UPS, as well as smaller establishments that provide services in local markets.

⁸ Official from USDOC, BEA, telephone conversation with USITC staff, Nov. 6, 2003.

However, recent acquisitions by German-based Deutsche Post of U.S. express delivery firms DHL and Airborne, Inc. will likely have a measurable impact on U.S. affiliates' future sales of express delivery services. In 2002, DHL and Airborne generated combined revenues of \$18.5 billion.⁹

Sales of transportation and warehousing services¹⁰ by foreign-based affiliates of U.S. firms totaled \$20.7 billion in 2001. Such sales represent a slight decrease from \$21.3 billion in 2000, which was largely attributable to slow economic growth in Canada, Germany, and Australia, where sales declined by 2.6 percent, 4.2 percent, and 3.5 percent, respectively. In contrast, sales of transportation and warehousing services by U.S.-based affiliates of foreign firms totaled \$23.8 billion in 2001, representing an increase of 12 percent.

Industry Analysis¹¹

The largest U.S.-based firms that offer integrated¹² express delivery service are UPS and FedEx. In 2002, these firms generated revenues of \$31.3 billion and \$20.6 billion, respectively.¹³ Two other large U.S. firms that offer integrated, time-definite delivery services for heavy freight are Menlo Worldwide and BAX Global. In 2002, Menlo Worldwide generated revenues of \$2.7 billion, and BAX Global, \$1.9 billion.¹⁴

In recent years, U.S.-based express delivery service firms have been expanding their service offerings beyond package and document delivery services to include logistics

⁹ In 2002, Airborne, Inc had revenues of approximately \$3.3 billion. "Airborne, Inc. Form 10-k," found at <http://www.sec.gov/>, retrieved Aug. 19, 2003.

¹⁰ Express delivery service firms report transportation and warehousing activity annually to the U.S. Census Bureau.

¹¹ BEA data on real gross output, real gross domestic product, real intermediate inputs assets, employees, profits, and labor productivity are not available for express delivery services, nor for air freight specifically.

¹² The term 'integrated' refers to the door-to-door shipment of goods often using multiple modes of transport and employing information technology (IT) to track shipments while they are in transit.

¹³ FedEx Corporation, *Annual Report 2002*, found at <http://www.fedex.com/>, retrieved Aug. 15, 2003; and United Parcel Service, *UPS Annual Report 2002*, found at <http://www.ups.com/>, retrieved Aug. 15, 2003.

¹⁴ Menlo Worldwide is a division of CNF, Inc., and was formed in December 2002 as a result of a merger between Emery Forwarding (now called Menlo Forwarding) and Menlo Worldwide Logistics. Menlo Worldwide provides express delivery and logistics services. BAX Global is a division of the Pittston Company. The Pittston Company, *2002 Annual Report*, found at <http://www.pittston.com/>, retrieved Aug. 19, 2003; CNF Inc., *2002 Annual Report*, found at <http://www.cnf.com/>, retrieved Aug. 19, 2003; and industry representative, telephone interview with USITC staff, Sept. 16, 2003.

and supply chain management services.¹⁵ Demand for these services has increased as manufacturers increasingly utilize third-party logistics (3PL) providers to better focus on their core businesses and reduce inventory costs. Third-party logistic service providers typically benefit from economies of scale by maintaining the infrastructure necessary to provide multiple customers with services more efficiently than would be possible if such services were handled in-house.¹⁶ In 2002, logistics service revenues for UPS totaled \$1 billion, representing an increase of 39 percent over such revenues in 2001.¹⁷ Recently, both UPS and FedEx have indicated that logistics-related services are key components of their respective growth strategies.¹⁸

Although express delivery services involve a broad range of services, the core express delivery services are transportation and warehousing.¹⁹ In 2001, trucking and warehousing services, which include ground based courier services, generated real gross output of \$240.4 billion, representing a slight (2.6 percent) decline from \$246.9 billion in 2000. The decline in 2001 is attributable, in part, to the U.S. economic slowdown, which resulted in a significant decline in demand for trucking services.²⁰

During 1990-2001, real gross output in the trucking and warehousing sector increased at an average annual rate of 3.8 percent (table 6-1).²¹ In response, the demand for intermediate inputs increased, by 4.1 percent. Input-output tables suggest that the industry's largest intermediate inputs include motor freight and warehousing services provided by second parties, which experienced 7.4 percent average annual growth during 1992-97;²² freight forwarding and related services, which experienced 6.6 percent average annual growth; and automotive repair and related services, which experienced 4 percent average annual growth.

¹⁵ Logistics services involve planning and managing the transport of goods throughout the delivery process. Providers of logistics services often use sophisticated IT networks for tracking and tracing, and provide for the intermediate storage of goods when appropriate. Supply chain management is part of the logistics process and is provided to manufacturing companies that seek third-party assistance in managing the delivery of parts or components into their facilities and/or the transport of finished products to distributors, retail outlets, and final consumers.

¹⁶ Air Cargo Management Group, "International Air Freight and Express Industry Performance Analysis 2003," Nov. 2003, p. 28; and UPS, *Annual Report 2002*.

¹⁷ UPS, *Annual Report 2002*.

¹⁸ FedEx and UPS, 2002 annual reports.

¹⁹ Manufacturers report that transportation and warehousing services are among the most frequently used third-party logistics services, and that such services yielded some of the greatest cost benefits to their companies. Robert Lieb and Brooks Bentz, "The Use of Third Party Logistics Services by Large American Manufacturers, The 2003 Survey," Northeastern University and Accenture Consulting, Oct. 1, 2003.

²⁰ Standard and Poor's, "Transportation: Commercial," *Industry Surveys*, June 13, 2002.

²¹ USDOC, BEA, *Survey of Current Business*, June 2000, p. 50; Nov. 2001, p.31; and Nov. 2002, p. 37.

²² These are the most recent years for which detailed input-output tables are available. See USDOC, BEA, *Survey of Current Business*, Nov. 1997, p. 77; and Jan. 2001, p. 31.

Table 6-1
U.S. trucking and warehousing industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990- 2001
				<i>Percent</i>
Real gross output (<i>billion dollars</i>)	159.4	213.8	240.4	3.8
Real gross domestic product (<i>billion dollars</i>)	68.1	92.1	99.3	3.5
Real intermediate inputs (<i>billion dollars</i>)	91.3	121.7	141.2	4.1
Real net stock of private fixed assets (<i>billion dollars</i>)	82.5	104.2	121.4	3.6
Employees, full-time equivalent (<i>thousands</i>)	1,554	1,550	1,752	1.1
Profits (<i>million dollars</i>)	2,493	4,445	(¹)	(¹)
Labor productivity ² (<i>thousands</i>)	43.8	59.4	56.7	2.4
Unit labor cost ³	0.72	0.65	0.76	0.6
Unit capital cost ⁴	0.33	0.33	0.47	3.3

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

CHAPTER 7

INSURANCE SERVICES

Introduction

The insurance industry underwrites financial risk for life and non-life (property/casualty) products, and provides many specialty products. The latter include reinsurance (the transferring of risk between insurance companies), marine and transportation insurance (for goods in transit, hulls, aviation, and off-shore oil rigs), and brokerage services (the packaging of policies from several underwriters to cover a given risk). In addition to risk transfer, insurance is also an important individual savings device in most countries.¹ Worldwide, the business of insurance is increasingly being combined with other financial services such as banking, securities, mutual funds, and annuities, most commonly in the distribution of financial products, but also as an integrated method of managing savings, investment, and risk.

International trade in insurance takes place on both a cross-border and an affiliate basis. Insurance sales, particularly at the retail level, often require knowledge of, and proximity to, insurance consumers, so affiliate transactions generate the greatest share of international insurance sales. Sales of reinsurance account for the majority of cross-border trade. Cross-border trade figures for insurance services are presented on a net basis; i.e., imports comprise premiums paid to foreign insurers minus claims received, and exports comprise premiums received from foreign policyholders minus claims paid.² Affiliate transactions data reflect payment of premiums only, so the two data sets are not directly comparable.³

¹ Consumers in many countries are increasingly using private life insurance products such as annuities and other pension products to supplement government-sponsored social assistance programs. See *Insurance Pocket Book 2003* (Henley-on-Thames, UK: NTC Publications, 2003), pp. 228-255; and American Council of Life Insurance (ACLI), *Life Insurance Fact Book 1999* (Washington, DC: ACLI, 1999), p. 155.

² For 2002, the Bureau of Economic Analysis (BEA) has revised its method of calculating and presenting cross-border insurance data, incorporating two major changes. Previously, the data reflected estimates of premiums earned minus claims paid or recovered in a given year. In the new system, BEA has changed the estimate of premiums to include a “premium supplement” reflecting the expected investment income earned by insurers on their financial reserves (premium payments that have not yet been used to pay claims). The measurement of claims has also undergone an important change. Instead of using the actual claims payments in a given year, the claims figure is now an estimate of “normal” losses, a measure of the year’s expected claims payments. The estimate is based on an average of actual claims paid over the previous 6 years. The new system better reflects the economic assumptions under which insurance carriers set premium prices, and eliminates the large swings in insurance data caused by catastrophes such as Hurricane Andrew in 1992 or the Sept. 11th, 2001 terrorist attacks. For further information on the new insurance data system, see USDOC, BEA, “Measuring the Services of Property-Casualty Insurance in the NIPAs,” *Survey of Current Business*, Oct. 2003, pp. 10-26.

³ However, within the next year or two, BEA expects to present net data for affiliate transactions as well.

Trade and Investment Trends

Cross-border Trade

In 2002, U.S. cross-border exports of insurance services totaled \$2.8 billion, and imports totaled \$15.3 billion, yielding a trade deficit of \$12.5 billion (figure 7-1). U.S. exports increased by 18.3 percent in 2002, somewhat faster than the 15.1-percent average annual growth rate achieved during 1997-2001. Continued rapid growth was primarily due to overall increases in premium rates, especially for property/casualty insurance, following the September 11th terrorist attacks, and to insurance carriers' efforts to recoup reduced investment returns resulting from a weak stock market during 2001.⁴ The reinsurance segment accounted for 73.4 percent of all cross-border exports of insurance services, and 78.0 percent of imports.⁵ The largest U.S. export market for insurance services was the United Kingdom, which accounted for \$590 million in 2002 (figure 7-2), or 20.8 percent of total U.S. exports of insurance services. Other large U.S. export markets were Canada, with \$302 million (10.6 percent), Bermuda, with \$269 million (9.5 percent), and Japan, with \$265 million (9.3 percent).

U.S. cross-border imports of insurance services increased by 32.2 percent in 2002, little different from the 30.7-percent average annual increase recorded during 1997-2001. Continued import growth largely was due to overall increases in premium rates, as noted above.⁶ Bermuda was by far the largest supplier of U.S. cross-border imports of insurance services in 2002, accounting for \$5.1 billion, or 33.1 percent of all such imports. Bermuda is a major reinsurance center, whose influence in the insurance industry has increased in recent years. Other large sources of U.S. insurance imports were the United Kingdom, accounting for \$3.0 billion (19.6 percent), Germany, with \$2.4 billion (15.4 percent), and Switzerland, with \$1.6 billion (10.4 percent).

Foreign Direct Investment and Affiliate Transactions

U.S. direct investment abroad in insurance services totaled \$72.5 billion in 2002, an unusually large increase of 26.4 percent over the previous year. Agencies, brokerages, and related auxiliary insurance services accounted for the greatest share of the increase, with U.S. direct investment abroad in the segment rising by 277 percent in 2002, to \$8.7 billion.⁷ The increase in foreign direct investment abroad by insurance brokerage firms is partially attributable to a wave of investment in China. Following China's 2001 accession to the World Trade Organization,⁸ the Chinese market was opened to foreign insurance brokerage firms and new rules were issued by the Chinese insurance regulator, which clarified the licensing application process for insurance agents, brokers, and appraisers.⁹ Investment abroad by U.S. life insurers also grew strongly in 2002, rising 25.0 percent to \$21.2 billion. Accounting for almost one-fourth of the total growth in outward investment by life insurance

⁴ BEA, *Survey of Current Business*, Oct. 2003, p. 59. In addition, beginning in 2002, services auxiliary to insurance, such as agency and brokerage, actuarial, and claims processing services, have been included in the cross-border trade data on insurance services. Previously, these services were included in the "other business and professional services" category.

⁵ Only two of the top 10, and eight of the top 40 of the world's largest reinsurance companies are based in the United States, helping to account for the U.S. cross-border trade deficit in insurance services. Standard & Poor's, *Global Reinsurance Highlights 2003*, p. 15.

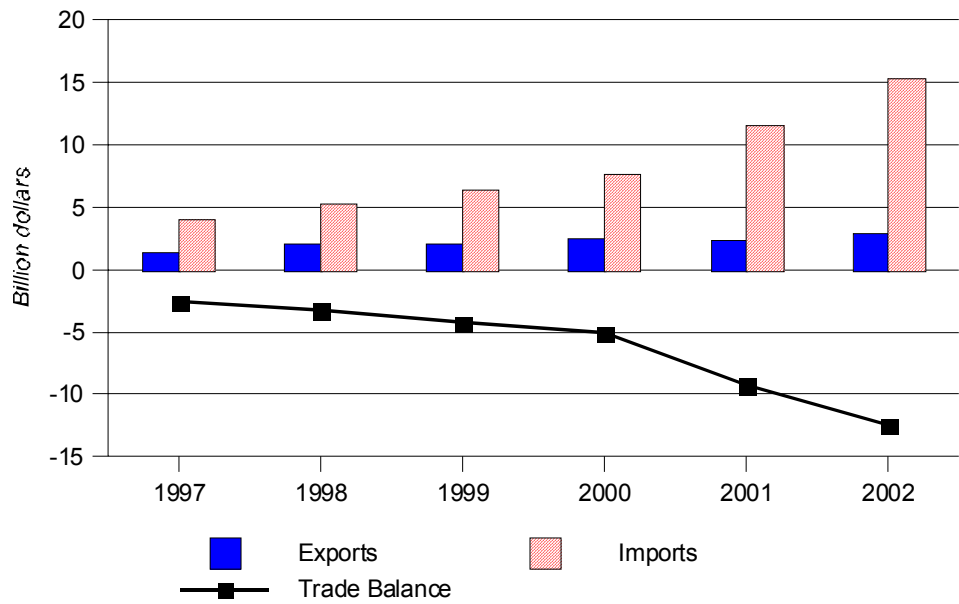
⁶ Also, as in the case for exports, services auxiliary to insurance have been included in the data for the first time.

⁷ USDOC, BEA, *Survey of Current Business*, Sept. 2003, p. 146.

⁸ Industry representative, telephone interview by USITC staff, Jan. 27, 2004.

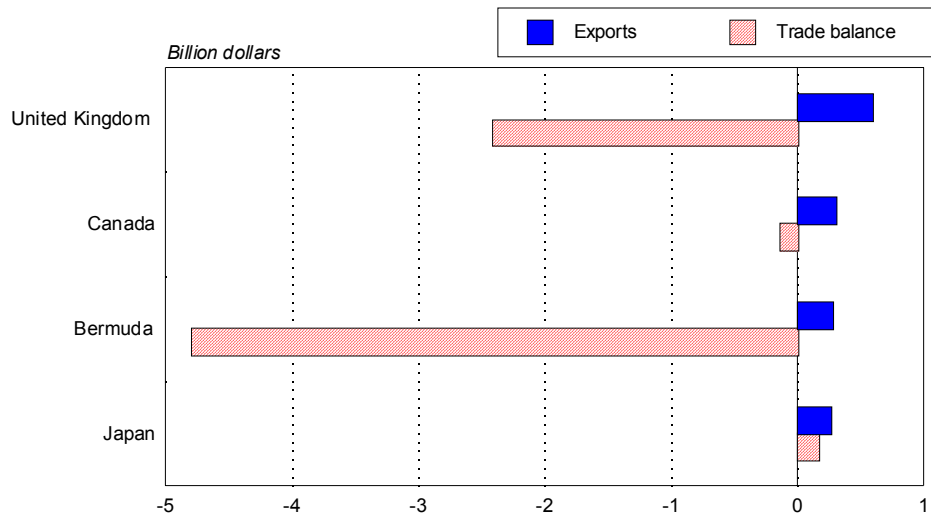
⁹ "Only the Big Hitters In for the Long Haul Need Apply," *World Insurance Report*, June 20, 2003, p. 3.

Figure 7-1
Insurance services: Cross-border trade, 1997-2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-79.

Figure 7-2
Insurance services:¹ U.S. cross-border exports and trade balance, by major trading partners, 2002



¹ Beginning in 2004, for the 2002 data year, services auxiliary to insurance, such as agency and brokerage, actuarial, and claims processing services, have been included in the cross-border trade data on insurance. Previously, these services were included in the "Other business and professional services" category.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 100-101.

carriers was MetLife's acquisition of Aseguradora Hidalgo, Mexico's second-largest insurer, for approximately \$1 billion.¹⁰

Foreign investors showed signs of scaling back their investments in the U.S. insurance market in 2002, with the foreign direct investment position in the U.S. insurance industry declining by 1.4 percent, to \$104.1 billion. Only the agencies, brokerage, and auxiliary services segment increased its inbound investment position, by 3.0 percent, to \$8.4 billion.¹¹

Sales of services by U.S.-owned affiliates of insurance carriers in foreign markets totaled \$61.4 billion in 2001 (figure 7-3). Non-life carriers again accounted for the majority of sales, 58.1 percent (\$35.7 billion), with life carriers accounting for the remainder (\$25.7 billion). Sales by U.S.-owned affiliates were largest in Japan, which accounted for \$15.2 billion, or 24.7 percent of all foreign sales by U.S.-owned affiliates. The United Kingdom followed, with sales by insurance carriers totaling \$9.6 billion (15.6 percent). Latin America and other Western hemisphere markets accounted for sales of \$11.2 billion (18.3 percent). Sales by U.S.-owned affiliates in the agencies and brokerages segment were \$4.0 billion in 2001, up 19.5 percent over 2000. U.S.-owned affiliates in the United Kingdom recorded sales of \$1.9 billion in the segment during 2001, equal to 46.6 percent of the total.¹²

In 2001, U.S. purchases from U.S.-based insurance affiliates of foreign companies totaled \$81.0 billion, a 9.7-percent increase over 2000. Non-life carriers accounted for 72.0 percent of the total, with life carriers accounting for 28.0 percent. Overall, affiliates owned by parent firms based in the Netherlands were the primary suppliers of insurance purchases (\$30.8 billion, or 38.0 percent of the total), followed by Swiss- and Canadian-owned affiliates, representing 12.9 percent and 12.3 percent, respectively.¹³ Swiss-owned affiliates were the largest source of purchases in the agencies and brokerages segment, representing 70.2 percent of the \$4.1 billion total. Total U.S. purchases from foreign-owned agency and brokerage affiliates declined by 4.2 percent in 2001.¹⁴

Industry Analysis

During 1990-2001, real gross output of U.S. insurance carriers declined slightly on an average annual basis, registering \$260.8 billion in 2001 (table 7-1). This figure reflects opposing trends in the components of gross output: growth of 2.1 percent per annum in real gross domestic product, which was offset by an average annual decline of 2.4 percent in intermediate inputs. The increase in the industry's gross domestic product reflected strong stock market returns during the 1990s. Due to data limitations, the underlying cause of the decline in intermediate inputs is not clear.

¹⁰ The acquisition, which was finalized in June 2002, made MetLife the largest life insurer in Mexico, and Mexico's second largest insurer overall. In recent years, MetLife has also acquired businesses in Argentina, Brazil, Chile, and Uruguay. "MetLife to Buy Ahisa for 9.2bn Pesos," *Financial Times*, May 26, 2002, found at <http://www.ft.com/>, retrieved May 28, 2002; and "MetLife Completes Deal for Ahisa," *Financial Times*, June 21, 2002, found at <http://www.ft.com>, retrieved June 21, 2002.

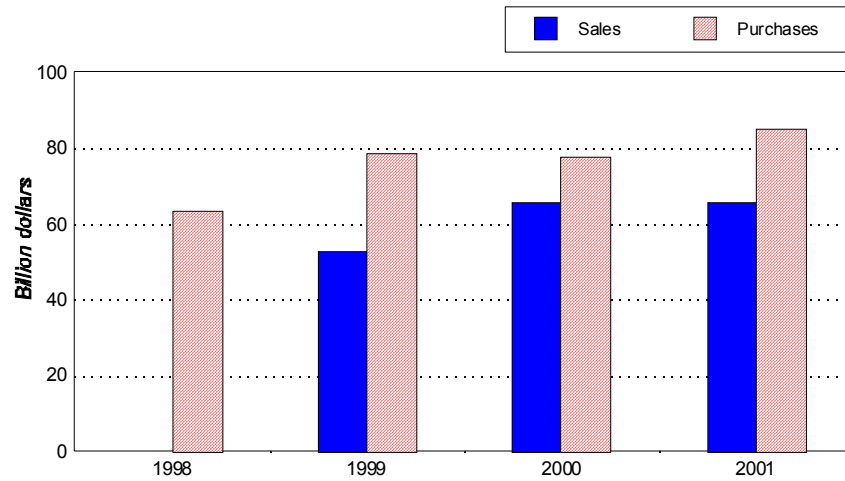
¹¹ USDOC, BEA, *Survey of Current Business*, Sept. 2003, p. 93.

¹² USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 115.

¹³ Data for Switzerland and Canada include agencies, brokerages, and auxiliary insurance services, as a percentage of total insurance services, as the data for Canada do not permit breakouts for the insurance carriers segment.

¹⁴ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 117.

Figure 7-3
Insurance services: Sales by U.S. majority-owned affiliates, and purchases from foreign majority-owned affiliates, 1998¹-2001



¹ Sales data for 1998 are not available.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-118; Oct. 2002, pp. 121-124; and Nov. 2001, p. 94.

The insurance agents, brokers, and auxiliary services segment presented a different picture from that of insurance carriers. Real gross output was also flat during 1990-2001, but for the brokerage segment, real gross domestic product recorded declines of 1.2 percent per annum, which were offset by growth in intermediate inputs of 2.3 percent per annum. Unit labor costs increased by 7.2 percent, reflecting declining labor productivity. Such developments reflected the soft insurance premium rates throughout much of the decade, which form the basis of insurance agents' and brokers' fee-based compensation.¹⁵

¹⁵ Industry representative, telephone interview with USITC staff, Jan. 28, 2004.

Table 7-1
U.S. insurance industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
	<i>Percent</i>			
Carriers:				
Real gross output (<i>billion dollars</i>)	270.9	261.5	260.8	-0.3
Real gross domestic product (<i>billion dollars</i>)	112.2	123.4	141.2	2.1
Real intermediate inputs (<i>billion dollars</i>)	154.6	138.1	118.2	-2.4
Real net stock of private fixed assets (<i>billion dollars</i>)	97.7	145.7	187.7	6.1
Employees, full-time equivalent (<i>thousands</i>)	1,445	1,449	1,488	0.3
Profits (<i>million dollars</i>)	-15,772	28,529	(¹)	(¹)
Labor productivity ² (<i>thousand dollars</i>)	77.6	85.2	94.9	1.8
Unit labor cost ³	0.49	0.62	0.70	3.3
Unit capital cost ⁴	-0.02	0.28	0.40	(¹)
Agents, brokers, and service:				
Real gross output (<i>billion dollars</i>)	87.0	74.0	86.9	0.0
Real gross domestic product (<i>billion dollars</i>)	61.4	48.9	53.5	-1.2
Real intermediate inputs (<i>billion dollars</i>)	25.8	25.1	33.3	2.3
Real net stock of private fixed assets (<i>billion dollars</i>)	9.5	14.3	21.1	7.5
Employees, full-time equivalent (<i>thousands</i>)	671	707	759	1.1
Profits (<i>million dollars</i>)	2,761	4,453	(¹)	(¹)
Labor productivity ² (<i>thousand dollars</i>)	91.5	69.2	70.5	-2.3
Unit labor cost ³	0.39	0.67	0.84	7.2
Unit capital cost ⁴	0.21	0.32	0.39	5.9

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

CHAPTER 8

SOLID AND HAZARDOUS WASTE SERVICES

Introduction

For the purpose of this report, solid and hazardous waste services¹ include the collection, transportation, and transfer of solid waste; recycling operations; composting; solid waste disposal at landfills and incinerators; and the management of medical, nuclear, and hazardous industrial waste, unless otherwise indicated. Throughout the world, both private and government-owned entities supply solid and hazardous waste services. Within the U.S. solid and hazardous waste services market, the private sector accounts for the majority of revenues.² Principal consumers of solid waste management services include municipalities, and industrial and commercial clients. Consumers of hazardous waste management services generally include government agencies and companies that use or produce potentially hazardous materials, such as chemical and petroleum production and processing firms.³ Although the data presented in this chapter do not distinguish between cross-border trade and affiliate transactions, trade in solid and hazardous waste services is likely conducted primarily through overseas affiliates, as cross-border trade is often infeasible in this sector.⁴

Trade Trends

In 2002, U.S. exports of solid waste management services decreased by 12 percent over the previous year to \$503 million (figure 8-1), slower than the average annual

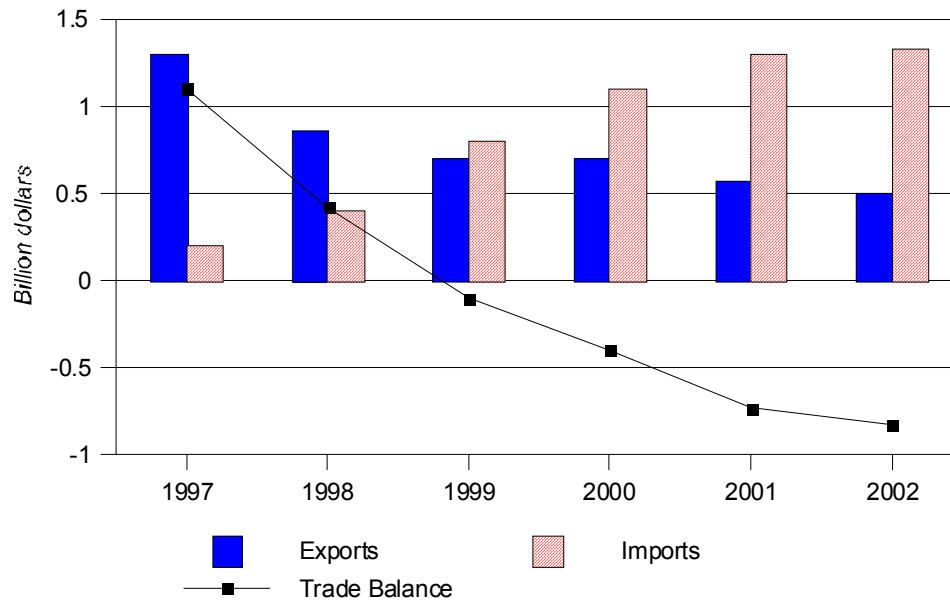
¹ The scope of the solid and hazardous waste services sector, as discussed herein, is that used by Environmental Business International Inc. (EBI) to compile trade and market data. For more information, see EBI, "EBI's Products by Industry Segment," 2004, found at <http://www.ebiusa.com/Segments.html>, retrieved Jan. 15, 2004.

² EBI, *EBI Report 2000: The U.S. Environmental Industry and Global Market*, Sept. 2001, p. 1-3.

³ *Ibid.*, p. 1-7.

⁴ One form of cross-border trade in solid and hazardous waste services occurs when waste generated in one country is transported to a second country for treatment and disposal. However, as it is often prohibitively expensive to transport waste long distances, the majority of trade in solid and hazardous waste services typically occurs when a foreign-based firm provides services through an affiliate based in the consumer's home country.

Figure 8-1
Solid waste services: Exports, imports, and trade balance, 1997-2002



Source: Environmental Business International, various publications.

decrease of 19 percent registered during 1997-2001.⁵ By comparison, U.S. imports of solid waste management services increased by 2 percent to \$1.3 billion in 2002, significantly slower than the average annual growth rate of 60 percent registered during 1997-2001. As a result, the United States posted a \$827-million deficit in the solid waste services segment in 2002, extending a significant change in the U.S. trade balance in this industry, which had shifted from a surplus of \$1.1 billion in 1997 to a deficit of \$728 million in 2001. The trends observed in these data, which reflect both cross-border trade and affiliate transactions, were partially a result of increased shipments of U.S. waste abroad and the substantial presence of foreign-owned firms in the U.S. market.⁶ Also contributing to the deficit, industry sources indicate that U.S. firms reduced or removed operations from foreign markets. Reportedly, slow adoption of environmental regulations, and uneven implementation and enforcement of existing environmental measures in some foreign countries raised liability risks and other financial considerations to unacceptable levels.⁷ Such divestment likely resulted in decreased U.S. sales in foreign markets.

⁵ EBI, *Environmental Business Journal*, vol. XI, No. 7, p. 7; EBI, *Environmental Business Journal*, vol. XII, No. 9/10, p. 3; EBI data found in U.S. Department of Commerce (USDOC), International Trade Administration (ITA), *1999 U.S. Environmental Trade Balance*, found at <http://web.ita.doc.gov/>, retrieved Sept. 25, 2001; EBI, *2000 Environmental Trade Balance*, electronic mail, Nov. 1, 2001; EBI, *Environmental Business Journal*, vol. XV, No. 11/12, p. 2; and EBI, *2002 U.S. Environmental Trade Balance*, electronic mail, Jan. 23, 2004.

⁶ Industry representatives, interviews by USITC staff, Paris, Nov. 3, 2003.

⁷ Industry representatives, interviews by USITC staff, Washington, DC, Sept. 9 and Nov. 12, 2003.

U.S. exports of hazardous waste services decreased by 13 percent in 2002 to \$95 million (figure 8-2), in contrast with the average annual increase of 2 percent posted during 1997-2001. However, this average growth rate masks significant year-to-year percentage changes in U.S. export levels, which fluctuated between \$51 million and \$130 million during the period. U.S. imports of hazardous waste services increased by 10 percent to \$220 million in 2002, following some significant fluctuations and an overall increase from less than \$100 million in 1997, to \$200 million in 2001. The U.S. hazardous waste services deficit increased 37 percent in 2002 to \$125 million. Although the trade balance fluctuated during 1997-2001, deficits were registered in every year except 1997. Industry representatives suggest the deficits may have been a result of the strong dollar and the disconnect between the highly advanced technologies offered by U.S. hazardous waste services firms and the needs of many foreign countries, which often can be met with older and less expensive technologies.⁸

Industry Analysis

The United States is the world's largest market for solid waste management services,⁹ having generated industry revenues of \$42.0 billion and employed 276,000 workers in 2002.¹⁰ Both revenues and employment in the U.S. solid waste services segment increased steadily during 1990-2002, with revenues increasing at an average annual rate of 4 percent and employment increasing at an average annual rate of 3 percent. Steady growth may have resulted, in part, from new regulations that require the use of more sophisticated technologies, thus raising the cost of providing the service, the price charged to customers, and ultimately, the total revenues earned by the industry. Revenues within the solid waste industry may also have increased due to growth in overall waste generation resulting from economic growth and population increases.¹¹ Reportedly, population growth typically accounts for about one percentage point of revenue growth, while price increases account for the remainder.¹²

The United States is likely¹³ the world's largest single-country market for hazardous waste management services,¹⁴ having generated industry revenues of \$4.7 billion and employed 38,300 workers in 2002. Even so, data for 1990-2002 indicate that both revenues and employment in the hazardous waste management segment decreased steadily after 1992, following slight increases at the beginning of the period.

⁸ Industry representative, telephone interview by USITC staff, Jan. 20, 2004.

⁹ Environmental Business International, Inc., *The U.S. Environmental Industry & Global Market*, Sept. 2002, p. 1-82.

¹⁰ EBI, *Jobs in the Environmental Industry 1989-2002*, electronic mail, Jan. 23, 2004.

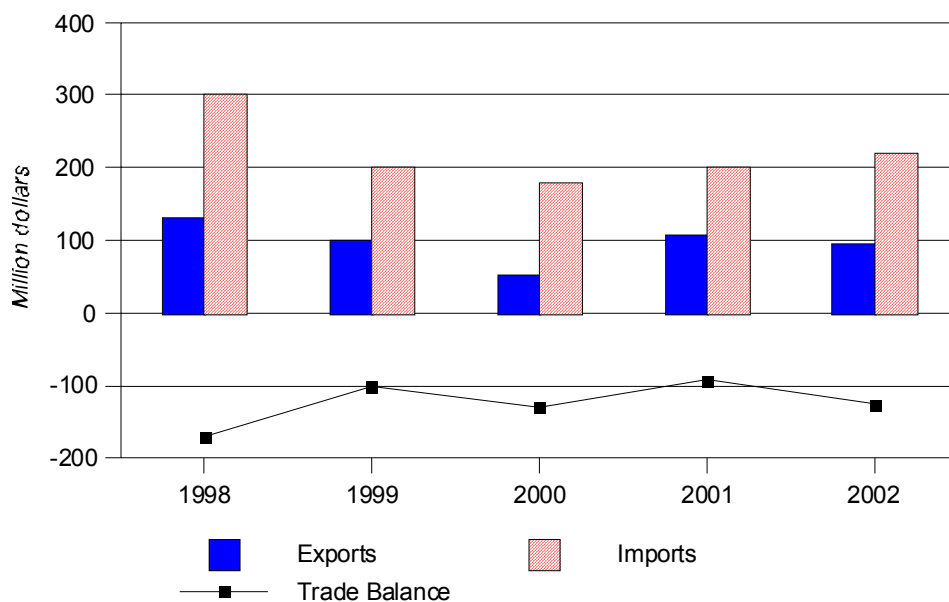
¹¹ Industry representative, telephone interview by USITC staff, Jan. 21, 2004.

¹² Standard & Poor's, *Industry Surveys: Environmental and Waste Management*, Oct. 9, 2003, p. 15.

¹³ The Western European market for hazardous waste services (\$5.9 billion) was larger than the U.S. market for such services (\$5.2 billion) in 2000. Although country-specific data on Western European markets for hazardous waste services are not available, an industry analyst indicates that the United States is likely the largest single-country market for the subject services. Industry representative, telephone interview by USITC staff, Oct. 29, 2003.

¹⁴ Industry representative, telephone interview by USITC staff, Oct. 29, 2003.

Figure 8-2
Hazardous waste services: Exports, imports, and trade balance,¹ 1998-2002



¹ Due to data limitations, 1997 values are not included in this figure.

Source: Environmental Business International, various publications.

Industry sources indicate that the decrease in the size of the U.S. hazardous waste services market may be a result of reductions in the overall generation of such waste.¹⁵ The establishment and enforcement of legislation regarding hazardous waste and the clean-up of contaminated sites – such as the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – reportedly led to rapid growth in the U.S. hazardous waste services industry during the 1980s and early 1990s. By the end of that period, the overall volume of waste to be managed had been reduced, as the enforcement of environmental regulations had encouraged firms to prevent and reduce the production of waste and the clean-up of many contaminated sites had been completed.¹⁶ Consequent overcapacity and price competition may also have contributed to declining revenues in the U.S. hazardous waste management industry.¹⁷

¹⁵ Standard & Poor's, *Industry Surveys: Environmental and Waste Management*, Oct. 9, 2003, p. 26; and industry representative, telephone interview by USITC staff, Jan. 20, 2004.

¹⁶ Industry representative, telephone interview by USITC staff, Jan. 20, 2004.

¹⁷ Standard & Poor's, *Industry Surveys: Environmental and Waste Management*, Oct. 9, 2003, pp. 26-27.

CHAPTER 9

UTILITY SERVICES

Introduction

Utility services comprise activities related to the provision of electric power, natural gas, potable water, and wastewater management services. These include generation, transmission, distribution, and marketing of electric power; transmission and distribution of natural gas; collection, transportation, purification, and distribution of potable water; removal, treatment, and disposal of wastewater; and incidental services such as system operation services, metering, and billing. Utility services can be traded across borders or sold by foreign affiliates to host country consumers. For example, if natural gas is transported from Alberta, Canada, to a customer located in the United States, the owner of the Canadian portion of the pipeline receives payment for a cross-border export. Alternatively, if a Canadian affiliate of a U.S. parent company owns a natural gas pipeline that runs from Alberta to Toronto, transmission services provided by that pipeline constitute sales through a foreign affiliate.

Trade and Investment Trends

Cross-Border Trade

Official data on cross-border transactions in utility services are unavailable because such data are not collected in sufficient detail, although it is clear that most U.S. cross-border trade in energy services takes place with Canada. There does not appear to be any significant cross-border trade in water and wastewater utilities services, for which there are no major international pipelines. In the natural gas segment, imports accounted for 18 percent of total U.S. natural gas consumption in 2002.¹

Approximately 94 percent of U.S. imports of natural gas were delivered via pipeline, with the remainder transported by ship in the form of liquefied natural gas (LNG). In 2002, Canada accounted for nearly all U.S. pipeline imports of natural gas, with less than one percent of such imports originating in Mexico.² In dollar terms, U.S. imports of natural gas by pipeline measured \$11.8 billion in 2002, representing a decrease of nearly 29 percent over 2001.³ The estimated value of the service

¹ U.S. Department of Energy (USDOE), Energy Information Administration (EIA), *Natural Gas Monthly November 2003*, Table 2, p. 4, found at <http://www.doe.eia.gov/>, retrieved Jan. 7, 2004.

² *Ibid.*, Table SR2.

³ Between 2001 and 2002, the unit price of U.S. natural gas imports by pipeline decreased by nearly 42 percent, thus accounting for the significant decline in the dollar value of U.S. imports in 2002. USDOE, EIA, *Natural Gas Monthly, November 2003*, Table 6, p. 14.

component of U.S. imports is approximately \$346 million.⁴ By contrast, U.S. exports of natural gas by pipeline measured only \$1.5 billion, slightly higher than the nearly \$1.3 billion in U.S. exports recorded during the previous year. The service component of U.S. exports is estimated to be about \$43 million. In 2002, approximately 51 percent of U.S. exports of natural gas were transported to Mexico, 37 percent to Canada, and the remaining 12 percent to Japan as LNG.⁵

In the electric utility segment, Canada accounted for the majority of U.S. international trade in electric power in 2002.⁶ Although, as is the case with natural gas, U.S. imports of electric power typically exceed exports, electricity imports accounted for only one percent of total U.S. consumption in 2002.⁷ During that year, U.S. exports of electric power to Canada measured \$303 million, a decrease of 76 percent over 2001.⁸ By contrast, U.S. imports of electric power in 2002 were \$1.2 billion, representing a 57-percent decrease from the \$2.7 billion in imports recorded in 2001.⁹ Assuming that transmission and distribution services represent 3.5 percent of the retail price of electric power to the end user, the service component of U.S. electricity exports and imports in 2002 measured \$11 million and \$42 million, respectively.¹⁰

⁴ The transportation service component is calculated based upon a 28.7 percent differential between U.S. average well-head and city-gate prices as reported by the USDOE, EIA, *Natural Gas Monthly, November 2003*, Table 4, p. 8.

⁵ Approximately 0.02 percent of U.S. exports of natural gas to Mexico consisted of LNG. USDOE, EIA, *Natural Gas Monthly November 2003*, Table 2, p. 4.

⁶ In 2002, U.S. imports of electric power from Canada accounted for 99.2 percent of the total volume of U.S. electricity imports, with the remaining 0.8 percent from Mexico. Similarly, U.S. exports to Canada comprised 89.4 percent of the total volume of U.S. electricity exports, with Mexico accounting for the remaining 10.6 percent. USDOE, EIA, *Electric Power Annual 2002*, Dec. 2003, Table 6.3, p. 34.

⁷ Calculated from data provided in USDOE, EIA, *Electric Power Annual 2002*, Dec. 2003, Table 6.3, p. 34; and USDOE, EIA, *Annual Energy Review 2002*, Table 8.1, p. 221.

⁸ In terms of volume, U.S. exports of electric power to Canada decreased by nearly 20 percent between 2001 and 2002, whereas U.S. exports from Mexico more than tripled. Approximately 13 percent of U.S. electric power exports to Mexico in 2002 were from the State of California. USDOE, EIA, *Electric Power Annual 2002*, Dec. 2003, Table 6.3, p. 34.

⁹ U.S. imports of electric power from Canada decreased by 6.0 percent in volume between 2001 and 2002, whereas U.S. imports from Mexico more than doubled. Nearly half of U.S. imports from Mexico were purchased by the State of California. Electric power trade data from the U.S. Department of Commerce (USDOC), found at <http://dataweb.usitc.gov/>, retrieved Jan. 13, 2004; and USDOE, EIA, *Electric Power Annual 2002*, Dec. 2003, Table 6.3, p. 34.

¹⁰ The estimate for the service component of trade in electric power is based on transmission and distribution operating expenses for major U.S. investor-owned electric utilities as reported in USDOE, EIA, *Electric Power Annual 2002*, Dec. 2003, Table 8.1, p. 48.

Foreign Direct Investment and Affiliate Transactions

The U.S. direct investment position abroad in the utilities sector totaled \$20.9 billion in 2002, a decrease of 9.8 percent from 2001. This contrasted with an average annual growth rate of 12.8 percent during 1997-2001. Foreign investment by U.S. firms in electric power services and, to a lesser extent, in natural gas services grew rapidly beginning in the mid-1990s with the introduction of privatization and market reform. Countries such as Argentina, Australia, and the United Kingdom were some of the largest recipients of such investment. The majority of transactions carried out by U.S. firms in these countries involved the acquisition of generating assets of newly-privatized electricity companies or the purchase of local distribution companies.¹¹ Elsewhere, in the developing economies of Asia and Latin America, U.S. firms directed capital toward the construction of new electric power generating facilities. However, by the late 1990s, the returns on greenfield investments began to decline, causing U.S. firms to withdraw from these markets.¹² U.S. foreign direct investment abroad in utilities services is likely to continue to slow until the financial position of U.S. firms, particularly in the electric power sector, recovers from the aftermath of a stagnant U.S. economy, deregulation, and increased competition.¹³ Sales by foreign affiliates of U.S. utilities firms abroad, which reached \$74.6 million in 2001 (figure 9-1), may also continue to experience less rapid growth. In 2001, sales by U.S. affiliates in foreign markets increased by 21 percent, less than half the nearly 45-percent increase recorded in 2000.

The inbound foreign direct investment position in U.S. electric, gas, and sanitary services increased by nearly 30 percent in 2002, compared to an average annual growth rate of 60 percent during 1997-2001. In the late 1990s, the majority of inbound foreign direct investment in the utilities industry occurred in electricity services.¹⁴ European utilities firms, whose financial position has remained stronger than that of their U.S. counterparts, have been among the most active investors in the U.S. electric power sector.¹⁵ For example, in 1999, U.K.-based Scottish Power

¹¹ USDOE, EIA, "Electricity Reform Abroad and U.S. Investment," Sept. 1997, pp. 26 and 104.

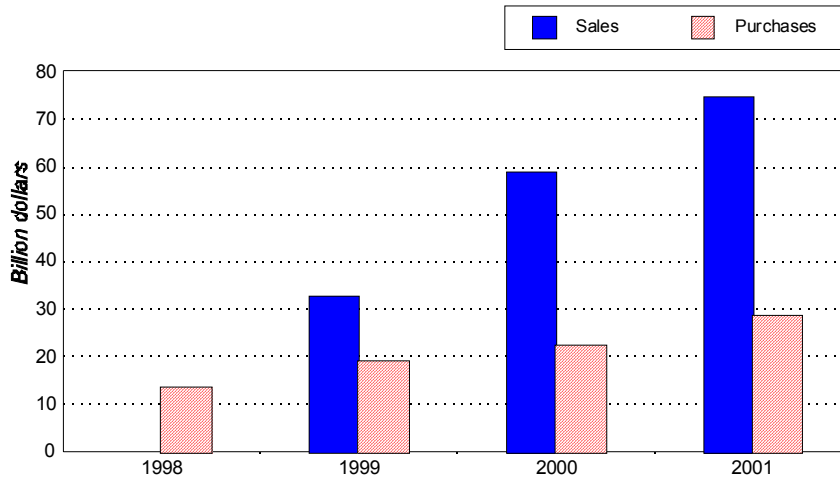
¹² More recently, U.S. firms have begun to divest themselves of their overseas wholesale and retail electric power businesses. For example, Duke Energy plans to withdraw from its wholesale energy units in Australia and Europe by the end of 2004, and TXU completed the sale of its European operating unit, which incurred heavy losses following a sharp decline in U.K. electricity prices in 2002. USDOE, EIA, *International Energy Outlook 2003*, May 1, 2003, found at <http://www.eia.doe.gov/>, retrieved Dec. 18, 2003; Stan Choe, "Duke Reorganizes Wholesale-Energy Unit," *The Charlotte Observer*, Jan. 13, 2004, found at <http://www.energycentral.com/>, retrieved Jan. 26, 2004; and Kathleen Gallagher, "TXU Europe is a Nightmare," *Milwaukee Journal Sentinel*, Mar. 9, 2003, found at <http://www.jsonline.com/>, retrieved Jan. 26, 2004.

¹³ *Standard and Poor's Industry Surveys*, "Electric Utilities," Aug. 7, 2003, pp. 7 and 43-44.

¹⁴ USDOE, EIA, *International Energy Outlook 2003*, Figure 80: Foreign Direct Investment in U.S. Utilities, 1991-2001, found at <http://www.eia.doe.gov/>, retrieved Dec. 18, 2003.

¹⁵ Ken Silverstein, "Opportunity Knocks for Well-Heeled Enterprises," *UtiliPoint*, Jan. 20, 2004.

Figure 9-1
Utilities: Sales by U.S. majority-owned affiliates and purchases from foreign majority-owned affiliates, 1998-2001



¹ Sales data for 1998 are not available.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-118; Oct. 2002, pp. 121-123; and Nov. 2001, p. 94.

acquired U.S. electric power firm, PacifiCorp for \$12.9 billion.¹⁶ In 2000, U.K.-based PowerGen purchased U.S. electricity and retail gas services firm LG&E Energy Corp. for \$5.4 billion.¹⁷ Finally, in 2000 and 2002, U.K.-based National Grid Group acquired three separate U.S. electric power firms: New England Electric Systems, Eastern Utilities Associates, and Niagara Mohawk Power Corp.¹⁸ Together, these transactions were valued at \$6.8 billion.¹⁹ Foreign direct investment transactions in U.S. water utilities also took place, the largest of which was the acquisition of New Jersey-based United Water Resources by Suez Lyonnaise Des Eaux (France) for \$1 billion in July 2000.²⁰ U.S. services purchases from U.S.-based utilities services affiliates of foreign firms totaled \$28.6 million in 2001, an increase of 22 percent from 2000. U.S. purchases from U.S. affiliates of U.K.-based firms were the largest, which likely reflects the high level of foreign direct investment made by U.K. firms in the U.S. energy sector.²¹

¹⁶ BBC News, "Scottish Power Clinches U.S. Utility Deal," Nov. 30, 1999, found at <http://news.bbc.co.uk/>, retrieved Jan. 15, 2004.

¹⁷ LG&E was subsequently acquired by the German industrial group E.ON AG in June 2002. The Blackstone Group, Mergers and Acquisitions Advisory, "LG&E," found at <http://www.blackstone.com/>, retrieved Jan. 15, 2004; and *Standard and Poor's Industry Surveys*, "Electric Utilities," Aug. 7, 2003, p. 6.

¹⁸ *Standard and Poor's Industry Surveys*, "Electric Utilities," Aug. 7, 2003, p. 7.

¹⁹ "Electric Restructuring in Rhode Island," Nov. 29, 2001, found at <http://www.nre.gov/docs/gen/fy02/NN0112f.pdf/>, retrieved Jan. 25, 2004.

²⁰ U.S. Water News Online, "Suez Lyonnaise Des Eaux completes acquisition of United Water Resources," Aug. 2000, found at <http://www.waternews.com/>, retrieved Jan. 16, 2004.

²¹ USDOC, BEA, *Survey of Current Business*, Oct. 2003, p. 118.

Industry Analysis

Real gross output of the utilities industries experienced 1.5-percent average annual growth during 1990-2001 to \$356 billion (table 9-1). The increase in real gross output was mostly enabled by 3.0-percent average annual growth in real intermediate inputs. The primary intermediate inputs in the provision of utilities services are commodities such as coal, natural gas, and water, as well as gas production and distribution services, and maintenance and repair services. Between 1992 and 1997, years for which detailed input-output data are available, gas production and distribution registered the fastest growth, increasing at an average annual rate of 6.1 percent during 1992-97, followed by maintenance and repair services at 5.2 percent,²² natural gas at 4.5 percent, and water at 0.9 percent. By contrast, the use of coal as an intermediate input in utility service provision decreased, on average, at a rate of 2.7 percent per annum. Real gross domestic product grew at an average annual rate of only 0.2 percent during the period 1990-2001 to reach \$194 billion.

Employment in utilities services experienced a decline of 0.9 percent per annum during 1990-2001, although employee compensation increased by 3.4 percent per annum, on average. The decline in employment may have resulted in part from an increase in the automation of certain aspects of utility service provision.²³ For example, in the electric power segment, technological developments enable newly-constructed generating plants to be operated by fewer employees.²⁴ According to industry sources, employment in both the electric power and natural gas industries is expected to continue to decline with the increased deployment of gas-fired generating units, which are less labor-intensive to operate than traditional coal-fired plants, and the introduction of government policies that promote energy conservation and the development of renewable sources of energy.²⁵ By contrast, employment in water and sanitary services utilities is forecast to increase by 45 percent by 2010 as a result of population growth in the United States, and a concomitant rise in the demand for water supply and waste disposal services.²⁶

²² The average annual growth rate for maintenance and repair services pertains to water and sanitary services utilities only. As an intermediate input of the electric utilities sector, maintenance and repair services grew at an average annual rate of 1.9 percent during 1992-97.

²³ NCBuy, "Public Utilities Industry Outlook," found at <http://www.ncbuy.com/>, retrieved Jan. 15, 2004.

²⁴ Industry representative, telephone interview with USITC staff, Jan. 20, 2004.

²⁵ NCBuy, "Public Utilities Industry Outlook," found at <http://www.ncbuy.com/>, retrieved Jan. 15, 2004.

²⁶ Ibid.

Table 9-1
U.S. electric, gas, and sanitary industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
	<i>Percent</i>			
Real gross output (<i>billion dollars</i>)	302.8	336.2	355.6	1.5
Real gross domestic product (<i>billion dollars</i>)	190.0	208.3	194.3	0.2
Real intermediate inputs (<i>billion dollars</i>)	113.6	128.0	157.3	3.0
Real net stock of private fixed assets (<i>billion dollars</i>)	949.6	1,004.7	1,079.4	1.2
Employees, full-time equivalent (<i>thousands</i>)	939	872	848	-0.9
Profits (<i>million dollars</i>)	24,385	40,854	31,604	2.4
Labor productivity ¹ (<i>thousands</i>)	202.3	238.9	229.1	1.1
Unit labor cost ²	0.24	0.26	0.34	3.2
Unit capital cost ³	0.50	0.58	0.61	1.9

¹ Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

² Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

³ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

Finally, profitability in the utilities industries grew on an average annual basis by 2.4 percent during 1990-2001, less than half the 5.8-percent increase recorded in 2001. However, data on profitability of the utilities industries in 2001 does not appear to capture the adverse effects of the California electricity crisis that began in 2000 nor the financial collapse of Enron in December 2001. Illustratively, according to financial data provided by electric utilities, between 2001 and 2002 operating revenues for this sector fell by slightly less than 15 percent, and net income, by nearly 40 percent. In addition, the long-term debt ratio of the electric utilities reached 61 percent in 2002, representing an increase of more than 11 percentage points in 10 years.²⁷

²⁷ Information provided for shareowner-owned electric utilities only. Edison Electric Institute, *2002 Financial Review*, pp. 60 and 116, found at <http://www.eei.org/>, retrieved Jan. 22, 2003.

CHAPTER 10

TELECOMMUNICATION SERVICES

Introduction

Telecommunication services trade encompasses basic¹ and value-added² services, both of which can be provided across national borders and through foreign-based affiliates. Cross-border trade, the primary mode of telecommunication services trade, predominantly involves placing a call that terminates in a foreign market. Cross-border trade data are principally derived from an international system under which telecommunication carriers negotiate accounting rates, or bilateral fees, for carrying and terminating international traffic, which is measured in minutes. Each carrier's portion of the accounting rate, known as the settlement rate, is typically equal to one-half of the negotiated accounting rate. Since international calls are billed in the originating country, carriers whose outbound calling minutes exceed inbound calling minutes make a net settlement payment to their foreign counterparts. Net settlement payments are recorded as imports on the balance of payments, whereas net settlement receipts are recorded as exports. In addition to basic and value-added services, cross-border trade data also includes receipts and payments between U.S. and foreign communications companies for leased channel services, online access services, and telecommunication support services.³

Affiliate transactions, which increased during the 1990s as a growing number of foreign countries began to privatize state-owned monopolies and liberalize foreign ownership restrictions, predominantly reflect the payment of network access fees by wireline and wireless telecommunication services providers, and capacity leasing fees charged to resellers and other telecommunication services providers.

Trade Trends

In 2002, U.S. exports of telecommunication services totaled about \$4.1 billion, while U.S. imports totaled approximately \$4.2 billion, resulting in a trade deficit of

¹ Basic services entail the transmission of voice and data without change in form or content.

² Value-added services include services such as electronic mail, video conferencing, electronic data interchange, electronic funds transfer, enhanced facsimile, and on-line database access.

³ Private leased channel services are those offered over a telephone line that is rented from a facilities-based telecommunication company for exclusive use by the customer; support services include telecommunication equipment repair and maintenance, ground station services, capacity leasing, and satellite launching services; online access services include Internet backbone services, router services, and broadband services.

approximately \$43 million (figure 10-1).⁴ Exports decreased by 8.1 percent during 2002, a significant shift from the 3.5 percent average annual growth rate recorded during 1997-2001. U.S. imports also declined by 12.1 percent during 2002, a slightly slower pace than the 13.1 percent average annual decrease recorded during 1997-2001. Overall, the five-year decline in U.S. imports, and the corresponding decline in the deficit, is due in large part to declining settlement/accounting rates. For example, the average per minute accounting rate declined from \$0.54 in 1998, to \$0.32 in 2002,⁵ following efforts by the U.S. Federal Communications Commission (FCC) to lower international accounting rates.⁶ Intense competition has also resulted in declining per-minute charges on many international routes.⁷

U.S. exports of telecommunication services declined in 2002 owing in part to the growing use of international call completion methods which circumvent the traditional accounting rate system. Two common methods of routing international traffic outside the accounting rate system include International Simple Resale (ISR) and Internet protocol telephony, also know as Voice-over-Internet-Protocol (VoIP). ISR involves routing international traffic over leased lines that are attached to the public network at one or both ends.⁸ ISR minutes have increased rapidly since 1997, the first year for which data are available. For example, U.S. billed ISR minutes have grown from 1.1 billion minutes in 1997 to 14.2 billion minutes in 2001, representing an average annual growth rate of 89.1 percent.⁹ During this same period, corresponding ISR revenues grew from \$293.6 million to \$4.8 billion.¹⁰ Efforts by many U.S. carriers to migrate international traffic to wholly-owned networks on many international routes, as opposed to half-circuit networks co-owned with foreign carriers, have also reduced the number of minutes subject to the accounting rate system.

⁴ USDOC, BEA, *Survey of Current Business*, Oct. 2002, pp. 78 and 79. The U.S. telecommunications trade account has historically recorded a deficit because U.S. households and businesses place more international calls than they receive, necessitating large net settlement payments by U.S. carriers to foreign carriers.

⁵ Commission estimate. Data based on *IMTS Accounting Rates of the United States, 1985-2003*, Dec. 1, 2003, found at <http://www.fcc.gov/ib/pd/pf/account.html>, retrieved Jan. 20, 2004.

⁶ Federal Communications Commission (FCC), *Benchmark Order*, 12 FCC Rcd 19,806 (1997). The Order established a five-year time frame during which settlement rates would be reduced to \$0.15 per minute for upper income countries, \$0.19 per minute for middle income countries, and \$0.23 per minute for lower income countries. Although the initial accounting rate goals of the FCC were not met, the average accounting rate for U.S. calls declined from approximately \$0.54 per minute to \$0.32 per minute during the 1998-2002 period.

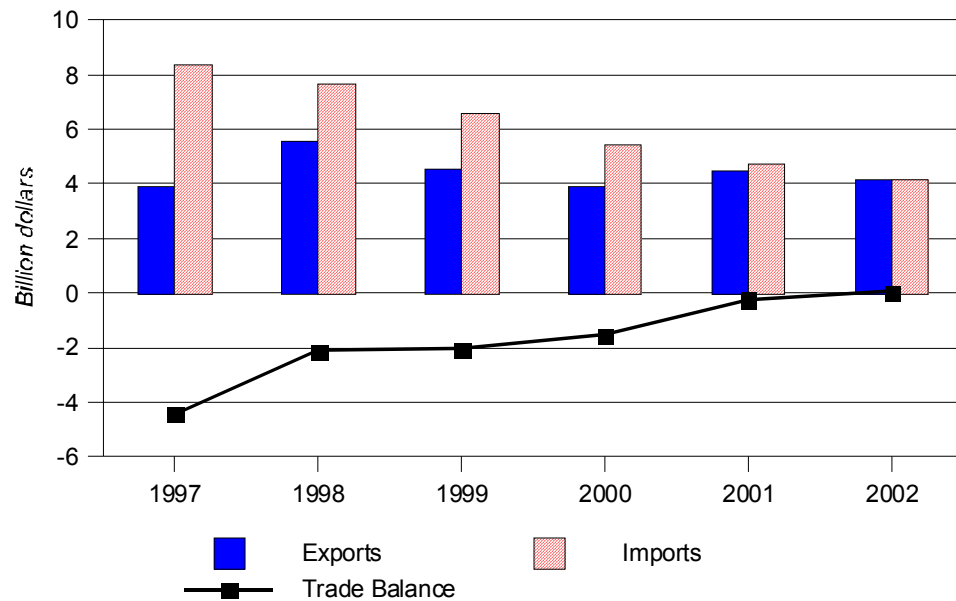
⁷ Primetrica, Inc., *TeleGeography 2004*, Nov. 2003, p. 11.

⁸ FCC, *2001 International Telecommunications Data*, Jan. 2003, p. 6, found at <http://www.fcc.gov/wcb/iatd/intl.html>, retrieved Jan. 20, 2004.

⁹ According to the FCC, U.S. carriers are allowed to send up to 46 percent of international telecommunication traffic outside the traditional settlement system.

¹⁰ FCC, *1997 Section 43.61 International Telecommunication Data*, Dec. 1998, found at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/, retrieved Feb. 2, 2004, and FCC, *2001 International Telecommunications Data*, Jan. 2003, found at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/, retrieved Feb. 2, 2004.

Figure 10-1
Telecommunication services: Cross-border trade, 1997-2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 78-79.

VoIP transmission methods use packet switching technology to transmit international calls over the Internet. On a global basis, VoIP traffic grew 80 percent during 2002, accounting for nearly 11 percent of international traffic.¹¹ Although VoIP is primarily used to avoid high settlement rates in developing countries, particularly Latin America, it is gaining broader industry acceptance. For example, in 2003, Canada's TeleGlobe announced intentions to acquire ITXC, the largest wholesale carrier of VoIP traffic.¹²

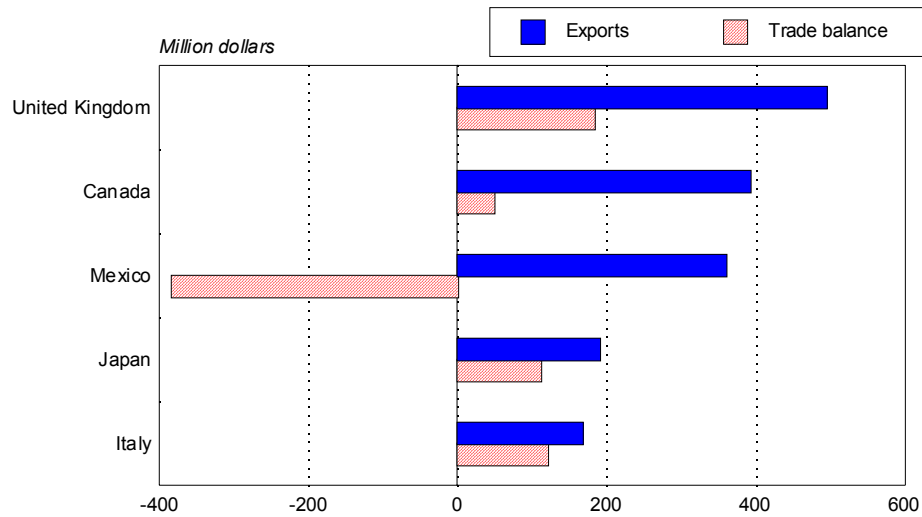
In 2002, the United Kingdom, Canada, Mexico, Japan, and Italy were the leading export markets for U.S. telecommunication services (figure 10-2). The United Kingdom replaced Canada as the largest U.S. export market in 2002, as exports to Canada declined by 25 percent to \$391 million, while exports to the United Kingdom increased by 23 percent to \$495 million. The large increase in exports to the United Kingdom is in part attributable to increased receipts for telecommunications support services, network access fees, and Internet backbone/broadband services. Mexico, Japan, and Italy accounted for exports of \$359 million, \$190 million, and \$167 million, respectively. Mexico remained the top source of U.S. telecommunication services imports, totaling \$741 billion in 2002, a decrease of 8 percent from \$803 billion in 2001.¹³

¹¹ Primetrica, Inc., *TeleGeography 2004*, Nov. 2003, p. 12.

¹² Ibid.

¹³ USDOC, BEA, *Survey of Current Business*, Oct. 2002, pp. 98-101.

Figure 10-2
Telecommunication services: U.S. cross-border exports and trade balance,
by major trading partners, 2002



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 100-101.

Industry Analysis

Real gross output in the communications sector grew from \$240.5 billion in 1990 to \$599.9 billion in 2001, representing an average annual growth rate of 8.7 percent (table 10-1). Telecommunication service firms principally met increasing demand by using more intermediate inputs, which increased by 11.4 percent per annum on an inflation adjusted basis. The primary intermediate inputs for communications services include communications equipment; legal, engineering, accounting, and other professional services; maintenance, repair, and construction; and communication services provided by second parties, which may represent fees paid for leased lines, interconnection, or access to local, long-distance, or Internet networks. Purchases of communications equipment grew by an average annual rate of 15.7 percent between 1992 and 1997 (the most recent years for which data in sufficient detail are available); followed by legal, engineering, accounting, and related services at 13.9 percent; and other business and professional services at 13.8 percent. Maintenance, repair, and construction services grew at an average annual rate of 9.0 percent during the period.

During 1997-2001, the U.S. telecommunications industry experienced a boom-bust cycle. Forecasts of sizable Internet traffic growth during this period motivated many companies to borrow heavily, investing the proceeds in broadband networks and new service development. Actual network traffic, however, fell far short of predictions, leaving many companies with excess capacity and considerable debt. Subsequent intense competition within the industry led to dramatic price decreases, leaving many companies unable to service debt payments or meet operating expenses. As a result,

Table 10-1
U.S. communications industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990-2001
	<i>Percent</i>			
Real gross output (<i>billion dollars</i>)	240.5	348.7	599.9	8.7
Real gross domestic product (<i>billion dollars</i>)	155.2	214.7	321.9	6.9
Real intermediate inputs (<i>billion dollars</i>)	85.4	134.1	279.1	11.4
Real net stock of private fixed assets (<i>billion dollars</i>)	470.4	587.1	878.3	5.8
Employees, full-time equivalent (<i>thousands</i>)	1,203	1,229	1,533	2.2
Profits (<i>million dollars</i>)	19,316	35,012	-6,046	(¹)
Labor productivity ² (<i>thousands</i>)	129	174.7	210	4.5
Unit labor cost ³	0.37	0.35	0.35	-0.5
Unit capital cost ⁴	0.50	0.56	0.48	-0.5

¹ Not available.

² Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

³ Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

⁴ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

many companies were forced into bankruptcy, while surviving companies went through a period of severe cost-cutting and balance sheet write-offs.¹⁴

This cycle is reflected in data related to the U.S. telecommunication services industry's assets, employment, and profits. During 1997-2001, the net stock of fixed assets grew at an average annual rate of 9.0 percent, significantly faster than the 5.8 percent growth rate experienced during 1990-2001. Similarly, employment in the communications sector surged to an annual growth rate of 4.3 during 1997-2001, considerably higher than 2.2 percent average annual growth recorded over the entire 1990-2001 period. Employee compensation grew by 6.8 percent annually during 1990-2001, but posted 8.4 percent growth during 1997-2001. After 2001, employment in the communications sector decreased significantly as wide-spread bankruptcy and corporate restructuring led to large-scale lay-offs.

¹⁴ For further discussion see: "Too many debts; too few calls," *The Economist*, July 18, 2002, found at <http://www.economist.com>, retrieved July 24, 2002; "Beyond the Bubble," *The Economist*, Oct. 9, 2003, found at <http://www.economist.com>, retrieved Oct. 10, 2003; Steven Pearlstein, "Fiber-Optic Overdose Racks Up Casualties," *Washington Post*, May 2, 2002, found at <http://www.washingtonpost.com>, retrieved May 2, 2002; and Dennis Berman, "Innovation Outpaced the Marketplace," *The Wall Street Journal*, Sept. 26, 2002, p. B1.

Profitability in the communications sector grew at a robust average annual rate of 10.4 percent during 1990-1996. From 1997 onwards, however, industry profitability began to decline. Profits declined by 27.0 percent in 1997, 11.3 percent in 1998, and 73.5 percent in 1999. In 2000 and 2001, the industry as a whole experienced losses totaling \$5.6 billion and \$6.0 billion, respectively.¹⁵

¹⁵ USDOC, BEA, *Survey of Current Business*, various issues from 1998 through 2002.

CHAPTER 11

WHOLESALE SERVICES

Introduction

Wholesalers serve as intermediaries, purchasing merchandise from manufacturers that is subsequently resold to retailers.¹ With respect to trade, the majority of wholesaling transactions take place through foreign-based affiliates. Consequently, data collection agencies focus solely on such transactions. These data capture sales of services both incidental and non-incidental to wholesaling. Non-incidental services provided by wholesalers could include the provision of credit management services; extension of credit; assembly, installation, and delivery of products; maintenance and repair services; and, with respect to computer wholesalers, systems integration services.² Affiliate transactions data do not reflect sales of goods.

Trade and Investment Trends

In 2001, sales of wholesaling services by foreign-based affiliates of U.S. parent firms totaled \$21.3 billion (figure 11-1), accounting for 4.9 percent of total services sales by U.S.-owned foreign affiliates.³ Overall sales of such services decreased by 15.9 percent in 2001.⁴ However, sales of professional and commercial equipment and supplies, which accounted for 90 percent of wholesaling services in 2001, increased by 7 percent, to \$19.2 billion. The decline in total sales of wholesaling services is likely attributable to a decline in wholesale sales of motor vehicles, and motor vehicle parts and supplies. However, data for these sales were suppressed in 2001, precluding further analysis.⁵ Despite data limitations, such a decline would be consistent with the 6.2-percent decline in U.S. automotive vehicle, engine, and parts exports experienced in 2001.⁶

In 2001, the top markets for U.S.-owned wholesaling affiliates were Germany, the United Kingdom, France, and Japan. Germany, the United Kingdom, and France

¹ Frequently established by parent manufacturing concerns, wholesaling affiliates often act as representatives of the parent firm in foreign markets. On behalf of the parent, wholesaling affiliates also may license patents and trademarks to foreign firms in exchange for royalties and license fees.

² Incidental services are those performed in association with the sale of goods.

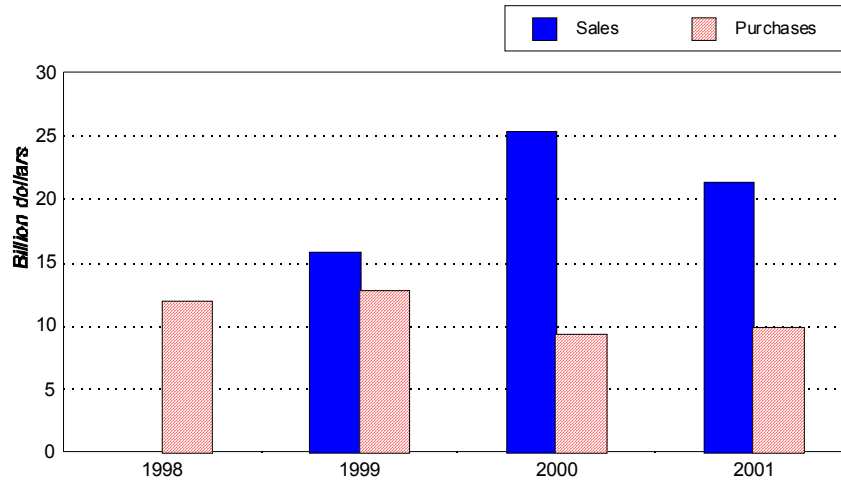
³ U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Oct. 2003, pp. 115-116.

⁴ Detailed analysis of the sources of this decline is not possible due to data limitations.

⁵ Ibid.

⁶ USDOC, Census Bureau, Foreign Trade Statistics, "U.S. International Trade in Goods and Services -Annual Revision for 2002," found at <http://www.census.gov/>, retrieved Jan. 23, 2004.

Figure 11-1
Wholesale services: Sales by U.S. majority-owned affiliates and purchases from foreign majority-owned affiliates, 1998-2001



¹ Sales data for 1998 are not available.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2003, pp. 115-118; Oct. 2002, pp. 121-124; and Nov. 2001, p. 94.

accounted for 15 percent, 13 percent, and 10 percent of total U.S. sales of wholesaling services, respectively. Overall sales of wholesaling services by Europe-based affiliates increased by 12.9 percent during 2001. Japan-based wholesaling affiliates accounted for sales of \$1.1 billion, an increase of 11.4 percent. The overall decline in sales of wholesaling services is due in part to decreased demand in Latin America, where such sales declined by 41.4 percent in 2001.⁷

Purchases of wholesaling services from U.S.-based affiliates of foreign parent firms totaled \$9.9 billion in 2001, accounting for 2.7 percent of all purchases of services from U.S.-based affiliates.⁸ Purchases of wholesaling services from foreign-owned affiliates increased by 6.1 percent during 2001.⁹ This increase is largely attributable to an increase in purchases of professional and commercial equipment and supplies. Affiliates of Japanese parent firms accounted for \$5.6 billion, or 57 percent, of U.S. purchases of wholesaling services, nearly one-third of which represented sales by professional and commercial equipment and supplies wholesalers. U.S.-based affiliates with parents in the United Kingdom, Switzerland, and Canada also accounted for significant portions of U.S. wholesaling purchases in 2001, with the United Kingdom accounting for purchases valued at \$916 million, followed by Switzerland with \$621 million, and Canada with \$551 million.¹⁰

⁷ USDOC, BEA, *Survey of Current Business*, Oct. 2003, pp. 115-116.

⁸ *Ibid.*, Oct. 2003, pp. 117-118.

⁹ *Ibid.*

¹⁰ *Ibid.*

The U.S. direct investment position abroad in the wholesaling sector totaled \$114.9 billion in 2002, an increase of 12.4 percent from 2001. Foreign parents of wholesaling firms recorded cumulative investments of \$188.8 billion in the United States in 2002, an increase of 6.4 percent. In both cases, the increases in investment reflect merger and acquisition activity in this sector, as well as the establishment of affiliates abroad to service customers with international business.¹¹

Industry Analysis

During 1990 to 2001, the U.S. wholesale industry experienced 4.7-percent average annual growth in real gross output, which totaled \$998 billion by the end of the period (table 11-1).¹² To meet increasing demand, wholesalers principally used more primary inputs. Real gross domestic product, a measure of the value added by primary inputs (labor and capital), grew at an average annual rate of 6.0 percent to \$748.7 billion during 1990-2001.¹³ Capital assets, in particular, grew rapidly, by 5.3 percent, annually, on average.¹⁴ Asset growth far outpaced employment growth of 0.9 percent per annum, on average, thereby improving the capital-to-employee ratio and increasing labor productivity by 5.1 percent per annum.¹⁵ This is consistent with declining unit labor costs and increasing capital costs, which demonstrate that capital inputs are becoming a larger part of the U.S. wholesaling industry's overall cost structure. The strong growth in assets reflects increased efforts to automate many warehouse functions; i.e., through use of automated conveyor and materials handling software.¹⁶

¹¹ USDOC and The McGraw-Hill Companies, Inc., *U.S. Industry and Trade Outlook*, 2001, Wholesale Distribution, found at <http://www.ntis.gov/>, retrieved Jan. 21, 2004.

¹² USDOC, BEA, *Survey of Current Business*, June 2000, p. 48 and Nov. 2002, p. 32.

¹³ USDOC, BEA, *Survey of Current Business*, June 2000, p. 46; Nov. 2001, p. 29; and Nov. 2002, p. 35.

¹⁴ USDOC, BEA, *Survey of Current Business*, Sept. 2001, p. 33 and Sept. 2002, p. 31.

¹⁵ USDOC, BEA, *Survey of Current Business*, July 1994, p. 89; Jan./Feb. 1996, p. 75; Apr. 1997, p. D-32; Aug. 1998, p. 80; Apr. 2000, p. 83; June 2000, p. 46; Oct. 2001, p. D-35; Nov. 2001, p. 29; Nov. 2002, p. 35; and Oct. 2003, p. D-36.

¹⁶ "Productivity in the United States," McKinsey Global Institute, Oct. 2001, found at <http://www.mckinsey.com/>, retrieved Jan. 21, 2004; USDOC and The McGraw-Hill Companies, Inc., *U.S. Industry and Trade Outlook*, 2001, Wholesale Distribution, found at <http://www.ntis.gov/>, retrieved Jan. 21, 2004; and Adam J. Fein and Sandy D. Jap, "Manage Consolidation in the Distribution Channel," *Sloan Management Review*, Fall 1999, Vol. 41, No. 1, p. 62.

Table 11-1
U.S. wholesale industry, 1990, 1996, and 2001

	1990	1996	2001	Average annual growth, 1990- 2001
				<i>Percent</i>
Real gross output (<i>billion dollars</i>)	601.3	789.8	998.1	4.7
Real gross domestic product (<i>billion dollars</i>)	395.1	529.6	748.7	6.0
Real intermediate inputs (<i>billion dollars</i>)	206.5	260.2	253.7	1.9
Real net stock of private fixed assets (<i>billion dollars</i>)	306.7	405.3	539.5	5.3
Employees, full-time equivalent (<i>thousands</i>)	5,966	6,280	6,553	0.9
Profits (<i>million dollars</i>)	19,654	41,588	41,164	7.0
Labor productivity ¹ (<i>thousand dollars</i>)	66.2	84.3	114.3	5.1
Unit labor cost ²	0.56	0.55	0.51	-0.9
Unit capital cost ³	0.18	0.23	0.22	1.8

¹ Labor productivity is calculated by dividing real gross domestic product by full-time equivalent employees.

² Unit labor cost is calculated by dividing compensation of employees by real gross domestic product.

³ Unit capital cost is calculated by dividing property-type income by real gross domestic product.

Source: Compiled by the Commission from information obtained from various sources produced by the U.S. Department of Commerce, Bureau of Economic Analysis.

CHAPTER 12

GLOBAL TRENDS IN THE INFORMATION TECHNOLOGY OUTSOURCING SERVICES MARKET

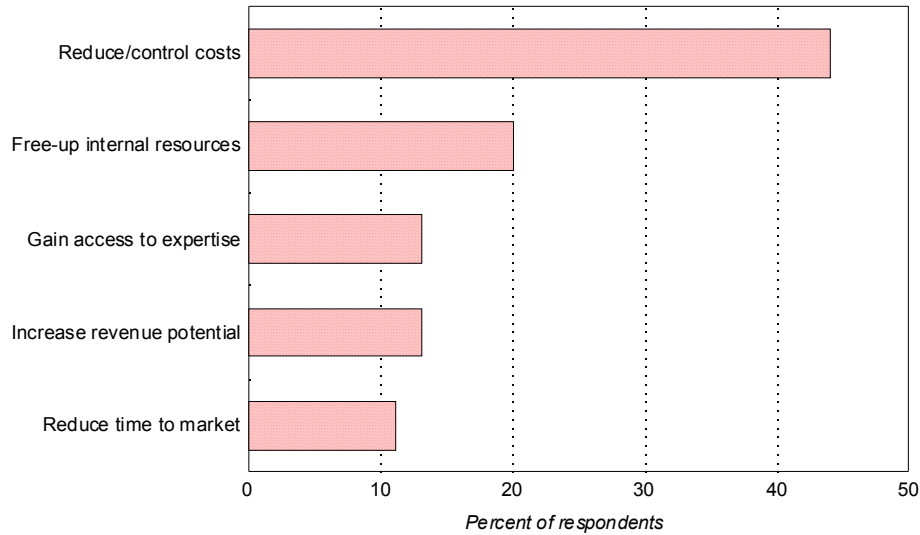
This chapter focuses on recent global trends in the information technologies (IT) outsourcing services market. The term “outsourcing” here refers to the practice whereby the provider of a service obtains some or all of the input for that service from a different provider, typically another firm. Virtually any part of the process of producing or providing a good or service can be outsourced.¹ For example, in the case of IT services, outsourcing could involve the procuring of certain computer programming or customer support services from an outside provider of such services. While recent press reports suggest that outsourcing is a relatively new practice and largely involves services obtained from abroad, outsourcing is a long-established practice. Reliable, comprehensive data on trade in outsourced IT services is not available, although most transactions are believed to be between domestic firms.² Cross-border outsourcing is also a long-established practice, but is believed to represent only a small share of overall IT outsourcing. In addition, it is likely that cross-border outsourcing of IT services by U.S. firms is offset in large part, if not in its entirety, by foreign company outsourcing in the form of imports of IT services from the United States. However, sources indicate that there are likely differences in the mix of IT services imported and exported.

Firms may outsource for a number of reasons, including cost efficiency or lack of in-house skills (figure 12-1). Outsourcing also increases production. For instance, by establishing a coordinated network of outsourced employees located throughout the world, a firm gains the potential to provide services on an uninterrupted basis, 24 hours per day. Outsourcing also provides flexibility, by allowing firms to better accommodate unpredictable business cycles. Disadvantages to outsourcing include the loss of control that may occur when the resources necessary to complete a project are distributed to outside parties, such as when confidential data or valuable

¹ Outsourcing is common among a wide range of industries including health care, manufacturing, financial services, insurance, as well as information technology (IT).

² U.S. firms outsource to domestic firms, to foreign firms employing foreign workers, to U.S. firms located offshore that employ foreign workers, or by having foreign workers come to the United States and work on a contract basis, or through a combination of any of the above.

Figure 12-1
Outsourcing abroad: Leading reported advantages



Source: *Computerworld*, May 2003.

intellectual property are disclosed. Further, managing the outsourced activity may be cumbersome and time consuming, particularly if the provider is remotely located or there are cultural and linguistic differences.³

As the U.S. economy expanded rapidly during the mid to late 1990s, many U.S. firms reportedly faced a shortage of IT workers.⁴ Some of these firms looked abroad to countries with significant English-speaking populations, such as India and the Philippines. These and other export-oriented IT services industries developed rapidly

³ There is a robust body of literature on the motivations and dimensions underlying offshore outsourcing of IT and other services. See, for example, Catherine L. Mann, “Globalization of IT Services and White-Collar Jobs: The Next Wave of Productivity Growth,” *International Economic Policy Briefs*, Institute for International Economics (IIE); Jacob K. Kirkegard, “Outsourcing: Stains on the White Collar,” IIE; Daniel T. Griswold, “Why We Have Nothing to Fear from Foreign Outsourcing,” *Free Trade Bulletin* no. 10, Mar. 30, 2004, Cato Institute’s Center for Trade Policy Studies; and Brink Lindsey, “Job Losses and Trade: A Reality Check,” *Trade Briefing Paper* no. 19, Mar. 17, 2004, Cato Institute’s Center for Trade Policy Studies.

⁴ Prior to the downturn of the global IT industry, the IT press frequently reported that it was virtually impossible for U.S. firms to meet their needs for software developers and other IT personnel of various skill-levels. See, for example, Drew Robb, “Offshore Outsourcing Nears Critical Mass-The IT Talent Shortage in the United States is Driving More Companies to use Overseas Developers,” *Information Week*, June 12, 2000, found at <http://www.informationweek.com/>, retrieved Nov. 13, 2000. IT workers are defined by Mann to include computer software engineers (for applications and operating systems), computer support specialists, network and computer system administrators, network systems and data communications architects, database administrators, and computer and information systems managers. Mann, p. 8.

at this time. For example, U.S. purchases of computer and data processing services⁵ from India and the Philippines grew from \$1 million and \$7 million in 1992, to \$122 million and \$34 million in 2001, respectively.⁶ The number of foreign workers brought into the United States also increased substantially during this time, and measures were taken to expedite this process. In response to the strong demand (mostly from the U.S. high-technology industry) for specialty workers, Congress passed legislation in the fall of 2000 that increased the cap on temporary work visas.⁷

However, by mid-2000, U.S. demand for IT services, both foreign and domestically supplied, began to decline. In the United States alone, the ensuing industry slump saw the loss of more than one million technology-related jobs. The decline has since subsided and for the first time in several years, more technology-related workers are being hired than are being fired.⁸ Even so, the excess supply of IT workers,⁹ both in United States and abroad,¹⁰ remains substantial and has reportedly created a challenging employment environment for some segments of the U.S. IT industry. The prospect of the loss of U.S. jobs, particularly higher-skill IT positions,¹¹ has led to the introduction of legislation in Congress and in at least nine states to limit the use of IT and other services supplied by non-U.S. citizens, whether the work is performed in the United States or overseas. Proposed legislation at the national level includes bills that would require U.S.-based companies seeking to use H-1B temporary work visas to recruit foreign professionals to first prove that equally qualified U.S. workers are not available. Further, Congress allowed a temporary increase in the annual number of work visas issued to foreign professionals to lapse,

⁵ Although computer and data processing services likely contain some outsourcing services, the category does not solely measure U.S. imports of outsourced services. Rather, the values given are an indicator of the overall growth experienced within the IT sectors of the countries.

⁶ U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Nov. 1996, p. 106; and Oct. 2002, p. 119.

⁷ USDOC, U.S. Census Bureau, *U.S. Census Bureau Measurement of Net International Migration to the United States: 1990 to 2000*, Dec. 2001, found at <http://www.census.gov/population/documentation/twps0051/twps0051.pdf>, retrieved Oct. 9, 2003.

⁸ Scott Thurm, "Tech Jobs Start to Come Back In U.S. After Three-Year Slump," *The Wall Street Journal*, Apr. 29, 2004, Page A1.

⁹ Supply and demand of IT services often-times lag one another. During the rapidly expanding IT markets of the late-1990s, businesses, educational facilities and potential workers prepared for IT positions in anticipation of robust future demand. When demand unexpectedly subsided, the supply of workers exceeded demand.

¹⁰ The number of Indian IT workers, for instance, reportedly increases by about 75,000 per year. Lisa DiCarlo, "Best Countries for Outsourcing," *Forbes*, Aug. 27, 2003, found at <http://www.forbes.com>, retrieved Aug. 27, 2003.

¹¹ The rise in the number of higher-skilled IT workers offshore results from the natural progression of any maturing professional services industry and occurred independently of the downturn in the IT industry. Startup IT outsourcing firms often focus on low-skill, routine activities that compete primarily on the basis of cost. As expertise increases due to professional and academic experience, firms tend to move towards higher value-added products that compete to a greater extent on specialized talent. Even so, while IT expertise continues to increase in offshore outsourcing markets such as India, the larger part of the resources available remain lower-skill, as compared to the overall U.S. IT market.

and new measures are reportedly under consideration to shorten the length of time such workers can remain in the United States.¹²

Offshore Providers of Outsourcing Services

U.S. firms indicate that they consider a variety of criteria before selecting an offshore IT outsourcing provider. While labor cost is often a priority, they also consider language compatibility, technical expertise, reliability of infrastructure, political stability, quality assurance, and tax policy. U.S. firms tend to look outside the United States when domestic workers are unwilling to accept employment, when workers of comparable skill levels are available at significantly lower cost,¹³ or when skills are unavailable domestically. Among countries that primarily compete on cost, India is currently the largest supplier of IT services to the United States.¹⁴ Countries including China, Malaysia, Mexico, the Philippines,¹⁵ Taiwan, and Vietnam offer lower costs, but are reportedly several years behind India in terms of technology and marketing capabilities.¹⁶

India

India has a large pool of English-speaking IT workers, estimated to number 650,000.¹⁷ Exports to the United States comprise a large segment of business for many of the largest Indian IT companies. Consequently, these firms are sensitive to fluctuations in the U.S. market, such as the slowdown of the U.S. IT industry, which

¹² Michael Schroeder and Timothy Aepfel, "Skilled Workers Mount Opposition to Free Trade, Swaying Politicians," *The Wall Street Journal*, Oct. 10, 2003, p. A1.

¹³ In cases where the productivity of lower-cost IT employees may not be on par with that of U.S. employees, due to factors such as remote locations and infrastructure difficulties, U.S. firms still find value in outsourcing to India and other lower-cost markets because the savings, on balance, outweigh the shortcomings.

¹⁴ In 2001, India accounted for 12 percent of all U.S. imports of computer and data processing services. Only Canada exported more of these services to the United States. USDOC, BEA, *Survey of Current Business*, Nov. 1996, p. 106; and Oct. 2002, p. 119.

¹⁵ The Philippine IT industry aspires to offer U.S. firms an alternative to Indian outsourcing, yet does not plan to compete directly with India in high-tech areas such as software engineering. Rather, the industry's reported strategy is to predominate in the field of business process outsourcing, such as medical transcription, accounting, tax preparation, and customer service call centers. Hiawatha Bray, "Philippine Leader Aims to Lure More Outsourcing," *Outsource Philippines*, news & events, May 22, 2003, found at <http://www.outsourcephilippines.org/>, retrieved June 11, 2003.

¹⁶ For example, Vietnamese outsourcing services are reportedly 50-percent cheaper than Indian services. "Vietnam Gaining Popularity as Software Outsourcer," *Asia Computer Weekly*, June 10, 2002, found at <http://www.asiacomputerweekly.com>, retrieved July 14, 2003.

¹⁷ Martha Lagace, "The Outsourcing Revolution," Harvard Business School Working Knowledge, Feb. 2, 2004, found at <http://hbswk.hbs.edu>, retrieved Feb. 4, 2004.

has reportedly contributed to slipping profit margins.¹⁸ The National Association of Software & Service Companies (Nasscom), an Indian trade association, reports that while the Indian export-oriented software and services sector grew 26 percent during 2002-03, spurred by a jump in IT services and business process outsourcing (BPO) activity, the industry continues to face a number of challenges including pricing pressure and increased competition, across their entire range of services.¹⁹

Appreciation of the country's currency has also affected the competitiveness of the Indian IT industry, as a substantial portion of the earnings of Indian software and IT services companies are from exports. The strengthening rupee has raised the cost of Indian service exports to the United States, increased costs incurred in rupees, and reduced the value of repatriated earnings. Further, India's wage advantage as compared with the United States and other Western countries is eroding.²⁰ The cost of employing a top Indian software engineer, for example, is approaching that of a Western counterpart, as trade in goods, or in this case, IT services, will tend to equalize wages for given skill levels.²¹ To retain their competitive wage rate position, Indian firms are outsourcing work they were hired to do to lower wage locations.²² By re-outsourcing work and passing on the savings indirectly, Indian firms seek to retain clients that may otherwise hire the lowest-cost outsourcing provider directly.

China

China is a rapidly developing lower-cost outsourcing services provider and is seen as a viable alternative to India in some areas.²³ In 2001, China's software exports measured \$850 million, whereas those of India exceeded \$6.2 billion. Currently, there are reportedly 150,000 IT professionals in China.²⁴ The major disadvantage China faces in U.S. market is a lack of proficiency in English. Consequently, China has focused on exports of IT services to other Asian markets.²⁵ The Chinese IT industry's potential is bolstered, in part, by the Chinese Government's reported

¹⁸ Manjeet Kripalani, Bruce Einhorn, and Paul Magnusson, "A Tempest over Outsourcing: American Legislators Are Accusing India of Stealing Tech Jobs," *BusinessWeek*, June 16, 2003, found at <http://www.businessweek.com>, retrieved July 9, 2003.

¹⁹ Nasscom, *IT Software and Services Market*, found at <http://www.nasscom.org/>, retrieved June 11, 2003.

²⁰ As wage rates in India increase while U.S. rates for similar work stagnate, the wage gap between the two countries decreases.

²¹ William Poole, "Trade, Wages and Employment," Federal Reserve Bank of St. Louis, Mar. 25, 2004, found at http://stlouisfed.org/news/speeches/2004/03_25_04.html, retrieved Apr. 27, 2004.

²² Mike Yamamoto, "Will India Price Itself Out of Offshore Market?," *CNET News*, Mar. 29, 2004, found at <http://www.news.com/>, retrieved Apr. 27, 2004.

²³ John Lui, "China Lags India in Software Exports," *CNETAsia*, Apr. 14, 2003, found at <http://asia.cnet.com/newstech/industry/0,39001143,39125760,00.htm>, retrieved Mar. 11, 2004.

²⁴ David Murphy, "China Aims to Catchup with India in Software Industry," *The Wall Street Journal*, Sept. 11, 2002.

²⁵ While the United States is India's largest export market, Japanese IT firms are the biggest consumers of Chinese outsourcing services.

decision to embark on a program to become a world technology leader.²⁶ Programs include focusing the country's university system on developing curriculums in both computer science and English proficiency. Further, at least 10 universities are being built to increase the country's supply of IT professionals. Multinationals have also begun establishing operations in China, providing the opportunity for technology transfer and an increased capital base. Even so, most of these undertakings are expected to remain far more modest than those in India until skills and infrastructure improve significantly.²⁷

Summary

While this chapter provides a brief discussion of international outsourcing in the IT industry, definitive statements regarding the impact and likely future of IT outsourcing would require research and analysis that is beyond the scope of this discussion. One vital component of a more rigorous analysis would be a quantitative review of trade data relating to international outsourcing. However, much of the data that has been reported in regards to outsourcing are in fact estimates, the accuracy of which is uncertain. To provide more in-depth perceptions of current and likely future trends, more extensive primary research is needed, such as direct interviews with industry representatives and data collection through surveys or other means.

²⁶ Steve Ulfelder, "China: Low-level Work at Lower-than-average Cost," *ComputerWorld*, Sept. 15, 2003, found at <http://www.computerworld.com/>, retrieved Oct. 14, 2003

²⁷ Bruce Einhorn and Manjeet Kripalani, "Outsourcing: Make Way for China," *BusinessWeek*, Aug. 4, 2003, found at http://www.businessweek.com/magazine/content/03_31/b3844132_mz033.htm, retrieved Oct. 14, 2003.

APPENDIX A
ACTIVITIES CAPTURED IN OFFICIAL
U.S. DATA ON CROSS-BORDER TRADE
IN SERVICES BY INDUSTRY

Appendix A
Activities captured in official U.S. data on cross-border trade in services by industry

Service	U.S. Exports	U.S. Imports
Accounting	Includes accounting, auditing, and bookkeeping services. Excludes data processing and tabulating services.	Same
Advertising	Includes preparation of advertising and placement of such advertising in media.	Same
Air transport		
<i>Passenger fares</i>	Predominantly includes receipts by U.S. air carriers from passengers traveling between the United States and foreign countries and between two foreign points. Also includes receipts by U.S. ocean carriers for the transport of passengers.	Predominantly includes payments to foreign air carriers by U.S. residents traveling between the United States and foreign countries. Also includes payments to foreign ocean carriers for the transport of passengers.
<i>Freight</i>	Includes receipts of U.S. air carriers for the international transportation of U.S. exports to foreign countries, and receipts of U.S. air carriers transporting U.S. exports between foreign points.	Includes payments to foreign-operated air carriers for transportation of U.S. imports from a foreign country to the United States.
<i>Port</i>	Includes goods and services purchased in U.S. airports by foreign-operated carriers, including fuel and oil, station and maintenance bases, wages, and other goods and services except aircraft leasing expenses.	Includes goods and services purchased in foreign airports by U.S.-operated carriers.
Architectural, engineering, construction, and mining	Includes architectural, construction, engineering, and mining services, including oil and gas field services. Architectural services include services mainly for businesses, but exclude landscape architecture and graphic design services. Engineering services relate to construction and mining services projects only, and exclude industrial engineering services, such as product design services. Land-surveying services are included, as are services of general contractors in the fields of building and heavy construction, construction work by special trade contractors, and drilling wells or erecting and dismantling drilling rigs for oil and gas fields. Data are reported for services purchased in connection with proposed projects (i.e., feasibility studies) as well as projects contracted or underway, but exclude contractors' expenditures on merchandise and labor.	Same, except data include contractors' expenditures on intermediate inputs of wages, services, materials, and other expenses.
Audiovisual	Includes foreign rentals of films and tapes from U.S. sources.	Includes U.S. rentals of films and tapes from foreign sources.

Appendix A--Continued

Activities captured in official U.S. data on cross-border trade in services by industry

Service	U.S. Exports	U.S. Imports
Banking and securities	Includes commissions and fees for brokerage services, private placement services, underwriting services, financial management services, credit card services, credit-related services, financial advisory and custody services, securities lending services, electronic funds transfer services, asset management services, and other financial services. Excludes deposit taking and lending services.	Same
Computer and data processing	Includes data entry, processing (both batch and remote), and tabulation; computer systems analysis, design, and engineering services; custom software and programming services; rights to produce, use, and distribute general use software, except prepackaged computer software physically shipped to or from the United States; integrated hardware/software services; and other computer services (e.g., timesharing, maintenance, and repair). Excludes operational leasing of computer and data processing equipment.	Same
Database and other information	Includes business and economic database services; medical, legal, technical, and similar database services; general news services; and credit reporting systems.	Same
Education	Includes tuition and living expenses of foreign students studying in U.S. colleges, universities, and other institutions of higher education.	Includes tuition and living expenses of U.S. students studying in foreign colleges, universities, and other institutions of higher education through "study abroad" programs sponsored by U.S. institutions.
Equipment leasing	Includes rentals for computer and data processing equipment, transportation equipment without crew or operators, and all other machinery and equipment. Excludes rentals under leases that have been capitalized, and rentals of any items other than machinery and equipment, such as real estate, film rentals, and employee leasing.	Same
Franchising	Includes fees received under business format franchising agreements. Business format franchising is characterized by an ongoing business relationship between franchisor and franchisee that includes not only the product, service, and trademark, but the entire business format itself. Excludes receipts for the use of trademarks, except where such trademarks are part of a business format franchise.	Includes fees paid under business format franchising agreements. Business format franchising is characterized by an ongoing business relationship between franchisor and franchisee that includes not only the product, service, and trademark, but the entire business format itself. Excludes payments for the use of trademarks, except where such trademarks are part of a business format franchise.

Appendix A--Continued

Activities captured in official U.S. data on cross-border trade in services by industry

Service	U.S. Exports	U.S. Imports
Health care	Includes inpatient and outpatient fees charged to foreign residents. Inpatient fees include all hospital staff and outside physician fees, tests, drugs, and room and board. Outpatient charges include outpatient surgery, physical rehabilitation and therapy, dermatology, AIDS treatments, and consultations. Excludes fees for ambulatory treatment or drugs provided outside a hospital. ¹	Not available
Industrial engineering	Includes engineering services related to the design of movable products, including product design services. Includes services performed with the assistance of computers. Excludes engineering and architectural services that relate to immovable products, such as those that relate to proposed construction services projects.	Same
Insurance	Includes primary and reinsurance premiums paid by foreign persons to U.S. insurance carriers operating in the U.S. market, net of claims paid to foreign persons.	Includes primary and reinsurance premiums paid by U.S. persons to foreign insurance carriers operating in their home markets, net of claims received by U.S. persons.
Installation, maintenance, and repair of equipment	Includes maintenance services for machinery and equipment, small maintenance work on structures, and installation and training services that are provided by a manufacturer in connection with the sale of goods, when the price of these services is not incorporated into the price of the goods that is entered on the declaration files with the U.S. Customs Service.	Same
Intangible intellectual property (royalties and license fees)	Includes payments for the sale or use of intangible assets and proprietary rights. Includes, among others, license fees and royalties for industrial processes and products; royalties for use of copyrighted material in books, records, and audio tapes; payments for the use of trademarks and brand names; license and rental fees for rights to use or reproduce prerecorded performances and events; payments for rights to broadcast and record live performances; license fees for rights to distribute or reproduce general-use computer software; and fees for business-format franchising.	Same
Legal	Includes legal advice and other legal services.	Same

Appendix A--Continued

Activities captured in official U.S. data on cross-border trade in services by industry

Service	U.S. Exports	U.S. Imports
Telecommunication	Predominantly includes net settlement receipts of U.S. carriers for terminating inbound foreign calls. Also includes telex, telegram, and other basic telecommunication services; value-added services, such as electronic mail, management of data networks, enhanced facsimile, and electronic funds transfer; telecommunication support services, such as repair and ground station services; and the launching of communications satellites.	Same, except predominantly includes net settlement payments by U.S. carriers to compensate foreign carriers for terminating outbound U.S. calls.
Training	Includes educational or training services provided on a contract or fee basis. Excludes tuition and fees charged to individual foreign students by U.S. educational institutions. Also excludes training performed by a manufacturer in connection with the sale of a good.	Includes educational or training services provided on a contract or fee basis. Excludes tuition and fees charged to individual U.S. students by foreign educational institutions. Also excludes training performed by a manufacturer in connection with the sale of a good.
Travel and tourism	Includes expenditures in the United States by foreign travelers (except foreign government personnel and their dependents, and other foreign citizens residing in the United States) for lodging, food, and transportation within the United States, and recreation and entertainment, personal purchases, gifts, and other outlays associated with travel in the United States. ²	Includes expenditures abroad by U.S. travelers (excluding U.S. Government personnel and their dependents, and other U.S. citizens residing abroad) for lodging, food, and transportation within foreign countries, and recreation and entertainment, personal purchases, gifts, and other outlays associated with travel abroad. ³
Utilities	Includes electric power generation, transmission, and distribution; natural gas distribution; operation of water treatment plants or water supply systems; operation of sewer systems; and operation of sewage treatment facilities that collect, treat, and dispose of waste.	Same.

¹ BEA has revised its methodology, and uses newly available source data to determine total medical exports. Inpatient estimates were obtained from data collected from State regulatory agencies, hospital associations, hospitals with international medical centers, and emergency rooms. U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, July 1999, p. 69.

² Expenditures are estimated by the USDOC, BEA, based on data principally supplied by the USDOC, International Trade Administration, Tourism Industries, in conjunction with the U.S. Department of Justice, Immigration and Naturalization Service, and by Statistics Canada and the Banco de Mexico. Officials of BEA and Tourism Industries, telephone interviews with USITC staff, Oct. 22 and 23, 1998.

³ *Ibid.* Tourism imports were revised based on the results of a one-time survey that compared expected travel expenditures to post-trip expenditures. The survey results indicate that U.S. travelers' expected expenditures understate post-trip expenditures in Latin America and the Asia-Pacific region. Accordingly, data for 1998 were revised upward, increasing travel payments by \$1.7 billion. Data for 1997 were adjusted using one-half the value of the adjustments in 1997. USDOC, BEA, *Survey of Current Business*, July 1999, pp. 69-70.

Sources: USDOC, BEA, *U.S. International Transactions in Private Services: A Guide to the Surveys Conducted by the Bureau of Economic Analysis*, Mar. 1998; USDOC, International Trade Administration, Tourism Industries, in conjunction with the U.S. Department of Justice, Immigration and Naturalization Service, and Statistics Canada and the Banco de Mexico; OECD, *Services Statistics on International Transactions*, p. 119; USDOC, BEA, *Survey of Current Business*, July 1999, pp. 69-70; and USDOC, BEA, *Survey of Current Business*, July 2000, pp. 72-73.

APPENDIX B
ACTIVITIES CAPTURED IN OFFICIAL
U.S. DATA ON AFFILIATE
TRANSACTIONS BY INDUSTRY

Appendix B

Activities captured in official U.S. data on affiliate transactions, by industry

Service	Sales and Purchases
Accounting	Auditing of accounting records, designing of accounting systems, preparing financial statements, developing budgets, preparing tax returns, processing payrolls, bookkeeping, and billing services.
Advertising	The creation of advertising campaigns and placing such advertising in periodicals, newspapers, radio, television, and other media. Activities include advice, creative services, account management, production of advertising material, media planning, and placement of advertisements.
Audiovisual	Motion picture, television tape, film, and sound recording production; distribution services; post-production services such as editing, film/tape transfers, and subtitling; and operating motion picture theaters. Does not include video tape and disk rentals or wholesale distribution of video cassettes and sound recordings.
Banking and Securities	Includes nondepository credit intermediation (credit card issuing, sales financing, mortgage companies, mortgage broking, international trade financing, and consumer finance companies); investment banking and securities dealing; securities brokerage; commodity contracts dealing and brokerage; portfolio management services; investment advisory services; and trust, fiduciary, and custody activities. Excludes lending and deposit-taking activities of depository institutions.
Computer and Data Processing	Includes the provision of expertise in the field of information technologies through one of more of the following activities: writing, modifying, testing, and supporting software to meet the needs of a particular customer; planning and designing computer systems that integrate computer hardware, software, and communication technologies; on-site management and operation of clients' computer systems and/or data processing facilities; and other professional and technical computer-related advice and services.
Construction	The construction of buildings and other structures, heavy construction (such as highways, power plants, and pipelines), land subdivision and development, additions, alterations, installation, maintenance, and repair services. Includes demolition services or clearing of building sites, along with other land preparation services. Also includes "Special Trade Contractors" which often subcontract to general contractors, such as plumbing, painting, electrical, masonry, and carpentry contractors.
Education	Instruction and training in any subject, either for-profit or nonprofit, by either privately or publicly owned entities. Includes preschool, elementary school, secondary school, junior and four-year colleges, universities, and professional schools, and technical training schools specializing in various subjects, such as secretarial skills, computer training, cosmetology, language instruction, automobile driving, flight instruction, and fine arts. This category also includes educational support services, such as educational consultants, guidance counseling services, and student exchange services.
Environmental	Includes environmental testing and analytical services, wastewater treatment works, solid waste management, hazardous waste management, remediation and industrial services, and environmental consulting and engineering. ¹
Equipment leasing	Rental and leasing of commercial-type and industrial-type (nonconsumer) machinery and equipment. Establishments included in this group are generally involved in providing capital or investment-type equipment that clients use in their business operations. Includes construction, transportation, mining, and forestry machinery, and other commercial equipment rental and leasing. Excludes leasing affiliates of commercial banks.

Appendix B

Activities captured in official U.S. data on affiliate transactions, by industry

Express delivery	<i>(Couriers and messengers)</i> Intercity and/or local delivery of parcels that may be handled by one person without using special equipment. May include collection, pick-up, and delivery operations using limited labor and minimal equipment. ²
Health Care	Includes hospitals; offices of physicians, mental health specialists, and other health care providers; outpatient care centers, including family planning, mental health, and substance abuse centers; medical laboratories; home health care services; nursing and residential care facilities; and providers of social assistance services, including adoption agencies, youth centers, child day care services, and services for the elderly.
Insurance carriers and related activities	Insurance carriers primarily engaged in underwriting annuities and insurance policies and investing premiums to build up a portfolio of financial assets to be used against future claims. Includes direct life, health, and medical insurance carriers, property/casualty and title insurance carriers, and reinsurance carriers. Also includes insurance agencies and brokerages, which are primarily engaged in acting as agents in selling annuities and insurance policies, and insurance claims adjusters.
Legal	Includes the services of lawyers or attorneys primarily engaged in the practice of law, notaries, real estate settlement services, real estate title abstract services, and patent agent services.
Maritime transport	Deep sea, coastal, and great lakes water transportation, including both freight and passenger transportation, using ships, barges, and boats.
Oil and gas field services	Includes drilling of oil and gas wells and other support services for oil and gas operations performed on a contract or fee basis, such as excavating slush pits and cellars; grading and building foundations at well locations; and cleaning out, bailing, and swabbing wells.
Retail distribution	Sales of merchandise to the general public for personal or household consumption, and services related to such sales, including after-sale repairs. Retailers fall into store and non-store categories, such as catalogs, door-to-door sales, and the Internet.
Telecommunication	Includes the operation, maintenance, or provision of access to facilities for the transmission of voice, data, text, and full motion picture video between network termination points, and telecommunications reselling. Includes wired, wireless, and satellite telecommunications.
Utilities	Includes generation, transmission, and/or distribution of electric power; distribution or marketing of natural gas for resale or to final consumers; and operation of water treatment plants, water supply systems, or sewage treatment and/or disposal systems.

Sources: North American Industry Classification System, United States, 1997 (Lanham, Md: Berman Press, 1998); and USDOC, BEA, "Guide to Industry and Foreign Trade Classifications for International Surveys, Oct. 1997," found at <http://www.bea.doc.gov/bea/surveys.htm>, retrieved Dec. 28, 2001.