Examination of U.S. Inbound and Outbound Direct Investment

Staff Research Study 26
Office of Industries
United States International Trade Commission

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Executive Summary

Direct investment, and the enterprises established or acquired as a consequence of such investment, increasingly shape global commerce. This paper surveys both U.S. direct investment abroad (USDIA) and foreign direct investment in the United States (FDIUS) during 1990-98. The study examines investment trends by country and by industry, sales by affiliates both in the United States and abroad, and the connection between direct investment flows and cross-border trade. A review of the economic literature on direct investment provides context for this research. The principal findings are summarized below and in table ES-1.

U.S. Direct Investment Abroad

- Total U.S. outbound investment stock in 1998 was $981 billion, with total 1998 investment outflows of $110 billion.

- The great majority of 1998 U.S. investment stock, 79 percent, was located in high income regions, primarily the European Union and Canada. Mexico ranked twelfth in outbound U.S. direct investment.

- Service industries account for the majority of outbound U.S. investment stock, with 59 percent of the 1998 total. The largest single industry is financial services, accounting for $338 billion in 1998, followed by chemicals and petroleum (both at $84 billion).

- The United Kingdom is the largest destination for U.S. direct investment abroad, with stock totaling $179 billion in 1998, followed by Canada ($104 billion) and the Netherlands ($79 billion). Brazil is the largest developing country recipient of U.S. direct investment, with $38 billion in 1998.

- Sales by U.S.-owned foreign affiliates were highest in the wholesale trade, petroleum, and transportation equipment industries in 1997, with total sales of $422 billion, $351 billion, and $244 billion, respectively. Sales are growing fastest in infrastructure industries, particularly electric, gas, and sanitary services, communications, and transportation services.

- U.S.-owned foreign affiliates employed 8 million workers in 1997, 57 percent of them in manufacturing industries. Workers in the United Kingdom, Canada, Mexico, and Germany accounted for 42 percent of the total.

Table ES-1
Major indicators of U.S. direct investment abroad (USDIA) and foreign direct investment in the United States (FDIUS), by selected country and sector

	U.S. Direct Investment Abroad (Outbound Investment)			Foreign Direct Investment in the United States (Inbound Investment)		
	Stock 1998	Sales 1997	Employment 1997	Stock 1998	Sales 1997	Employment 1997
	Billions of dollars		*Thousands*	*Billions of dollars*		*Thousands*
All countries	980.6	2,356.4	8,018.0	811.8	1,717.2	5,164.3
Brazil	37.8	67.4	340.8	0.6	4.0	4.5
Canada	103.9	274.2	941.9	74.8	139.4	601.6
France	39.2	130.9	483.7	62.2	135.4	411.2
Germany	42.9	234.5	627.4	95.1	194.5	657.6
Japan	38.2	205.1	396.7	132.6	446.4	812.4
Mexico	25.9	88.1	793.0	4.0	8.2	26.7
Netherlands	79.4	130.1	169.4	96.9	124.1	391.4
United Kingdom	178.7	337.9	977.2	151.3	258.9	983.2
All industries	980.6	2,356.4	8,018.0	811.8	1,717.2	5,164.3
Petroleum	83.5	351.1	174.3	50.7	157.8	105.0
Manufacturing	304.7	1,086.1	4,592.9	329.3	623.3	2,271.0
Services[1]	578.2	[1]903.4	[1]3,120.2	419.0	904.3	2,706.7

[1] Excludes oil and gas field services.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business,* Sept. 1999, pp. 55-56, 82-83; USDOC, BEA, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates,* annual publication, 1990-97; USDOC, BEA, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates*, annual publication, 1990-97.

- In most industries, annual compensation per employee is higher in the United States than in foreign affiliates overseas. The exceptions are the insurance, construction, and mining industries, where U.S. firms report higher compensation rates to workers in their foreign affiliates.

Foreign Direct Investment in the United States

- Total inbound investment stock equaled $812 billion in 1998, with total 1998 investment inflows of $109 billion. Member countries of the European Union accounted for 59 percent of the total. The largest single country investor in the United States was the United Kingdom, with a direct investment position of $151 billion, followed by Japan, with $133 billion.

- In 1998, slightly more than half of all foreign direct investment stock in the United States ($419 billion) was directed to the service sector. The manufacturing sector accounted for 41 percent, and petroleum comprised 6 percent. Industries that attracted the most FDIUS included chemicals, wholesale trade, and insurance.

- Japanese-owned affiliates accounted for 25 percent of sales by all foreign-owned affiliates in the United States in 1997. Affiliates from seven parent countries accounted for 82 percent of U.S. affiliate sales: Japan, the United Kingdom, Germany, Canada, France, the Netherlands, and Switzerland.

- U.S. affiliates employed 5.2 million U.S. workers in 1997, equal to 4.8 percent of total U.S. private-sector employment. The industries with the highest employment by foreign-owned affiliates were the retail trade and machinery manufacturing industries.

- On average, employees of foreign-owned U.S. affiliates received annual compensation of $44,600, 27 percent higher than the $35,100 paid to employees of all U.S. companies, although the figures vary significantly by industry. Foreign investors are not more likely to invest in either high-wage or low-wage industries.

- The states of California, Texas, and New York have attracted the greatest amount of foreign direct investment in the United States, both in terms of employment, and of property, plant, and equipment. The three states combined accounted for approximately 25 percent of the U.S. total by each measure. Hawaii, South Carolina, and North Carolina are the states with the largest percentage of workers employed by foreign-owned U.S. affiliates.

- Gross product (value added) generated by foreign-owned U.S. affiliates equaled 5.4 percent of the U.S. private-sector GDP in 1997. Gross product of U.S. affiliates increased at an average annual rate of 7.7 percent during 1992-97, compared with 5.7 percent for the entire U.S. private sector. Foreign-owned firms in the chemicals and petroleum industries accounted for more than 25 percent of total gross product by industry.

Trade and Investment

- Sales by U.S.-owned foreign affiliates totaled $1,983 billion in 1997, more than double the total amount of U.S. cross-border exports ($928 billion). Sales by foreign-owned U.S. affiliates totaled $1,717 billion, 65 percent larger than the total amount of U.S. cross-border imports ($1,043 billion).

- During 1990-97, intrafirm exports of goods accounted for more than 80 percent of total intrafirm exports, with intrafirm services trade comprising the remainder. U.S. firms in the wholesale trade, transportation equipment, electronics, industrial machinery, and chemicals industries accounted for the majority of intrafirm merchandise exports to affiliates.

- During 1990-97, intrafirm imports of goods accounted for almost 95 percent of all intrafirm imports, with services constituting close to 5 percent of intrafirm imports. Imported goods were most prominent for transportation equipment affiliates, industrial machinery affiliates, and electronic equipment affiliates. Imported services primarily comprised research and development assessments and intangible intellectual property.

- During 1990-97, U.S. exports constituted more than 10 percent of the value of the output of U.S.-owned foreign affiliates. Imports accounted for approximately 16 percent of the total value of output by foreign-owned U.S. affiliates.

- Almost three-fourths of U.S. intrafirm goods exports were sent to Canada, the European Union, Mexico, and Japan.

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Chapter 1
Introduction

Purpose and Scope

Direct investment, and the enterprises established or acquired as a consequence of such investment, increasingly shape global commerce. Multinational corporations (MNCs) are responsible for the majority of direct investment, through their investment in corporate affiliates outside their home countries. Multinational companies may establish a commercial presence overseas for a variety of reasons, including better access to foreign markets, lower labor costs, access to resources or to a labor force with particular skills, and the ability to more closely monitor proprietary information and manufacturing processes. Recipients of direct investment obtain benefits that include greater access to technology, job creation, and capital with which to fuel economic growth, pursue social objectives, and offset temporary trade imbalances.[1]

Foreign operations comprise a significant percentage of many MNCs' business. General Electric, for example, is a U.S.-based multinational ranked first worldwide by the United Nations in terms of its total foreign assets ($97.4 billion). In 1997, 27 percent of its sales, 32 percent of its assets, and 40 percent of its employees came from outside the United States.[2] Ford Motor Company, ranked second in total foreign assets ($72.5 billion), had operations in 38 foreign countries in 1997,[3] with 31 percent of sales, 26 percent of assets, and 48 percent of its employment outside of the United States.[4] Table 1-1 presents details regarding the international operations of the world's 25 largest multinational corporations.

The operations of foreign affiliates, as measured by affiliate sales, are now more extensive than the level of global, cross-border trade. In

[1] More extensive discussions of the determinants of direct investment are found in chapter two, which provides a brief literature review, and appendix A, which provides a more detailed review.

[2] United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development* (New York: United Nations, 1999), table III.1., p. 78.

[3] In 1999, Ford had operations in 40 countries. Ford Motor Company, *1999 Annual Report* and *1997 Annual Report*, found at Internet address http://www.ford.com/finaninvest/stockholder/, retrieved Aug. 4, 2000.

[4] *World Investment Report 1999*, p. 78.

Table 1-1
The world's top 25 MNCs, ranked by foreign assets, 1997

Corporation	Country	Industry	Foreign assets	Foreign assets/ Total assets	Foreign sales/ Total sales	Foreign employment/ Total employment
			Billions of dollars	*Percent*		
General Electric	United States	Electronics	97.4	32.0	27.0	40.2
Ford Motor Company	United States	Automotive	72.5	26.3	31.2	47.9
Royal Dutch/Shell Group	Netherlands/ United Kingdom	Petroleum	70.0	60.9	53.9	61.9
General Motors	United States	Automotive	(1)	(1)	28.6	(1)
Exxon Corporation	United States	Petroleum	54.6	56.8	87.1	(1)
Toyota	Japan	Automotive	41.8	39.9	56.9	(1)
IBM	United States	Computers	39.9	49.0	62.3	50.0
Volkswagen Group	Germany	Automotive	(1)	(1)	65.7	47.8
Nestle SA	Switzerland	Food and beverages	31.6	(1)	(1)	(1)
Daimler-Benz AG	Germany	Automotive	30.9	40.6	66.8	24.9
Mobil Corporation	United States	Petroleum	30.4	69.7	57.2	52.0
FIAT Spa	Italy	Automotive	30.0	43.4	39.9	39.2
Hoechst AG	Germany	Chemicals	29.0	85.2	81.0	(1)
Asea Brown Boveri (ABB)	Switzerland	Electrical equipment	(1)	(1)	97.1	(1)
Bayer AG	Germany	Chemicals	(1)	(1)	(1)	(1)
Elf Aquitaine SA	France	Petroleum	26.7	63.1	60.5	48.3
Nissan Motor Co., Ltd.	Japan	Automotive	26.5	46.0	55.9	(1)
Unilever	Netherlands/ United Kingdom	Food and beverages	25.6	83.1	96.6	97.6
Siemens AG	Germany	Electronics	25.6	38.1	66.0	52.1
Roche Holding AG	Switzerland	Pharma-ceuticals	(1)	(1)	98.4	81.0
Sony Corporation	Japan	Electronics	(1)	(1)	78.9	(1)
Mitsubishi Corporation	Japan	Diversified	21.9	32.6	34.5	(1)
Seagram Company	Canada	Beverages	21.8	98.2	96.9	(1)
Honda Motor Co., Ltd.	Japan	Automotive	21.5	58.9	69.4	(1)
BMW AG	Germany	Automotive	20.3	63.8	73.5	44.3

[1] Data not available

Source: UNCTAD/Erasmus University database, from *World Investment Report 1999*, table III.1.

1997, global sales by the affiliates of all MNCs measured $9.7 trillion, reflecting average annual growth of 9.4 percent since 1990.[5] By contrast, global cross-border exports by all nations measured $5.3 trillion, reflecting average annual growth of 6.6 percent since 1990.[6] Affiliates' global gross product (value added) measured $2.3 trillion in 1997, compared to global gross domestic product of $29.1 trillion that year, and their cross-border exports totaled $2.0 trillion.[7] At the same time, global direct investment flows reached unprecedented levels, measuring $423 billion in 1997.[8]

The United States is the largest source and destination of foreign direct investment.

The United States is consistently the world's largest source and recipient of direct investment. In 1997, U.S. outbound direct investment flows measured $110.0 billion, and inbound flows measured $109.3 billion.[9] These flows and the follow-on operations of affiliates have a pronounced effect on the U.S. economy, as they do in most developed economies, both through the operations of U.S. firms overseas and the operation of foreign firms in the United States. Foreign firms are generally more likely to supply goods and services to U.S. customers through their U.S.-based affiliates than they are to export to the United States.[10] In 1997, sales by foreign-owned affiliates in the U.S. market totaled $1.7 trillion,[11] whereas U.S. cross-border imports of goods and services totaled $1.0 trillion.[12] In 1997, foreign-owned affiliates in the U.S. market accounted for 5.4 percent of U.S. private-sector gross domestic product, 4.8 percent of

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[5] *World Investment Report 1999*, p. 9.

[6] Statistical Division of the United Nations, found in U.S. Department of Commerce (USDOC), U.S. Census Bureau, *Statistical Abstract of the United States 1999: The National Data Book* (Washington, D.C.: U.S. Census Bureau, 1999), p. 831.

[7] World Bank, *World Development Indicators 2000*, found at Internet address http://www.worldbank.org/data/, retrieved Aug. 18, 2000; and *World Investment Report 1999*, p. 9.

[8] Ibid., p. 367; and UNCTAD, *World Investment Report 1997:Transnational Corporations, Market Structure and Competition Policy* (United Nations: New York, 1997), p. 308.

[9] By comparison, outbound direct investment flows from the United Kingdom, ranked second, totaled $63.6 billion. China ranked second in terms of inbound direct investment flows in 1997, with a total of $44.2 billion. *World Investment Report 1997*, pp. 477-87.

[10] Both channels of delivery, affiliate transactions and cross-border exports, may be involved in a single transaction. For instance, if a U.S. affiliate sells goods or services abroad and its foreign parent performs some of the work integral to that sale and subsequently bills the affiliate, the sales revenue would be recorded as an affiliate transaction, but the exchange between the affiliate and its parent would be recorded in the U.S. balance of payments as a cross-border import.

[11] USDOC, Bureau of Economic Analysis (BEA), *Foreign Direct Investment in the United States: Preliminary Results from the 1997 Benchmark Survey*, table A-1.

[12] USDOC, BEA, *Survey of Current Business*, July 1999, p. 85.

employment,[13] 16 percent of exports, and 26 percent of imports.[14] Likewise, U.S. firms make extensive use of affiliates to meet the demand of foreign customers. In 1997, sales by U.S.-owned affiliates in foreign markets totaled $2.4 trillion,[15] whereas U.S. cross-border exports of goods and services totaled $928.0 billion.[16]

This report addresses questions regarding the extent of U.S. direct investment abroad (USDIA) and foreign direct investment in the United States (FDIUS), the nature of affiliate operations in the U.S. and foreign markets, and the interrelationship between trade and investment. The report uses a question-answer format to provide clear answers to complex questions. In the interest of brevity, text and accompanying figures principally lay out major themes and trends, and tables provide more detailed coverage, by industry or country, as appropriate.

Organization

The remainder of this chapter briefly defines direct investment, discusses the nature and sources of the data used in this report, and defines key terms and concepts used throughout the report. Chapter 2 presents a brief survey of the relevant economic literature in the field.[17] Chapter 3 focuses on USDIA during 1990-98, examining both the countries and the industries that are important destinations for U.S. investment, and the operations of U.S.-owned affiliates located abroad. Chapter 4 examines the sources of FDIUS during 1990-98. The chapter also identifies the principal U.S. industries in which foreigners have invested, and provides information regarding the operations of foreign-owned affiliates in the United States. Chapter 5 examines the impact of foreign direct investment on cross-border trade, analyzing the extent of affiliates' intrafirm and extrafirm trade, how that trade relates to overall U.S. cross-border trade, and how it varies by industry and country.

Direct Investment Defined

U.S. direct investment abroad, or outbound investment, reflects investment by U.S. parent companies in foreign-based affiliate companies, where the U.S. parent controls 10 percent or more of the voting securities of an incorporated foreign business enterprise, or the equivalent interest in

[13] USDOC, BEA, *Survey of Current Business,* Aug. 1999, p. 21.

[14] Ibid., p. 40.

[15] USDOC, BEA, *U.S. Direct Investment Abroad: Operation of U.S. Parent Companies and their Foreign Affiliates, Preliminary 1997 Estimates,* table II.A.1.

[16] USDOC, BEA, *Survey of Current Business,* July 1999, p. 85.

[17] A more comprehensive literature review is provided in appendix B.

an unincorporated foreign business enterprise.[18] A U.S. parent is defined as a fully consolidated enterprise that consists of (1) the U.S. parent corporation, whose voting securities are not owned more than 50 percent by another U.S. corporation, and (2) its affiliates which, proceeding down each ownership chain from the U.S. parent corporation, are any U.S. corporations whose voting securities are more than 50 percent owned by the U.S. corporation above it.[19] For the purposes of this report, U.S. multinationals comprise U.S. parents and their foreign affiliates.

Foreign direct investment in the United States, or inbound investment, reflects investment by foreign parents in U.S.-based affiliate companies, where the foreign parent controls 10 percent or more of the voting securities of a U.S. business enterprise, or the equivalent in an unincorporated U.S. business.[20] Foreign parents are the first person[21] outside the United States in a U.S. affiliate's ownership chain that has a direct investment in the affiliate. In certain instances, such as when discussing intrafirm trade, it is necessary to reference the ultimate beneficial owner (UBO) and the foreign parent group. The ultimate beneficial owner of an U.S. affiliate is that person, proceeding up the affiliate's ownership chain, that is not owned more than 50 percent by another person. The foreign parent group consists of (1) the foreign parent, (2) any foreign person, proceeding up the parent's ownership chain, that owns more than 50 percent of the person below it, up to and including the UBO, and (3) any foreign person, proceeding down the ownership chain of each of these members, that is owned more than 50 percent by the person above it. For the purposes of this report, foreign multinationals comprise foreign parents and their U.S. affiliates.[22]

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[18] USDOC, BEA, "A Guide to BEA Statistics on U.S. Multinational Companies," *International Direct Investment: Studies by the Bureau of Economic Analysis* (Washington, DC: USDOC, 1999), p. 198.

[19] USDOC, BEA, *U.S. Direct Investment Abroad: 1989 Benchmark Survey, Final Results* (Washington, DC: USDOC, 1992), p. M-5.

[20] USDOC, "A Guide to BEA Statistics on U.S. Multinational Companies," *International Direct Investment: Studies by the Bureau of Economic Analysis*, p. 198.

[21] Persons are defined to include business enterprises; religious, charitable, or other nonprofit organizations; individuals; governments; and certain other entities, such as estates and trusts.

[22] If the foreign parent is not owned more than 50 percent by another juridical person (corporation), the foreign parent and the UBO are the same. USDOC, BEA, *Foreign Direct Investment in the United States: 1992 Benchmark Survey, Final Results* (Washington, DC: USDOC, 1995), pp. M-6 - M-7.

Direct Investment Data

The Bureau of Economic Analysis (BEA) maintains two sets of data that provide information about U.S. and foreign multinational corporations: (1) balance of payments data and associated direct investment position data, and (2) financial and operating data of multinational parents and their affiliates. Balance of payments data report the value of transactions between parents and their affiliates, and are reflected in both the current account and the capital account. Direct investment position, or stock, data reflect the cumulative value of parents' investments in their affiliates.[23] In contrast, financial and operating data track sales, assets, wages, employment, and various other indicators pertaining to the operations of both parents and affiliates.

BEA generally collects data through mandatory surveys. Benchmark surveys, conducted every 5 years, collect both types of data and cover virtually all multinational corporations. BEA also conducts quarterly sample surveys and annual sample surveys, with balance of payments and direct investment position data collected in the former, and financial and operating data collected in the latter. Sample surveys are not mandatory for small affiliates,[24] but BEA estimates the data for these affiliates by extrapolating from the most recent benchmark survey.[25] Data regarding foreign direct investment capture a complex set of financial flows. More information on these flows, and their relationship to the U.S. balance of payments accounts, is presented in appendix A.

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[23] Historical cost data, which reflect the value of investments at the time of investment, are the only direct investment data that provide country- and industry-specific detail. This report presents these data in nominal terms only; the data are not deflated to correct for deflation. For a discussion of issues regarding the deflation of these data, see USDOC, BEA, "Valuation of the U.S. Net International Investment Position," *International Direct Investment: Studies by the Bureau of Economic Analysis* (Washington, DC: USDOC, 1999), pp. 3-15.

[24] Beginning in 1997, affiliates were required to respond only if they had assets, sales, or net income greater than $3 million. The previous threshold was $1 million. This reduced the number of foreign-owned affiliates that responded to BEA surveys from 13,108 firms in 1996 to 9,474 firms in 1997. However, the small size of these companies' operations reportedly means that the figures for total sales, assets, net income, and gross product have been affected only slightly. USDOC, BEA, *Survey of Current Business*, Aug. 1999, p. 23.

[25] USDOC, BEA, "A Guide to BEA Statistics on U.S. Multinational Companies," *International Direct Investment*, pp. 199-200.

Direct Investment and Current Account Presentation

The increasing magnitude of direct investment and sales through affiliates suggests that these flows be more fully integrated into examinations of global commerce and assessments of industrial competitiveness. Inclusion of direct investment data in trade analyses provides a more complete picture of the activity of U.S. firms in global markets, suggesting that economists and trade analysts focus on "global commercial activity" rather than on cross-border trade, a single component of such activity. Analysis of combined trade and direct investment data could better serve trade and investment policy makers, trade negotiators, and those monitoring trade and investment agreements.[26]

Recognition of the growing significance of direct investment, and how such investment influences the global competitive environment, has led many to advocate alternative presentations of the current account. Among these advocates have been a National Academy of Sciences study panel chaired by Robert Baldwin;[27] the Organization of Economic Cooperation and Development; Eurostat; DeAnne Julius, in the book *Global Companies and Public Policy: The Growing Challenge of Foreign Direct Investment*;[28] and Evelyn Parrish Lederer, Walther Lederer, and Robert Sammons, in the report *International Services Transactions of the United States: Proposals for Improvement in Data Collection*.[29]

Specifically, it has been advocated that direct investment receipts derived from sales through foreign affiliates be presented alongside exports of goods and services, instead of being presented in different line items of the current account; and that direct investment payments be presented alongside imports of goods and services (table 1-2). Presentation of a line

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[26] Analysis of cross-border trade flows would remain vitally important as this trade has more direct effects on the U.S. economy than affiliate sales. This is because most or all of the income generated through cross-border exports is generally believed to accrue to U.S. labor and capital. Direct investment income derived through affiliate sales accrues solely to U.S. parent firms; other income generated through affiliate sales accrues to foreign labor and capital.

[27] National Research Council, Panel on Foreign Trade Statistics, *Behind the Numbers: U.S. Trade in the World Economy*, Anne Y. Kester, ed. (Washington, DC: National Academy Press, 1992).

[28] DeAnne Julius, *Global Companies and Public Policy: The Growing Challenge of Foreign Direct Investment* (New York, NY: Council on Foreign Relations Press, 1990). Cited in USDOC, BEA, *Survey of Current Business*, Dec. 1993, p. 51.

[29] Evelyn Parrish Lederer, Walther Lederer, and Robert L. Sammons, *International Services Transactions of the United States: Proposals for Improvement in Data Collection*, a report prepared for the Departments of State and Commerce and the Office of the U.S. Trade Representative (Washington, DC: 1982). Cited in USDOC, BEA, *Survey of Current Business*, Dec. 1993, p. 52.

item that reflects both cross-border trade and net direct investment receipts would provide a more complete perspective on how U.S. firms are faring in global markets, irrespective of their chosen mode of delivery. From table 1-1, for instance, it can be posited that there is greater balance with respect to U.S. firms' global commercial activity than either the goods and services trade balance or the current account balance would suggest. Deficits on the combined goods, services, and net investment income account generally tend to be smaller than deficits on the other accounts, and in 1991-92, this combined account recorded surpluses.

Table 1-2
Ownership-based disaggregation of the U.S. current account, 1990-97

	1990	1991	1992	1993	1994	1995	1996	1997
	Billions of dollars							
Exports of goods and services and income receipts	708.1	729.5	748.4	776.4	868.0	1,005.7	1,074.4	1,197.2
Receipts resulting from exports of goods and services and direct investment abroad	602.4	639.0	673.9	709.5	779.9	889.5	953.1	1,054.3
Exports of goods and services	536.1	580.0	615.9	641.8	702.1	793.5	849.8	938.5
Direct investment income	66.3	59.1	58.0	67.7	77.9	96.0	103.3	115.8
Other income receipts	105.8	90.5	74.5	66.9	88.1	116.2	121.3	142.9
Imports of goods and services and income payments	759.6	735.0	763.2	823.2	950.5	1,083.8	1,161.5	1,298.7
Payments resulting from imports of goods and services and direct investment payments	619.9	607.7	656.3	720.9	823.9	923.2	989.7	1,089.8
Imports of goods and services	616.0	609.4	652.9	711.7	800.5	891.0	954.1	1,043.3
Direct investment payments	3.9	-1.7	3.3	9.1	23.5	32.2	35.6	46.6
Other income payments	139.7	127.4	106.9	102.3	126.6	160.6	171.8	208.9
Net unilateral transfers	-27.8	9.8	-35.9	-38.5	-39.2	-35.4	-42.2	-42.0
Balance on current account	-79.3	4.3	-50.6	-85.3	-121.7	-113.6	-129.3	-143.5
Balance on goods and services	-79.9	-29.5	-37.0	-69.9	-98.4	-97.5	-104.3	-104.7
Balance on goods, services, and net direct investment income	-17.5	31.3	17.6	-11.4	-44.0	-33.7	-36.6	-35.5

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Jan. 2000, p. 89.

Chapter 2
Literature Review

Overview

Much of the research on direct investment has focused on its apparent effects on employment, wages, trade, and research and development (R&D). This chapter briefly surveys economic literature to see what conclusions others have drawn regarding these topics. A more extensive literature review, which discusses a wider range of topics related to direct investment, is found in appendix B.

U.S. Direct Investment Abroad (USDIA)

How has U.S. direct investment abroad affected U.S. wages and employment levels?

The empirical evidence on this topic is mixed, in part due to the complexity of the phenomenon. The effect of USDIA on wages, particularly on the relative wages of skilled and unskilled workers, is probably outweighed by other factors such as technological change. There are plausible economic mechanisms linking USDIA to either wage increases (e.g., if direct investment supports U.S. exports) or wage decreases (e.g., if production overseas mostly displaces U.S. production). Researchers using a variety of methods have been unable to concur on whether the likely effect of outbound direct investment on U.S. wages is positive or negative, though the most careful estimates show relatively small effects.

It is often claimed that U.S. MNCs shift activities involving less-skilled labor to foreign locations, and that this practice causes declines in employment in U.S. parent companies. However, Baldwin, reviewing a number of studies using mainly 1980s data, states that the view of most economists seems to be that no firm conclusion is warranted about the net employment effects of direct foreign investment. Broad generalizations are difficult because of the very different employment effects one obtains from various plausible alternative assumptions about

what will happen in the absence of foreign investment and what the magnitude of increased imports by the host country from the investing country will be.[1]

The first wave of literature attempting to estimate the number of net jobs created or destroyed by USDIA dates from the early 1970s, and is reviewed by Hawkins and Dunning.[2] These estimates, focusing primarily on manufacturing industries, have yielded estimates of net job effects ranging from negligible effects to hundreds of thousands of jobs created or destroyed. Analysts for labor unions generally provided estimates of net job loss for U.S. workers as the result of the activities of U.S. MNCs.[3] Hawkins analyzes the reasons why different analysts obtain different estimates of the employment effects of USDIA:

> At least four questions must be answered–generally by assumption–in order to derive an estimate of the "employment effects" of MNC operations.
>
> 1. What would local (U.S.) production have been had foreign-affiliate production not existed?
> 2. Without foreign affiliates, what would U.S. exports have been?
> 3. ...[W]hat relationship ... should be used to translate production in terms of dollars into man-years of employment (or jobs)?
> 4. How many service, management, and staff employees would not be needed in MNCs' home offices or in their supporting service organizations if no production were carried out abroad?
>
> > ...Those who have criticized MNCs as vehicles for "runaway plants" and "exporters of jobs" have almost universally ignored items 2 and 4, and have assumed that, in item 1, most, if not all foreign production of MNCs could have been produced at home–and they often ignore the vital qualification–<u>without</u> loss of markets to foreign competitors. On the other hand, the advocates of

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[1] Robert E. Baldwin, "The Effect of Trade and Foreign Direct Investment on Employment and Relative Wages," National Bureau of Economic Research (NBER) Working Paper No. 5037 (Cambridge, MA: NBER, 1995).

[2] Robert G. Hawkins, "U.S. Multinational Investment in Manufacturing and Domestic Economic Performance," Center For Multinational Studies Occasional Paper No. 3 (Feb. 1972), Washington, DC; Robert G. Hawkins, "Job Displacement and the Multinational Firm: A Methodological Review," Center For Multinational Studies Occasional Paper No. 4 (June 1972), Washington, DC; and John H. Dunning, *Multinational Enterprises and the Global Economy* (Workingham, England: Addison-Wesley, 1993).

[3] Stanley Ruttenburg; "Needed: A Constructive Foreign Trade Policy," *AFL-CIO* (Oct. 1971), pp. 70-73; and Elizabeth R. Jager, "U.S. Labor and Multinationals," in Duane Kujawa, ed., *International Labor and the Multinational Enterprise* (New York: Praeger, 1975), pp. 22-46.

> the MNCs tend to emphasize items 3 and 4, especially the employment associated with export stimulation, and assume or conclude that little if any foreign production displaces U.S. production...[and] that markets would have been lost to foreign competition in the relatively near future, had the foreign investment been foregone....[4]

Yet, Lipsey reports that 1989 employment by U.S. parents was negatively correlated with foreign affiliates' production, with a loss of about 0.8 parent employees for every million dollars in affiliate sales.[5] Kravis and Lipsey reported similar results using 1982 data.[6] However, the negative relationship between affiliate sales and parent employment occurs only in the manufacturing sector, in which the loss was estimated to be about 1.4 employees per million dollars of affiliate sales. An additional million dollars of affiliate sales in the services and petroleum sectors was associated with a gain of 1.2 employees in the parent firm.

A number of studies have noted that since the 1970s, wages of U.S. "white-collar" or "non-production" workers have grown more rapidly than wages of U.S. "blue-collar" or "production" workers, while at the same time demand for non-production workers relative to production workers has increased. Analysis has focused on the extent to which these shifts can be attributed either to technological factors that have increased the relative demand for skilled labor, or international factors such as increased imports from or outbound direct investment in low-wage countries.[7]

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[4] Robert G. Hawkins, "U.S. Multinational Investment in Manufacturing and Domestic Economic Performance," p. 20.

[5] This result was obtained from a regression in which parent employment was a function both of parent net sales (defined as parent sales less imports from affiliates) and affiliate net sales (defined as affiliate sales less imports of affiliates from the United States). Robert E. Lipsey, "Outward Direct Investment and the U.S. Economy," NBER Working Paper No. 4691 (1995).

[6] Irving B. Kravis and Robert E. Lipsey, "The Effect of Multinational Firms' Foreign Operations on Their Domestic Employment," NBER Working Paper No. 2760 (1988).

[7] A useful series of reviews appears in the *Journal of Economic Perspectives (JEP)* symposium entitled "Income Inequality and Trade," vol. 9, No. 3 (Summer 1995). This includes Richard B. Freeman, "Are Your Wages Set in Beijing?" pp. 15-32, and David J. Richardson, "Income Inequality and Trade: How to Think, What to Conclude," pp. 33-56, who present the conventional wisdom that technology has played a larger role than trade in the increasing wage gap between skilled and unskilled workers; and Adrian Wood, "How Trade Hurt Unskilled Workers," pp. 57-80, who maintains that trade has played a larger role.

Feenstra and Hanson provide evidence that both increasing imports and U.S. direct investment abroad may have played a role in the increasing wage gap. They argue that shifts of capital from developed countries to developing countries will lead to rising relative wages of skilled workers in both the North and the South,[8] as will neutral[9] technological change in the South.[10] The authors note that increases in the wage differential between skilled and unskilled workers occurred in both the United States and Mexico in the 1980s, at the same time as direct investment capital flowed from the United States to Mexico under the maquiladora program, providing circumstantial support for their argument.[11]

However, other evidence points to technological change, rather than trade or direct investment, as the primary factor underlying the rising premium paid to skilled workers.[12] First, if imports of unskilled-labor-intensive goods were driving down the wages of unskilled workers, the prices of these goods should be falling relative to other goods.[13] In the United States, Germany, and Japan, neither wholesale prices nor import prices of unskilled-labor-intensive goods fell. Second, the fact that both wages *and* employment of skilled workers have been growing simultaneously suggests an increase in the overall demand for skilled workers, which is easier to reconcile with technological change than with trade.

With respect to direct investment, Lawrence notes that workers in foreign affiliates of U.S. parents, in both developed and developing countries, fared similarly to each other and to U.S. workers. From 1977 to 1989, the employment share of non-production workers in the United States increased and the relative wage of non-production workers fell. While there was some increase in the share of U.S. MNCs' global employment in developing-country affiliates, the behavior of relative wages and employment shares globally is more consistent with technological change than with a transfer of low-skilled wages and employment from North to South.

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[8] The North refers to developed countries, the South refers to developing countries.

[9] I.e., technological change which does not alter the employment shares of skilled and unskilled labor for given relative wages.

[10] While not emphasized by Feenstra and Hanson, *biased* technological change in favor of skilled labor taking place worldwide could also account for increasing skilled-unskilled wage gaps in both the North and the South.

[11] Robert C. Feenstra and Gordon H. Hanson, "Foreign Investment, Outsourcing and Relative Wages," NBER Working Paper No. 5121, 1995.

[12] Robert Z. Lawrence, "Trade, Multinationals, and Labor," NBER Working Paper No. 4836 (1994).

[13] This result is known in trade theory as the Stolper-Samuelson theorem.

Krugman argues that flows of direct investment from developed to developing countries were too small to have significant impacts on wages:

> The entire emerging-market investment boom since 1990 has reduced the advanced world's capital stock by only 0.5% from what it otherwise would have been...A back-of-the-envelope calculation therefore suggests that capital flows to the Third World since 1990 ... have reduced real wages in the advanced world by about 0.15% - hardly the devastation that [World Economic Forum president Klaus] Schwab, [European Commission President Jacques] Delors, or the Economic Policy Institute presume.[14]

The estimate cited considers capital flows during 1990-93; an estimate using more recent data and the same methodology would yield qualitatively similar, although perhaps larger, results.

Similarly, Slaughter argues that the data on U.S. outbound direct investment in the 1980s do not support the view that increased developing-country employment by U.S. MNCs changed the structure of wages in the United States. Estimating MNCs' demand for domestic and foreign labor formally, he finds that home and foreign production labor "at best seem to be weak price substitutes and may in fact be price complements."[15] If U.S. and foreign production labor are price complements, then the availability of cheap labor in one country enhances employment in all the countries in which the firm operates.

In a paper focusing on U.S. parent employment, Brainard and Riker find that while there is a small amount of substitution between workers in the parent firm and foreign affiliates in developing countries, substitution among workers in different developing country affiliates is more intense. That is, in choosing to employ workers in one developing country rather than another, U.S. MNCs prefer developing countries with lower wages;[16] but the allocation of employment between U.S. and developing country locations is not much affected by wages.[17] In a companion paper, Brainard and Riker analyze firm-level data on foreign manufacturing affiliates owned by U.S. firms between 1983 and 1992. Their results

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[14] Paul Krugman, "Does Third World Growth Hurt First World Prosperity?" *Harvard Business Review*, July-Aug., 1994. Reprinted in Paul Krugman, *Peddling Prosperity* (Cambridge, MA: MIT Press, 1996), p. 63. The page number citation is from the reprinted version.

[15] Matthew J. Slaughter, "Multinational Corporations, Outsourcing, and American Wage Divergence," NBER Working Paper No. 5253 (1995).

[16] Specifically, a 10-percent decline in wages in a given developing country is associated with a decline of 0.17 percent in U.S. parent employment, and with a much larger decline of 1.6 percent in employment in other developing-country affiliates.

[17] Lael S. Brainard and David A. Riker, "Are U.S. Multinationals Exporting U.S. Jobs?" NBER Working Paper No. 5958 (1997).

indicate that within U.S. multinationals, lower wages in developing-country affiliates tends to be associated with increased employment in developed-country affiliates.[18] This means that developed and developing country labor within the same firm are complements rather than substitutes. Labor in developed country affiliates tends to substitute for labor in other developed country affiliates.[19] These results are consistent with a situation in which workers in developed and developing countries work together in performing tasks at different skill levels in a vertically integrated production process, while workers in various developed countries are working in horizontally integrated affiliates, any one of which can service a number of markets.[20]

How has U.S. direct investment abroad affected U.S. exports?

The balance of evidence indicates that U.S. exports tend to be positively associated with U.S. direct investment abroad. A major reason for this positive association is seen in the raw data alone: in 1997, nearly 24 percent of U.S. exports were exports of U.S. parents to their foreign affiliates (see chapter 5, table 5-3). Thus, if affiliate activity increases, and the ratio of affiliate sales to parents' exports to affiliates remains constant, then U.S. exports will increase as well. This type of relationship between affiliate sales and exports ("complementarity") is likely if, for example, U.S. exports are used as intermediate goods in affiliate manufacturing. In principle, increased USDIA could lead to decreased U.S. exports if affiliate sales in foreign markets displace U.S. exports which would have otherwise served those markets ("substitution"). In the aggregate, whether USDIA leads to increases or decreases in U.S. exports depends on whether the complementarity effect outweighs the substitution effect.

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[18] Lael Brainard and David Riker, "Are U.S. Multinationals Exporting U.S. Jobs?"

[19] Specifically, a 10-percent decline in wages in developing-country affiliates is associated with a 1.9-percent increase in developed-country employment, while a 10-percent decline in wages in developed country affiliates is associated with a 1.5-percent decrease in developed country employment.

[20] Multinational enterprises that maintain facilities in more than one country can be broken down into two categories: vertical and horizontal. Vertical MNCs are firms that geographically fragment production into stages, typically on the basis of factor intensities. For example, an MNC would locate unskilled-labor intensive activities in unskilled-labor abundant countries, and skilled-labor intensive activities in skilled-labor abundant countries. Horizontal MNCs are firms that produce the same goods and services in multiple countries.

A significant amount of empirical research has been devoted to assessing the relative strength of these two effects. Blonigen reviews a large number of studies that generally find complementarity between trade and direct investment (i.e., increasing direct investment is associated with increasing trade).[21] While there is little evidence for substitution between U.S. exports and outbound foreign direct investment (FDI) in the aggregate, there may well be substitution at the level of specific products, particularly consumer goods. Blonigen has found such effects for Japanese foreign direct investment in the United States, as described below.

U.S. multinational firms engage in two different types of exporting; from the U.S. parent to foreign markets, and from their foreign affiliates to either the United States or third countries. Lipsey finds that affiliates' exports are large relative to exports from the U.S. parent. The share of global manufacturing exports from majority-owned affiliates of U.S. MNCs has increased, from 37.5 percent of total MNC exports in 1966 to 54.3 percent in 1990. Similar patterns of globalization are apparent in data on Japanese and Swedish multinationals, whose long-run trend is also increasingly to export from their affiliates rather than from the home market.[22] These findings do not necessarily mean that exporting from affiliates substitutes for exporting from U.S. parents; rather, they may characterize a situation in which exports from the parents of U.S. multinationals are increasing, and exports from the affiliates are increasing even more rapidly.

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[21] Bruce A. Blonigen, "In Search of Substitution Between Foreign Production and Exports," Working Paper, University of Oregon, 1999. Several of the studies cited use country or industry level data: Robert E. Lipsey and Merle Y. Weiss, "Foreign Production and Exports in Manufacturing Industries," *Review of Economics and Statistics (RES)*, vol. 63, No. 4 (1981), pp. 488-494; Edward M. Graham, "The Relationship Between Trade and Foreign Direct Investment in the Manufacturing Sector," in Dennis Encarnation, ed., *Does Ownership Matter? Japanese Multinationals in East Asia* (Oxford: Oxford University Press, and Clarendon Press, 1994); and Kimberly Clausing, "Does Multinational Activity Displace Trade?" *Economic Inquiry*, vol. 38, No. 2 (2000). Others use firm level data: Birgitta Swedenborg, *The Multinational Operations of Swedish Firms* (Stockholm: The Industrial Institute for Economic and Social Research, 1979); Robert E. Lipsey and Merle Y. Weiss, "Foreign Production and Exports of Individual Firms," *RES*, vol. 66, No. 2 (1984), pp. 304-307; Magnus Blömstrom, et. al., "U.S. and Swedish Direct Investment and Exports," in R.E. Baldwin, ed., *Trade Policy Issues and Empirical Analysis* (Chicago: University of Chicago Press, 1988); and Rene Belderbos and Leo Sleuwagen, "Tariff Jumping DFI and Export Substitution: Japanese Electronics Firms in Europe," *International Journal of Industrial Organization*, vol. 16, No. 5 (1998), pp. 601-638.

[22] Robert E. Lipsey, "Outward Direct Investment and the U.S. Economy."

What is the relationship between U.S. direct investment abroad and U.S. research and development (R&D)?

There is substantial evidence that firms and industries which are heavily R&D - intensive are more likely to engage in foreign direct investment. The ratio of R&D to sales, the average wage per employee (used as a measure of skilled labor intensity), and the share of managers in total employment have all been shown repeatedly to be correlated with the propensity of firms or industries to engage in FDI.[23] These results are usually interpreted as meaning that R&D causes FDI, even when the statistical tests used do not explicitly test for causation. There is relatively little direct evidence for or against the converse proposition, that U.S. firms or industries which do more investing abroad are more likely as a result to engage in R&D in the United States.

Most theories of the multinational firm suggest both that R&D may stimulate FDI, and that FDI may increase the incentives to do R&D. Fundamental to the internal logic of the multinational firm is the ability to profit from firm-specific knowledge generated at one location by employing that knowledge in a variety of locations. That is, centrally performed R&D can be used to enhance productivity or product diversity in a number of countries simultaneously; thus, R&D in a multicountry, multiplant firm can enjoy sharply increasing returns to scale. This is the implication of many of the theories of multinational firm behavior discussed in appendix B.[24] Since the returns to R&D are higher if they are exploited by means of FDI, this means both that R&D-intensive firms have greater incentives to do FDI, and that FDI-intensive firms have greater incentives to do R&D.

The theories just described are driven by the assumption that R&D is concentrated in the home country. Evidence on the geographic location of R&D within U.S. multinationals supports this assumption. Indeed, R&D is disproportionately concentrated in the U.S.-located parent operations of U.S. multinationals. In 1994, U.S. parents of non-bank multinational firms performed $91.6 billion of R&D, of which $81.3 billion was self-funded, with the difference primarily accounted for by government funding. Majority-owned, non-bank foreign affiliates performed R&D costing $11.9 billion, of which $10.4 billion was funded by the affiliates. The ratio of R&D in parents to R&D in majority-owned affiliates was

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[23] John H. Dunning, *Multinational Enterprises and the Global Economy* (1993), chapter 6, reviews this result extensively.

[24] For an early explicit mathematical formalization of this idea, which had antecedents in both the product-cycle framework of Raymond Vernon and the eclectic theory of John H. Dunning, see James R. Markusen, "Multinational, Multi-Plant Economies, and the Gains from Trade," *Journal of International Economics (JIE)*, vol. 16 (1984), Nos. 3-4, pp. 205-226.

thus 7.7 to 1. This compares with ratios of 3.3 to 1 for assets and employees, 2.8 to 1 for sales, and 2.4 to 1 for net income. Lipsey reported computations on earlier data consistent with this, noting that the ratio of R&D expenditures to sales in U.S. parent companies is significantly higher than that of foreign affiliates.[25]

One direct way in which the presence of affiliates stimulates U.S.-based R&D is through flows of funds internal to the firms themselves. Majority-owned foreign affiliates remitted $16.7 billion in royalties and license fees to U.S. parents while receiving less than $400 million of such payments from their parents. Thus, foreign operations provide a net subsidy to U.S.-based R&D.

Foreign Direct Investment in the United States (FDIUS)

How has foreign direct investment in the United States affected U.S. wages and employment levels?

In general, the data suggest that foreign-owned businesses in the United States are more capital-intensive and pay higher wages than their domestically owned counterparts, and do not affect wage inequality in the United States.[26] The literature also suggests that FDIUS has helped to ease some of the transitional and cyclical stresses on the U.S. economy during periods of recession.[27]

Using matched industry-by-state data from BLS and Census for 1987 and 1992, Feliciano and Lipsey demonstrated that foreign-owned firms pay wages nearly 30 percent higher, on average, than domestically-owned firms. Most of this disparity is due to differences in the industries toward which foreign-owned firms gravitate. Taking these differences into account, the wage premium associated with foreign ownership amounts to 5-7 percent in manufacturing and 9-10 percent for non-manufacturing employment. After further controlling for size of establishment and educational and gender characteristics of employees, there is no difference between manufacturing wages in foreign- and U.S.-owned establishments in the United States, but for non-manufacturing wages, a differential of 7-8 percent in favor of foreign-owned establishments remains.[28]

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[25] Robert E. Lipsey, "Outward Direct Investment and the U.S. Economy."

[26] Bruce A. Blonigen and Matthew J. Slaughter, "Foreign-Affiliate Activity and U.S. Skill Upgrading," NBER Working Paper No. 7040 (1999).

[27] Jane S. Little, "The Effects of Foreign Direct Investment on U.S. Employment during Recession and Structural Change," *New England Economic Review* (Nov./Dec. 1986), pp. 40-48.

[28] Zadia Feliciano and Robert E. Lipsey, "Foreign Ownership and Wages in the United States, 1987-1992," NBER Working Paper No. 6923 (1999).

Earlier, Lipsey found that foreign-owned establishments tend to gravitate towards lower-wage U.S. states, but to pay more than domestically owned firms in the same industry and state.[29] Zeile reported that foreign-owned U.S. establishments are larger, more capital-intensive, and pay higher wages than domestic plants, and attributed the foreign wage premium to the larger size of foreign-owned plants.[30] Blonigen and Figlio conducted a similar study at the county level and found that employment growth in foreign-owned firms in the local industry had an effect on wages that was seven times greater than employment growth in domestically owned firms in the same industry.[31] Further supporting these results, Aitken et al. note that in raw data for 1988, 1990, and 1991, value-added per employee on an industry-weighted basis was about 10 percent higher for foreign-owned establishments in the United States than for U.S. domestically owned establishments. A good portion of this difference is explained by the fact that the foreign-owned establishments are on average in more capital-intensive industries. But even after controlling for capital intensity, compensation per worker is higher in industries in which foreign-owned establishments account for the greatest share of total industry employment. This result holds true for both foreign-owned and domestically owned establishments in these industries, suggesting that productivity and wage-enhancing effects of foreign ownership may "spill over" into U.S.-owned firms.[32]

How has foreign direct investment in the United States affected U.S. exports and imports?

The arguments that inbound direct investment may either substitute for or complement U.S. imports are analogous to those made above for outbound direct investment and exports. If direct investment and trade are substitutes, then inbound direct investment should be associated with lower U.S. imports, and if they are complements, then inbound direct investment should be associated with higher U.S. imports. As noted above, most of the evidence leans toward complementarity; that is, foreign parents tend to ship intermediate goods to their U.S. affiliates, so that inbound direct investment and U.S. imports are positively correlated.

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[29] Robert E. Lipsey, "Foreign-Owned Firms and U.S. Wages," NBER Working Paper No. 4927 (1994).

[30] William J. Zeile, "Foreign Direct Investment in the United States: 1992 Benchmark Survey Results," *Survey of Current Business*, vol. 74, No. 7 (1994), pp. 154-186.

[31] Bruce A. Blonigen and David N. Figlio, "The Effects of Direct Foreign Investment on Local Communities," NBER Working Paper No. 7274 (1999).

[32] Brian Aitken, et. al., "Wages and Foreign Ownership: A Comparative Study of Mexico, Venezuela, and the United States," NBER Working Paper No. 5102 (1995).

Leichenko and Erickson found that FDIUS in manufacturing is positively related to improvements in state-level manufacturing export performance.[33] However, recent work suggests that there is an important distinction between final and intermediate goods in characterizing FDIUS and exports as substitutes or complements. For example, using highly disaggregated product-level data, Blonigen finds evidence of substitution for a set of Japanese-produced final consumer goods.[34] Import demand for these goods in the United States is lower when Japanese production in the United States is higher, after taking the effects of import prices and U.S. income into account. He finds evidence for both substitution and complementarity effects between affiliate production and exports of intermediate products, specifically Japanese automobile parts.[35] Increased production of autos by Japanese affiliates in the United States is positively associated with exports of Japanese auto parts to the United States (the complementarity effect), while increased production of auto parts themselves by Japanese affiliates in the United States is negatively associated with exports of Japanese auto parts in the United States (the substitution effect).

[33] Robin M. Leichenko and Rodney A. Erickson, "Foreign Direct Investment and State Export Performance," *Journal of Regional Science*, vol. 37, No. 2 (1997), pp. 307-29.

[34] E.g., microwave ovens, pianos, golf equipment, soy sauce, sake, etc.

[35] E.g., automotive mirrors, engine coils, car radios, and door locks. Bruce A. Blonigen, "In Search of Substitution Between Foreign Production and Exports."

Chapter 3
U.S. Direct Investment Abroad

This chapter considers questions regarding U.S. direct investment abroad (USDIA). The chapter examines the extent and growth of direct investment by U.S. firms overseas, the levels of employment and wages associated with USDIA, and the operations of foreign affiliates[1] of U.S. companies.

Which countries have attracted the most U.S. direct investment abroad?[2]

Developed OECD economies predominate, suggesting that U.S. firms invest abroad, in part, to establish footholds in large markets. In almost every year between 1990 and 1998, the same countries numbered among the top ten host countries of U.S. direct investment abroad. These included the United Kingdom, Canada, the Netherlands, Germany, Bermuda, France, Japan, Brazil, Switzerland, and Australia (figure 3-1).[3] U.S. direct investment in large OECD countries conforms to long-held investment patterns. Investment in Bermuda reflects that island's status as a major offshore financial center, and the large amount of capital moving through resident financial institutions. U.S. direct investment in Brazil, the only developing country in the top ten list, has increased dramatically since 1995, for three principal reasons. The Brazilian Government has privatized a number of state-owned firms, including electric power companies, banks, and retail establishments; the country's constitution was changed to permit foreign direct investment in the petroleum, shipping, telecommunications, and natural gas industries; and patent reform legislation increased incentives for direct investment.[4] In one of the largest single U.S. investments in Brazil, U.S.-based MCI

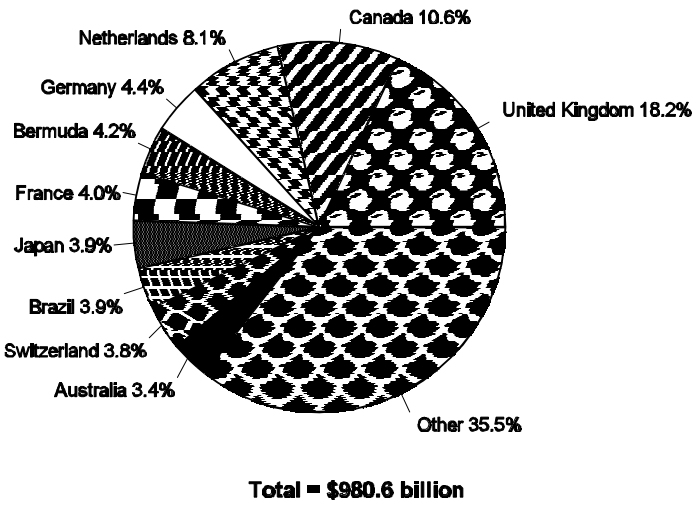
[1] Foreign affiliates are firms located outside the United States, in which there is investment of 10 percent or more by a single natural (or juridical) person who is a national of (or based in) the United States.

[2] Direct investment position is the sum of U.S. parents' equity holdings in their foreign affiliates (including retained earnings), plus the net outstanding loans that U.S. parents have made to these affiliates. Direct investment position is negative when the value of loans made by foreign affiliates to their U.S. parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

[3] Italy, and not Brazil, numbered among the top ten host countries of U.S. foreign direct investment stock in 1991.

[4] U.S. Department of Commerce (USDOC), "Brazil: Country Commercial Guide," found at Internet address http://www.stat-usa.gov/, retrieved May 25, 2000.

Figure 3-1
USDIA: U.S. direct investment position, by country, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 82-83.

Worldcom purchased Embratel, Brazil's long-distance telephone company, for $2.3 billion in 1998.[5]

Together, the top ten host countries accounted for 64.5 percent of the U.S. direct investment position abroad in 1998. The United Kingdom is the foremost host of U.S. direct investment stock, having accounted for $178.7 billion, or 18.2 percent, of the U.S. total in 1998 (table 3-1). Canada and the Netherlands also hosted significant shares of U.S. outbound investment stock, accounting for 10.6 percent and 8.1 percent of total outbound stock, respectively. However, there are indications that a new group of countries could eventually become important hosts of U.S. direct investment. With the exception of the United Kingdom, the Netherlands, and Brazil, U.S. outbound direct investment stock in each of the top ten host economies grew at a slower rate than total U.S. outbound stock during the 1990s.[6]

Countries in which U.S. outbound stock increased at a faster rate than total U.S. investment stock, and which hosted more than $10 billion in U.S. direct investment stock in 1998, include Ireland, Panama, Mexico, Hong Kong, Singapore, Luxembourg, and Argentina. Investors in

[5] U.S. Department of State telegram, "Telebras Sale is a Huge Success," message reference No. 002889, prepared by U.S. Embassy, Brasilia, July 31, 1998.

[6] USDOC, Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 113-114; Sept. 1998, pp. 152-153; and Sept. 1999, pp. 82-83.

Table 3-1
USDIA: Direct investment position[1] on a historical-cost basis, by country, 1990 and 1998

	1990		1998		Average annual growth, 1990-98	Standard deviation	Gross domestic product, 1998
	Outbound stock	Percent of total	Outbound stock	Percent of total			
	Millions of dollars		*Millions of dollars*		*Percent*		*Millions of dollars*
Argentina	2,531	0.6	11,489	1.2	21.3	10.4	298,131
Australia	15,110	3.5	33,676	3.4	10.8	7.5	359,935
Austria	1,113	0.3	3,838	0.4	19.0	23.8	21,088
Belgium	9,464	2.2	18,920	1.9	9.7	11.7	248,776
Bermuda	20,169	4.7	41,076	4.2	9.8	10.2	[2]2,253
Brazil	14,384	3.3	37,802	3.9	13.4	11.5	778,209
Canada	69,508	16.1	103,908	10.6	5.3	4.5	581,308
Chile	1,896	0.4	9,132	0.9	23.4	22.4	76,322
China	354	0.1	6,348	0.6	49.6	49.6	946,316
Finland	554	0.1	1,700	0.2	19.0	30.7	125,521
France	19,164	4.5	39,188	4.0	9.6	7.7	1,428,750
Germany	27,609	6.4	42,853	4.4	7.1	18.2	2,125,710
Hong Kong	6,055	1.4	20,802	2.1	17.1	10.1	163,562
Indonesia	3,207	0.7	6,932	0.7	11.2	14.8	94,156
Ireland	5,894	1.4	15,936	1.6	14.4	14.9	80,952
Israel	746	0.2	3,067	0.3	21.3	22.5	125,031
Italy	14,063	3.3	14,638	1.5	1.0	10.2	1,171,870
Japan	22,599	5.2	38,153	3.9	7.1	7.8	3,782,960
Korea	2,695	0.6	7,365	0.8	14.1	12.9	317,079
Luxembourg	1,697	0.4	14,930	1.5	38.0	50.4	17,263
Mexico	10,313	2.4	25,877	2.6	12.4	7.5	410,302
Netherlands	19,120	4.4	79,386	8.1	20.5	15.4	381,260
Netherlands Antilles	-4,501	-1.0	4,472	0.5	2597.7	6940.2	([3])
Norway	4,209	1.0	7,609	0.8	8.7	14.7	145,998
Panama	9,289	2.2	26,957	2.7	14.8	11.0	9,144
Singapore	3,975	0.9	19,783	2.0	22.5	8.2	82,773
South Africa	775	0.2	2,363	0.2	16.6	20.6	133,962
Spain	7,868	1.8	12,807	1.3	7.8	17.7	554,051
Sweden	1,787	0.4	6,053	0.6	33.5	87.1	226,492
Switzerland	25,099	5.8	37,616	3.8	5.7	10.2	263,631
Taiwan	2,226	0.5	4,937	0.5	10.6	6.3	267,186
United Kingdom Islands, Caribbean	5,929	1.4	15,713	1.6	14.1	16.5	([3])
United Kingdom	72,707	16.9	178,648	18.2	12.3	9.1	1,361,020
Eastern Europe[4]	127	0.0	8,143	0.8	81.2	71.6	[1]894,509
European Union	183,935	42.7	433,658	44.2	11.4	4.0	[1]8,088,591
All countries	430,521	100.0	980,565	100.0	10.9	2.5	21,282,101

[1] Direct investment position is the sum of foreign parents' equity holdings in their U.S. affiliates (including retained earnings), plus the net outstanding loans that foreign parents have made to these affiliates. Direct investment position is negative when the value of loans made by foreign affiliates to their U.S. parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

[2] Data is for 1997. Data for 1998 is not available.

[3] Not available.

[4] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Sources: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 113-114; USDOC, BEA, *Survey of Current Business*, Oct. 1998, pp. 152-153; USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 82-83; World Bank, found at Internet address http://www.worldbank.org/, retrieved Sept. 28, 2000; and calculations by the Commission.

Ireland have cited several reasons for their interest in the country, including a highly educated, English-speaking population; low corporate tax rates; recent infrastructure investment; and Ireland's participation in the European Monetary Union.[7] Major U.S. investments in Ireland during the 1990s include Intel's $2.5-billion wafer-fabrication factory, which manufactures the Pentium III chip; and Dell's personal computer factory, which produces all Dell PCs sold in Europe, Africa, and the Middle East. The two factories combined employ approximately 9,000 people.[8]

U.S. direct investment stock has also grown particularly rapidly in China, although this proceeds from a very small base, measuring $354 million in 1990. During 1990-98, U.S. outbound stock in China increased at an average annual rate of 49.6 percent.[9] U.S. direct investment stock also increased rapidly in Luxembourg and Sweden. U.S. outbound stock in Luxembourg grew at an average annual rate of 38.0 percent, reaching $14.9 billion in 1998,[10] while U.S. outbound stock in Sweden grew at an average annual rate of 33.5 percent during 1990-98, reaching $6.1 billion in 1998.[11] However, rapid investment flows to these countries did not have a significant impact on the total share of U.S. outbound investment during 1990-98, as each of these countries hosts a relatively small share of U.S. outbound investment. Specifically, Luxembourg accounted for 1.5 percent of total U.S. direct investment abroad in 1998, and China and Sweden, for 0.6 percent each.[12] See Appendix B for a discussion of the factors involved in determining the location of U.S. direct investment abroad.

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[7] Nick Kochan, "Roar of the Celtic Euro-tiger," *Euromoney*, Sept. 1999, found at Internet address http://www.proquest.umi.com/, retrieved May 18, 2000; and Rob Norton, "The Luck of the Irish," *Fortune*, Oct. 25, 1999, found at Internet address http://www.proquest.umi.com/, retrieved May 18, 2000.

[8] Norton, "The Luck of the Irish."

[9] The most rapid increase occurred in 1994, when U.S. investment stock increased by 174 percent, largely as a result of a 205-percent, or $454 million, increase in U.S. outbound stock in the Chinese petroleum sector.

[10] This growth rate was significantly affected by a 344-percent increase in U.S. direct investment stock in Luxembourg's finance industry during 1993.

[11] This growth rate was heavily influenced by a 677-percent rise in U.S. outbound stock in the Swedish manufacturing sector during 1995.

[12] USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 83-84; Sept. 1998, pp. 106-107; and Sept. 1999, pp. 53-54.

What proportion of U.S. outbound investment stock is in high-income vs. low- and middle-income countries? Has U.S. direct investment in low- and middle-income countries grown more rapidly than that in high-income countries?

Almost 80 percent of USDIA is located in high-income countries.

In 1998, the vast majority of U.S. outbound direct investment stock, 78.9 percent, was located in high-income[13] economies (figure 3-2), lending support to the idea that U.S. firms invest in large part to gain access to large consumer markets.[14] However, the share of outbound stock hosted by such countries has declined since 1990, when high-income countries accounted for 84.4 percent of U.S. direct investment stock. In contrast, the share of U.S. outbound investment stock located in middle- and low-income economies[15] has risen from 15.6 percent in 1990 to 21.1 percent in 1998. During 1990-98, U.S. outbound stock in high-income countries increased at an average annual rate of 10.0 percent, slower than the 10.9 percent growth rate of total U.S. direct investment abroad. U.S. direct investment stock in middle- and low- income economies grew at a faster-than-average rate of 15.1 percent.[16]

Although U.S. direct investment stock in middle- and low-income countries increased rapidly during 1990-98, the value of U.S. outbound stock in such countries remains relatively low. As noted, most of the top ten host countries of U.S. outbound stock are high-income countries. Brazil, classified as a middle-income economy, is the only exception. In 1998, Brazil hosted $38 billion, or 3.9 percent, of total U.S. direct investment stock. Panama, which hosted $27 billion in outbound stock, and Mexico, which hosted $26 billion in outbound stock, are the only other middle-income economies that accounted for significant shares of total U.S. direct investment abroad in 1998. Among low-income economies, Indonesia and China hosted the largest shares of total U.S. outbound stock. In 1998, Indonesia accounted for $6.9 billion, or 0.7 percent, of total U.S. outbound stock. China accounted for $6.3 billion, or 0.6 percent, of outbound stock.[17]

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[13] According to the World Bank, countries in which per capita GNP was greater than or equal to $9,361 in 1998 are considered high-income economies.

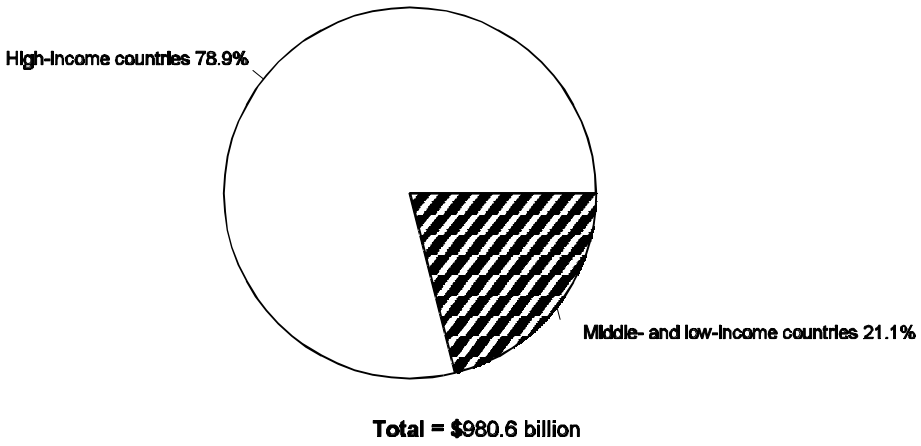
[14] Additionally, USDIA is concentrated in those high-income countries in which per capita GNP is greater than $20,000. In 1998, such countries accounted for 73.6 percent of total U.S. outbound investment stock.

[15] According to the World Bank, host countries in which 1998 per capita GNP fell between $761 and $9,360 are considered middle-income economies, and host countries in which 1998 per capita GNP was less than or equal to $760 are considered low-income economies.

[16] USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 83-84; Sept. 1998, pp. 106-107; and Sept. 1999, pp. 53-54.

[17] Ibid.

Figure 3-2
USDIA: Direct investment position, by country income level, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 82-83.

Recent foreign acquisitions by U.S. firms have also been concentrated in high-income countries. During 1990-97, U.S. acquisitions of firms based in high-income countries accounted for 71.9 percent of all foreign acquisitions by U.S. firms (figure 3-3). Acquisitions in middle- and low-income countries accounted for 18.5 percent and 9.4 percent of total U.S. acquisitions abroad, respectively.[18]

What is the U.S. direct investment position in Canada and Mexico? Has U.S. direct investment in NAFTA partners increased at a faster rate than total U.S. outbound investment?

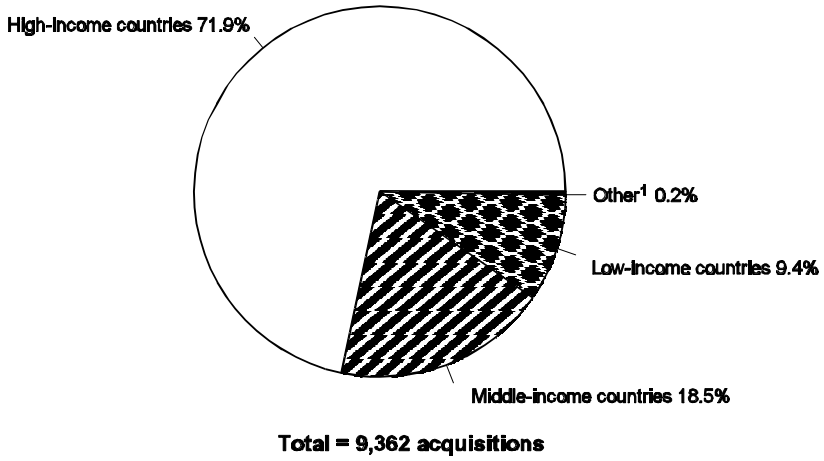
U.S. investment in Canada is much larger than in Mexico, but Mexican investment is growing faster.

The United States' direct investment position in NAFTA partners, Canada and Mexico, totaled $127.8 billion in 1998, $103.9 billion of which was invested in Canada. Their combined total accounted for 13.2 percent of total U.S. outbound investment stock (figure 3-4). During 1990-98, U.S. direct investment stock in these markets grew at a combined average annual rate of 6.3 percent, slower than the growth rate of total U.S. outbound stock during that same period.

In Canada, U.S. foreign direct investment stock increased at an average annual rate of 5.3 percent during 1990-98 (table 3-2). During 1990-93,

[18] KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

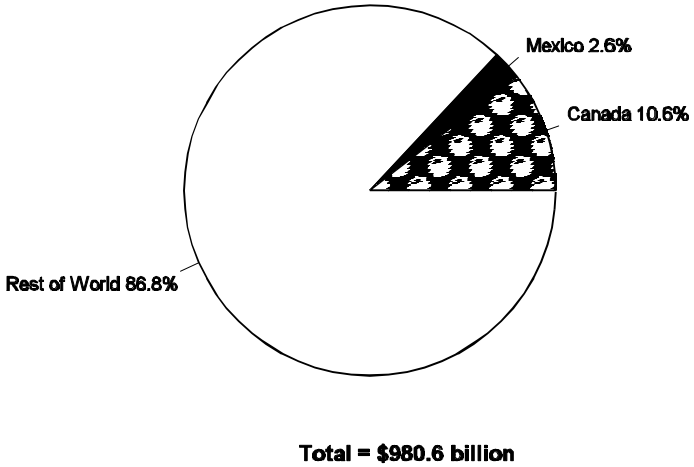
Figure 3-3
U.S. acquisitions of foreign firms, by country income level, 1990-97



[1] Includes acquisitions of firms based in two or more countries.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

Figure 3-4
USDIA: Direct investment position, NAFTA partners vs. rest of the world, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 82-83.

Table 3-2
USDIA: Average annual growth rate of U.S. investment stock in North American Free Trade Agreement partners,1990-93, 1993-98, and 1990-98

Country	1990-93	1993-98	1990-98
Canada	0.1	8.4	5.3
Mexico	14.0	11.5	12.4
Rest of World	10.6	12.4	11.7

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 113-14; USDOC, BEA, *Survey of Current Business*, Oct. 1998, pp. 152-53; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 82-83.

just prior to the entry into force of the NAFTA, U.S. outbound stock in Canada grew at an average annual rate of only 0.1 percent.[19] However, U.S. outbound stock in Canada increased at a significantly faster pace of 8.4 percent from year-end 1993[20] to year-end 1998.

U.S. outbound stock in Mexico grew at an average annual rate of 12.4 percent during 1990-98. During 1990-93, U.S. direct investment stock in Mexico increased at a 14.0-percent average annual rate. This growth rate fell to 11.5 percent annually during 1993-98. The slower growth in this later period is likely a result of the 1994 Mexican peso crisis. U.S. direct investment stock in Mexico declined by 0.6 percent in the year following the crisis as peso-denominated assets became less valuable in U.S. dollar terms, then increased at an average annual rate of 15.6 percent during 1995-98.[21]

Between 1990 and 1998, the industry distribution of U.S. outbound stock in Canada did not change substantially (table 3-3 and figure 3-5). In both years, manufacturing accounted for slightly less than one-half of U.S. outbound stock in Canada, and the finance and petroleum industries accounted for the second- and third-largest segments of such stock. Overall, no industry's share of total U.S. direct investment stock in Canada changed by more than 5 percentage points between 1990 and 1998. In contrast, the composition of U.S. direct investment stock in Mexico changed significantly between 1990 and 1998 (table 3-4 and figure 3-6). U.S. investment in the Mexican manufacturing sector increased rapidly during the period, but investment in services grew

[19] However, the U.S.-Canada Free Trade Agreement had already been in effect since 1989.

[20] The NAFTA agreement went into effect on January 1, 1994.

[21] It is notable that U.S. investment stock in countries other than Canada and Mexico also grew at a faster rate subsequent to 1993. During 1990-93, U.S. direct investment stock in markets outside of the NAFTA increased at an average annual rate of 10.6 percent, while such investment increased at an average annual rate of 12.4 percent from year-end 1993 to year-end 1998. USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 113-114; Sept. 1998, pp. 152-153; and Sept. 1999, pp. 82-83.

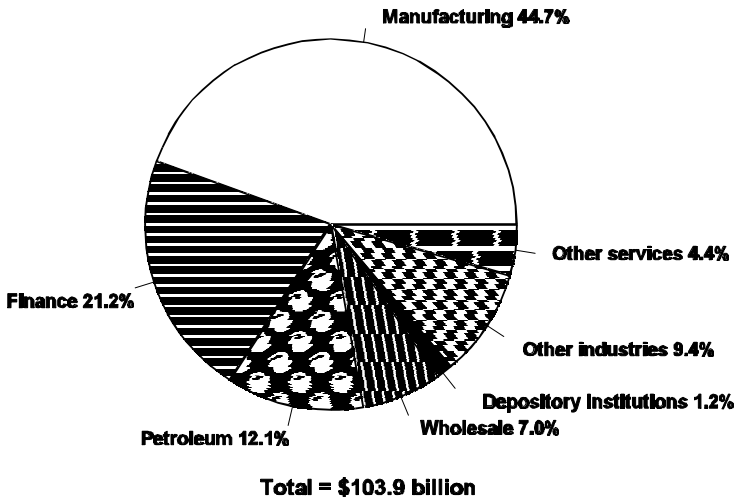
Table 3-3
USDIA: U.S. direct investment position in Canada, by industry, 1990 and 1998

Industry	1990		1998	
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*
Petroleum	11,388	17.0	12,559	12.1
Manufacturing	31,790	47.4	46,428	44.7
Wholesale trade	4,138	6.2	7,265	7.0
Depository institutions	1,032	1.5	1,203	1.2
Finance	11,378	17.0	22,057	21.2
Services	1,927	2.9	4,598	4.4
Other[1]	5,379	8.0	9,799	9.4
Total	67,033	100.0	103,908	100.0

[1] Due to data limitations, in this instance, "other industries" includes agriculture; mining; construction; transportation; communication; electric, gas, and sanitary services; and retail trade.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1992, p. 124; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, p. 66.

Figure 3-5
USDIA: U.S. direct investment position in Canada, by industry, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 66.

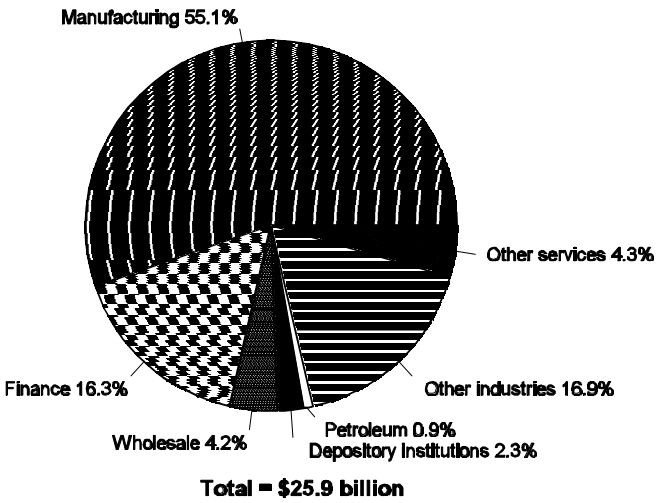
Table 3-4
USDIA: U.S. direct investment position in Mexico, by industry, 1990 and 1998

Industry	1990		1998	
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*
Petroleum	80	0.9	235	0.9
Manufacturing	7,196	76.6	14,267	55.1
Wholesale trade	508	5.4	1,092	4.2
Depository institutions	39	0.4	591	2.3
Finance	400	4.3	4,206	16.3
Services	149	1.6	1,108	4.3
Other[1]	1,025	10.9	4,378	16.9
Total	9,398	100.0	25,877	100.0

[1] Due to data limitations, in this instance, "other industries" includes agriculture; mining; construction; transportation; communication; electric, gas, and sanitary services; and retail trade.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug . 1992, p. 124; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, p. 66.

Figure 3-6
USDIA: U.S. direct investment position in Mexico, by industry, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 66.

even more quickly. By 1998, manufacturing had decreased from 76.6 percent of total U.S. outbound investment in Mexico to 55.1 percent of the total. Underlying this trend was heavy investment in the Mexican finance industry. This industry's share of total U.S. direct investment stock in Mexico increased from 4.3 percent in 1990 to 16.3 percent in 1998. The share of total U.S. direct investment stock in Mexico that was invested in other industries increased from 10.9 percent in 1990 to 16.9 percent in 1998. Prominent among these were certain infrastructure service industries, including the transportation, communication, and electric, gas, and sanitary service industries.[22]

In which countries did U.S. companies acquire the greatest number of firms during 1990-97?

According to data compiled by KPMG Corporate Finance,[23] U.S. firms merged with or acquired a total of 9,362 foreign entities during 1990-97, with the greatest number of acquisitions in the United Kingdom (figure 3-7, table 3-5). U.S. acquisitions of British firms numbered 1,511, accounting for 16.1 percent of the total. Other countries in which U.S. firms acquired a large number of entities include Canada, France, Germany, and China, which accounted for U.S. acquisitions numbering 1,171, 666, 646, and 486, respectively. An analysis of the value of U.S. acquisitions abroad yields similar results. U.S. acquisitions in the United Kingdom accounted for $76.9 billion, or 22.1 percent, of the total value of U.S. acquisitions during 1990-97, while the value of U.S. acquisitions in Canada, Australia, France, and China account for 10.7 percent, 7.1 percent, 5.0 percent, and 4.0 percent, respectively, of total U.S. acquisitions (figure 3-8). It is not surprising that the countries which account for a significant share of U.S. outbound investment also account for a large share of foreign acquisitions by U.S. firms. In addition, the high number and value of U.S. acquisitions in China corresponds to the rapid growth of U.S. outbound stock in that country.[24]

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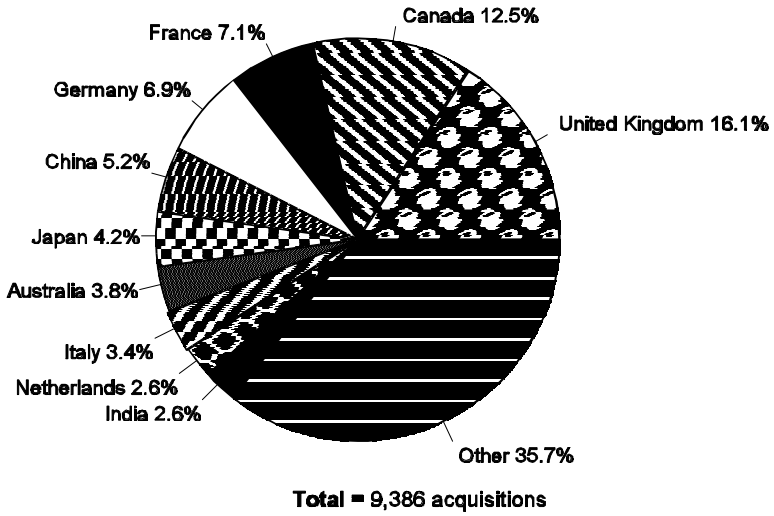
[22] Ibid.

[23] This data is compiled by KPMG Corporate Finance from newspaper reports. Any merger or acquisition not announced in the major financial press would not be included. In addition, when the value of a merger or acquisition is not announced in the press, the database records a value of zero for that transaction, so the total value of the transactions likely is understated in many instances. Finally, the value of mergers or acquisitions as announced in the press may not correspond exactly to the final value of the transaction on the day it is signed, as the final value of such transactions is often dependent on a company's share price, which fluctuates daily.

[24] KPMG Corporate Finance, cross-border mergers and acquisitions database.

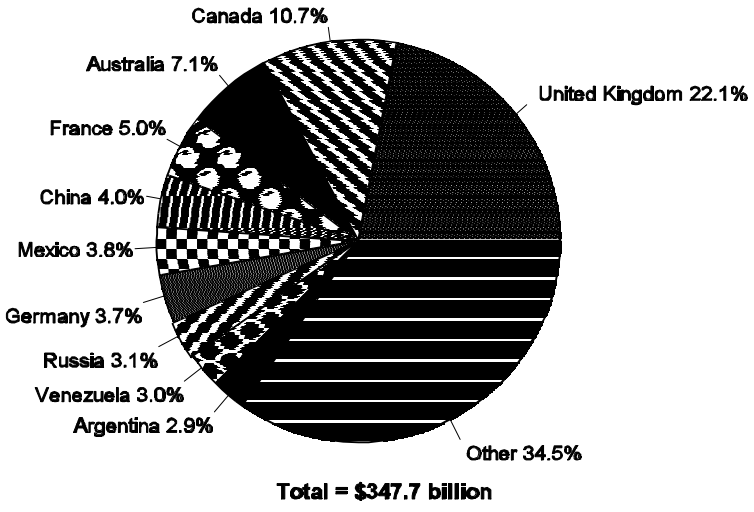
Figure 3-7
Number of U.S. acquisitions of foreign firms, by country,1990-97[1]



[1] Total may not equal 100 percent due to rounding.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

Figure 3-8
Value of U.S. acquisitions of foreign firms, by country, 1990-97[1]



[1] Total may not equal 100 percent due to rounding.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

Table 3-5
U.S. acquisitions, by selling country, 1990-97

Selling country	Number of deals	Percent of total deals	Value of deals
			Millions of dollars
Algeria	7	0.1	1,412
Argentina	202	2.2	10,153
Australia	353	3.8	24,554
Austria	30	0.3	1,043
Azerbaijan	14	0.2	1,145
Bahamas	7	0.1	1,062
Belgium	103	1.1	3,120
Bermuda	21	0.2	2,151
Bolivia	7	0.1	551
Brazil	230	2.5	7,002
Bulgaria	16	0.2	90
Canada	1,171	12.5	37,267
Chile	40	0.4	2,656
China	486	5.2	13,876
Colombia	17	0.2	662
Costa Rica	6	0.1	4
Czech, Republic of	43	0.5	470
Czechoslovakia	35	0.4	824
Denmark	91	1.0	3,697
Dominican Republic	4	0.0	4
Germany	10	0.1	0
Ecuador	5	0.1	0
Egypt	8	0.1	238
Estonia	4	0.0	2
Finland	76	0.8	273
France	666	7.1	17,530
Gabon	4	0.0	11
Germany	646	6.9	12,987
Greece	15	0.2	85
Hong Kong	114	1.2	3,517
Hungary	98	1.1	1,056
India	240	2.6	4,635
Indonesia	58	0.6	2,348
Ireland	69	0.7	2,938
Israel	64	0.7	2,316
Italy	321	3.4	8,670
Jamaica	12	0.1	174
Japan	389	4.2	5,953
Kazakhstan	19	0.2	943
Korea, Republic of	54	0.6	1,162
Lithuania	5	0.1	58
Luxembourg	10	0.1	604
Malaysia	52	0.6	1,978
Mexico	220	2.4	13,170
Morocco	6	0.1	11
Myanmar	6	0.1	159
Netherlands	241	2.6	6,902
Netherlands Antilles	4	0.0	214
New Zealand	84	0.9	5,569
Nigeria	5	0.1	285
Norway	64	0.7	2,999
Pakistan	7	0.1	1,889

Table 3-5--*Continued*
U.S. acquisitions by selling country, 1990-97

Selling country	Number of deals	Percent of total deals	Value of deals
			Millions of dollars
Peru	36	0.4	1,896
Philippines	23	0.3	1,571
Poland	95	1.0	1,811
Portugal	35	0.4	1,939
Puerto Rico	19	0.2	1,627
Qatar	4	0.0	668
Romania	20	0.2	117
Russia	84	0.9	10,928
Saudi Arabia	7	0.1	32
Singapore	99	1.1	2,379
Slovak, Republic of	4	0.0	0
Slovenia	5	0.1	127
South Africa	75	0.8	1,922
Soviet Union	73	0.8	737
Spain	206	2.2	4,539
Sweden	63	0.7	1,733
Switzerland	112	1.2	6,704
Taiwan	56	0.6	1,158
Thailand	52	0.6	1,816
Trinidad & Tobago	12	0.1	729
Turkey	26	0.3	661
Ukraine	19	0.2	78
United Kingdom	1,511	16.1	76,928
Uruguay	4	0.0	19
Uzbekistan	4	0.0	164
Venezuela	42	0.5	10,400
Vietnam	32	0.3	863
Virgin Islands (British)	5	0.1	69
Yugoslavia	9	0.1	55
Other	102	1.1	3,797
Total[1]	9,362	[2]99.0	350,940

[1] This data is compiled from press reports. Figures may not add to totals, due to the difficulty of identifying the industry in some corporate merger announcements, and to the fact that the values cited in press reports are subject to change due to fluctuations in corporate share prices and other factors.

[2] Totals may not equal 100 percent due to rounding.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

In which countries did U.S.-owned foreign affiliates record the highest sales? In which countries are foreign affiliate sales experiencing the most rapid growth?

Foreign affiliates recorded the highest sales in the United Kingdom, Canada, and Germany.

In 1997, U.S.-owned foreign affiliates recorded sales totaling $2,356.4 billion. Foreign affiliates in the United Kingdom registered the highest sales, accounting for $337.9 billion, or 14.3 percent, of total foreign affiliate sales (figure 3-9, table 3-6). Other countries in which U.S.-owned foreign affiliates recorded high sales included Canada, Germany, Japan, France, and the Netherlands, which accounted for 11.6 percent, 10.0 percent, 8.7 percent, 5.6 percent, and 5.5 percent of total foreign affiliate sales, respectively. However, with the exception of the United Kingdom and the Netherlands, annual sales in these countries are increasing more slowly than the average annual rate of 6.9 percent recorded for total foreign affiliate sales during the period. Countries that accounted for more than 2 percent of foreign affiliate sales in 1997, and in which such sales increased at a faster-than-average annual rate during 1990-97, include Mexico, Singapore, Brazil, and Hong Kong.[25]

Sales by U.S.-owned foreign affiliates have grown particularly rapidly in China, although this proceeds from a relatively small base, measuring $1.4 billion in 1990. During 1990-97, foreign affiliate sales in China increased at an average annual rate of 42.9 percent. Sales by U.S.-owned foreign affiliates also increased rapidly in the United Kingdom's Caribbean territories, Chile, and Argentina. Foreign affiliate sales in the United Kingdom's Caribbean territories grew at an average annual rate of 36.0 percent, reaching $7.4 billion in 1997, while sales in Chile and Argentina increased at average annual rates of 25.2 percent and 24.1 percent, respectively. However, rapid foreign affiliate sales growth in these three locations did not have a significant impact on total value of sales by U.S.-owned foreign affiliates, as each of these locations accounted for no more than 1 percent of total foreign affiliate sales in 1997.[26]

What impact did the Asian financial crisis have on U.S. outbound direct investment flows? Did it have any measurable impact on the level of U.S. investment stock in the affected countries?

The Asian financial crisis began to emerge in July 1997. In both 1997 and 1998, the level of U.S. outbound investment flows to the

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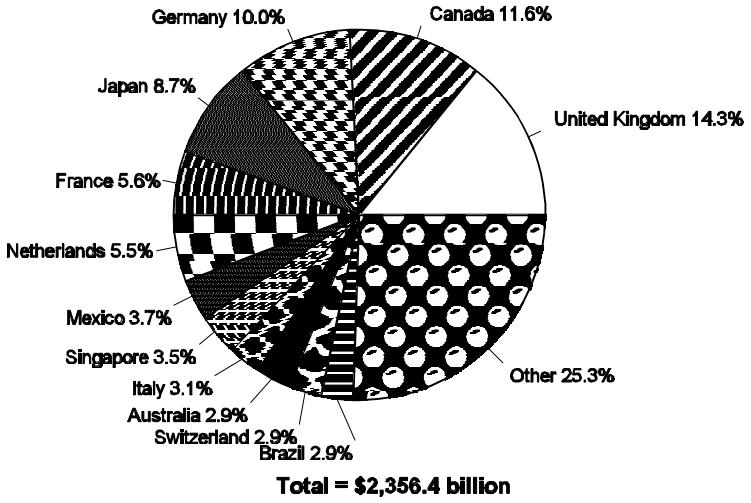
[25] USDOC, BEA, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates (USDIA)*, annual publication, 1990-97.

[26] USDOC, BEA, *USDIA*, 1990-97.

Figure 3-9
USDIA: Foreign affiliate sales by country, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-1.

Asia/Pacific region declined, reversing the increases observed during the majority of the 1990s (figure 3-10).[27] Likewise, the growth rate of U.S. outbound stock in the Asia/Pacific region slowed significantly, from an annual average of 13.7 percent during 1990-96 to 5.1 percent in 1997, before rising again to 10.4 percent in 1998.[28]

An analysis of investment flows by country more clearly reveals the effect of the Asian financial crisis on U.S. outbound investment. In 1997, the level of U.S. investment flows declined to those countries that were most severely impacted by the crisis -- Indonesia, Korea, Malaysia, the Philippines, and Thailand (figures 3-11 and 3-12). Significant decreases were observed in each country except Korea, to which U.S.

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[27] The level of U.S. outbound investment flows to the Asia/Pacific region also declined significantly in 1991. This was largely a result of a significant decrease in U.S. outflows to the Japanese electric and electronic equipment industry, from $274 million in 1990 to -$1.0 billion in 1991, and a significant decrease in U.S. outflows to "other industries" in New Zealand, from $2.1 billion in 1990 to -$439 million in 1991. In this instance, "other industries" includes agriculture; mining; construction; transportation; communications; electric, gas, and sanitary services; and retail trade. Outbound investment flows are negative when net interest collected by U.S. parents from their affiliates exceeds equity flows to those affiliates.

[28] USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85. For more information on the Asian financial crisis, see USDOC, Economics and Statistics Administration, "The Asian Financial Crisis: How Did It Happen?" *Business America*, July 1998, pp. 30-32.

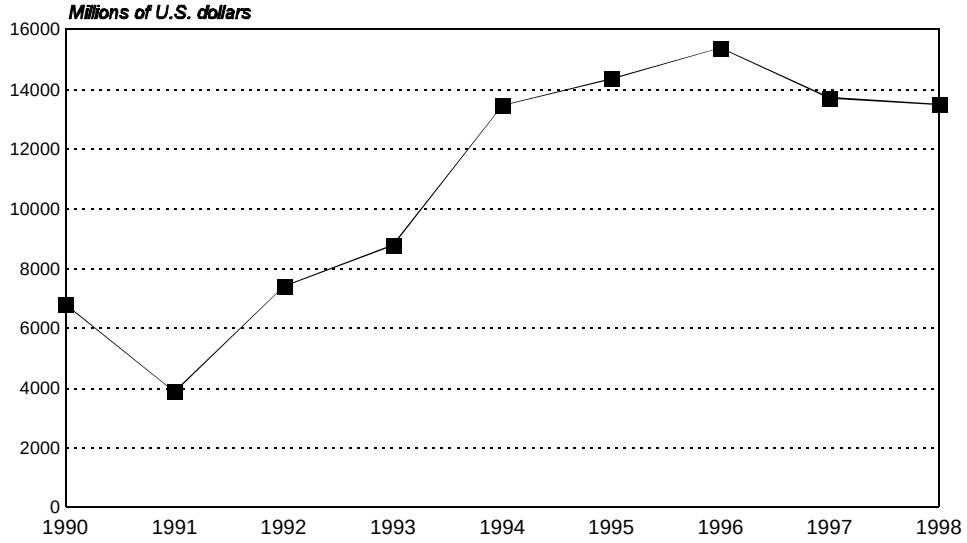
Table 3-6
USDIA: Foreign affiliate sales, by country, 1990 and 1997

	1990	1997	Percent of total, 1997	Average annual growth	Standard deviation
	Millions of dollars		*Percent*		
Argentina	5,596	24,019	1.0	24.1	15.0
Australia	59,129	68,519	2.9	2.2	4.9
Austria	9,355	14,031	0.6	6.7	12.1
Belgium	39,231	53,501	2.3	4.9	8.5
Bermuda	18,048	17,224	0.7	0.6	15.0
Brazil	44,385	67,380	2.9	7.4	15.7
Canada	189,402	274,205	11.6	5.5	4.8
Chile	2,392	10,931	0.5	25.2	15.4
China	1,409	14,989	0.6	42.9	27.7
Finland	3,555	5,074	0.2	6.5	17.0
France	102,242	130,883	5.6	3.9	7.6
Germany	165,436	234,508	10.0	5.4	7.9
Hong Kong	19,223	49,517	2.1	14.6	4.4
Indonesia	7,624	10,350	0.4	4.6	5.1
Ireland	13,560	30,339	1.3	12.7	10.5
Israel	3,008	8,499	0.4	16.2	6.2
Italy	59,539	74,035	3.1	3.6	8.7
Japan	164,969	205,072	8.7	3.4	7.1
Korea, Republic of	12,206	22,419	1.0	9.9	14.0
Luxembourg	1,808	3,545	0.2	10.9	13.6
Mexico	32,311	88,063	3.7	15.9	10.8
Netherlands Antilles	2,515	838	5.5	8.9	8.7
Netherlands	72,975	130,053	5.5	8.9	8.7
Norway	10,867	14,193	0.6	4.5	10.8
Panama	1,778	([1])	0.1	4.8	7.8
Singapore	27,544	82,114	3.5	17.2	8.6
South Africa	4,159	11,552	0.5	17.3	20.1
Spain	33,943	44,555	1.9	4.5	10.6
Sweden	12,386	19,490	0.8	8.2	19.4
Switzerland	53,239	67,620	2.9	4.0	9.9
Taiwan	9,478	17,554	0.7	9.9	12.2
United Kingdom Islands, Caribbean	973	7,390	0.3	36.0	26.9
United Kingdom	214,493	337,907	14.3	7.0	8.5
Eastern Europe[1]	628	22,956	1.0	76.8	64.3
European Union	783,069	1,099,242	46.6	5.3	8.2
All countries	1,493,426	2,356,416	100.0	6.9	5.4

[1] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

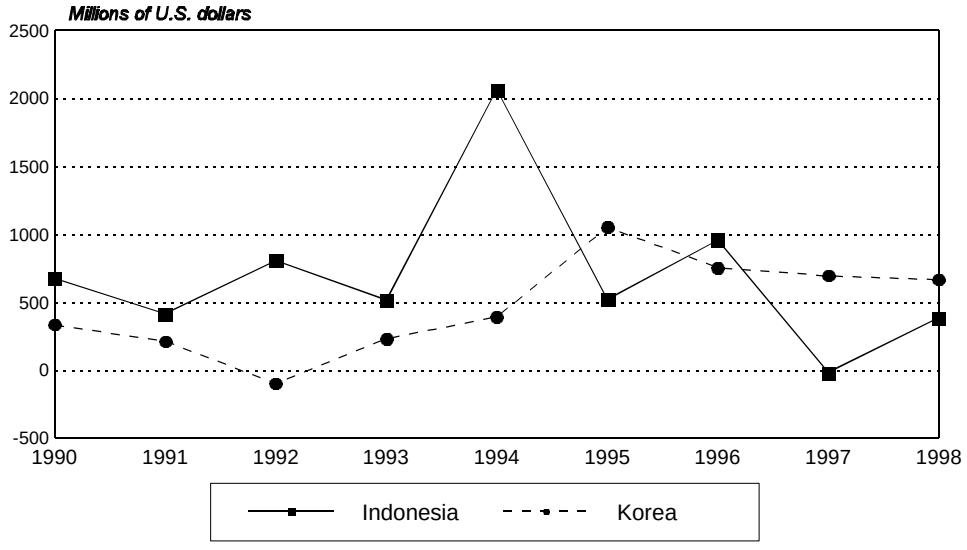
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates,* annual publication, various issues, table II-A-1.

Figure 3-10
USDIA: U.S. direct investment flows to the Asia/Pacific region, 1990-98



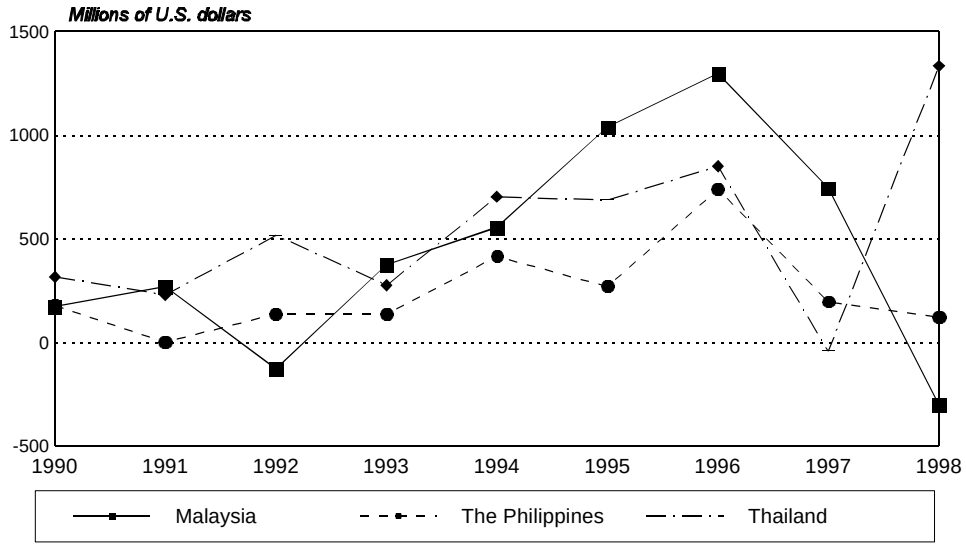
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 83; and Aug. 1995, p. 114.

Figure 3-11
USDIA: U.S. direct investment flows to Indonesia and Korea, 1990-98



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 83; and Aug. 1995, p. 114.

Figure 3-12
USDIA: U.S. direct investment flows to Malaysia, the Philippines, and Thailand, 1990-98



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 83; and Aug. 1995, p. 114.

outflows experienced a more moderate decline. U.S. investment flows to Korea, Malaysia, and the Philippines continued to decline in 1998, while flows to Indonesia and Thailand rebounded, primarily as a result of increased investment in both countries' petroleum industries and in Thailand's wholesale trade industry.[29]

Data on U.S. investment stock also illustrate the impact of the Asian financial crisis. After rapid growth during 1990-96, U.S. outbound stock in Indonesia, Korea, the Philippines, and Thailand decreased in 1997, while outbound stock in Malaysia increased by 15.2 percent, significantly slower than the 27.0-percent average annual growth rate registered during 1990-96 (table 3-7). The decreases observed in Indonesia, Korea, the Philippines, and Thailand, as well as the slower-than-average growth rate observed in Malaysia, resulted from the decreases in Asian currency values that stemmed from the crisis in these five countries.[30]

[29] USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85.

[30] The U.S. dollar value of an investment denominated in a foreign currency will decrease as the value of that currency decreases against the dollar. USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85.

Table 3-7
USDIA: U.S. direct investment position in Indonesia, Korea, Malaysia, the Philippines, and Thailand, 1990-98

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average annual growth, 1990-96	Average annual growth, 1990-98	Standard deviation 1990-98
	Millions of dollars									*Percent*		
Indonesia	3,207	3,826	4,384	4,770	6,355	6,777	8,322	6,664	6,932	17.6	11.2	14.8
Korea	2,695	2,900	2,912	3,124	4,334	5,557	6,508	6,430	7,365	16.6	14.1	12.9
Malaysia	1,466	1,774	1,596	1,988	3,148	4,237	5,663	6,522	6,193	27.0	21.5	20.7
Philippines	1,355	1,395	1,666	1,945	2,484	2,719	3,541	3,295	3,192	17.8	12.1	12.9
Thailand	1,790	2,025	2,594	2,947	3,585	4,283	5,000	3,946	5,721	18.8	17.1	17.4
All countries	430,521	467,844	502,063	559,733	612,893	699,015	795,195	865,531	980,565	10.8	10.9	2.5

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business,* Aug. 1995, pp. 113-14; USDOC, BEA, *Survey of Current Business*, Oct. 1998, pp. 152-53; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 82-83.

Have U.S. direct investors abroad focused on manufacturing or services? How fast has U.S. direct investment in these sectors grown?

The service sector accounts for almost 60 percent of USDIA stock.

The service sector accounts for the largest share of total U.S. outbound direct investment stock. In 1998, U.S. outbound stock in services accounted for $578.2 billion, or 59.0 percent, of total U.S. outbound investment stock (table 3-8, figure 3-13). The service sector's share of total U.S. outbound investment increased significantly from 1990, when investment in the service sector accounted for 47.3 percent of total outbound investment. In contrast, the share of total outbound stock accounted for by the manufacturing sector decreased from 39.5 percent in 1990 to 31.1 percent in 1998.[31]

Direct investment stock in the service sector increased at an average annual rate of 14.0 percent during 1990-98. Such growth was higher than the 10.9-percent average annual growth rate of total U.S. outbound investment stock. During 1990-98, U.S. direct investment stock in the manufacturing sector registered a slower-than-average annual growth rate of 7.7 percent. The pattern of U.S. cross-border acquisitions also illustrates the predominance of service sector investment in the 1990s, as foreign telecommunication, financial, and energy markets underwent privatization and liberalization. During 1990-97, acquisitions of service firms accounted for 60.0 percent of all U.S. acquisitions of foreign firms, while acquisitions of manufacturing and petroleum firms respectively accounted for 33.5 percent and 4.4 percent of U.S. acquisitions abroad (figure 3-14).[32]

An analysis of U.S. direct investment assets by sector yields similar results. In 1997, the service sector accounted for $2.4 trillion, or 65.0 percent, of total outbound assets (figure 3-15). The service sector's share of total U.S. outbound assets has increased substantially from 1990, when it accounted for $749 billion, or 48.0 percent, of such assets. In contrast, the manufacturing sector's share of total outbound assets decreased from 37.1 percent in 1990 to 26.0 percent in 1997. During 1990-97, U.S. direct investment assets increased at an average annual rate of 16.5 percent, faster than the 11.9-percent growth rate of total outbound assets. At the same time, assets in the manufacturing sector increased at a slower-than-average rate of 6.4 percent.[33]

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[31] Ibid.

[32] KPMG Corporate Finance, cross-border mergers and acquisitions database.

[33] USDOC, BEA, *USDIA*, 1990-97.

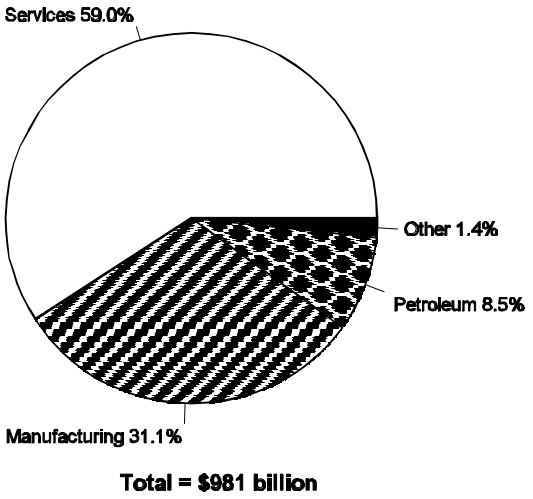
Table 3-8
USDIA: Direct investment position[1] on a historical-cost basis, by industry, 1990 and 1998

Industry	1990		1998		Average annual growth	Standard deviation
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*	*Percent*	
Petroleum	51,155	11.9	83,515	8.5	6.4	3.2
Manufacturing	170,164	39.5	304,690	31.1	7.7	5.7
Food and kindred products	15,570	3.6	33,871	3.5	10.5	8.5
Chemicals	37,988	8.8	83,589	8.5	10.7	8.8
Pharmaceuticals	9,314	2.2	31,911	3.3	18.8	23.6
Primary and fabricated metals	10,520	2.4	17,098	1.7	7.2	14.8
Machinery	30,875	7.2	34,755	3.5	1.9	9.2
Other manufacturing	75,212	17.5	135,377	13.8	7.7	5.2
Electronic and other electric equipment	15,550	3.6	34,531	3.5	11.1	12.6
Textile products and apparel	1,761	0.4	3,124	0.3	7.6	5.4
Transportation equipment	21,522	5.0	35,615	3.6	7.0	9.9
Miscellaneous manufacturing	36,379	8.4	62,107	6.3	7.0	4.8
Services	203,652	47.3	578,170	59.0	14.0	2.2
Wholesale trade	43,681	10.1	75,188	7.7	7.3	7.3
Retail trade	6,996	1.6	13,028	1.3	8.2	5.6
Finance (except banking), insurance, and real estate	109,657	25.5	337,600	34.4	15.2	3.7
Finance (except banking)	23,297	5.4	98,962	10.1	21.1	18.4
Insurance	18,547	4.3	46,963	4.8	12.6	7.5
Real estate	1,876	0.4	1,987	0.2	6.6	32.2
Holding companies	65,937	15.3	189,688	19.3	14.2	3.5
Depository institutions/banking	20,670	4.8	42,029	4.3	9.5	7.6
Other services	13,446	3.1	52,514	5.4	18.9	9.2
Motion pictures, including television tape and film	2,019	0.5	2,570	0.3	4.9	19.2
Agricultural services	1	0.0	7	0.0	290.6	741.0
Oil and gas field services	1,671	0.4	7,598	0.8	21.9	16.6
Coal mining services, metal mining services, and nonmetallic minerals services	71	0.0	66	0.0	-213.8	538.5
Construction	706	0.2	1,504	0.2	13.2	28.6
Transportation	2,328	0.5	7,536	0.8	17.1	16.7
Communications and public utilities	4,425	1.0	41,100	4.2	33.0	15.2
Communications	2,925	0.7	16,284	1.7	24.1	6.2
Electric, gas, and sanitary services	1,500	0.3	24,816	2.5	50.6	48.5
Agriculture (except agricultural services)	614	0.1	612	0.1	-12.8	45.0
Mining (except coal mining services, metal mining services, and nonmetallic minerals services)	4,936	1.1	13,578	1.4	14.6	17.1
All industries	430,521	100.0	980,565	100.0	10.9	2.5

[1] Direct investment position is the sum of foreign parents' equity holdings in their U.S. affiliates (including retained earnings), plus the net outstanding loans that foreign parents have made to these affiliates. Direct investment position is negative when the value of loans made by U.S. affiliates to their foreign parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

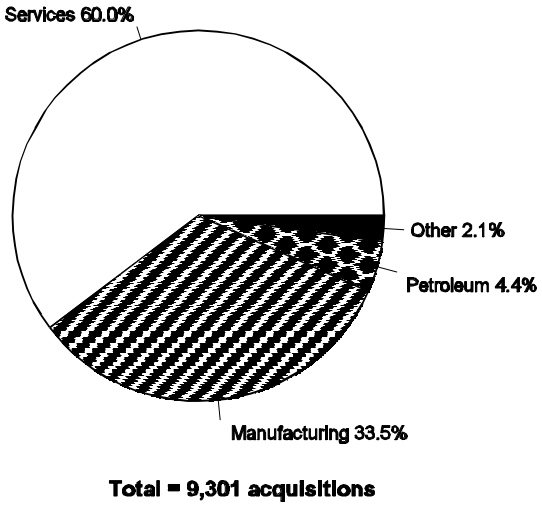
Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 115-16; USDOC, BEA, *Survey of Current Business*, Oct. 1998, pp. 154-55; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 84-85.

Figure 3-13
USDIA: U.S. direct investment position, by sector, 1998



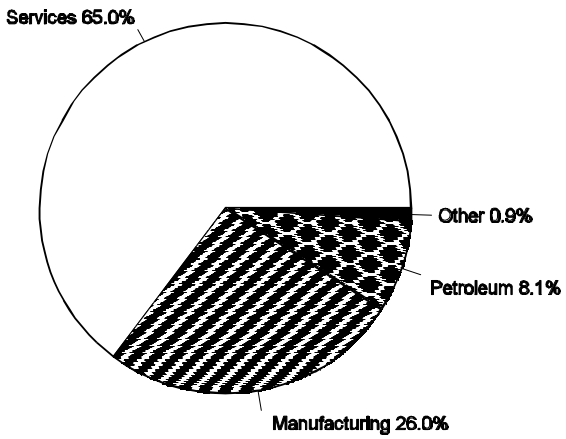
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 84-85.

Figure 3-14
U.S. acquisitions of foreign firms, by sector, 1990-97



Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

Figure 3-15
USDIA: Assets of foreign affiliates, by industry, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-2.

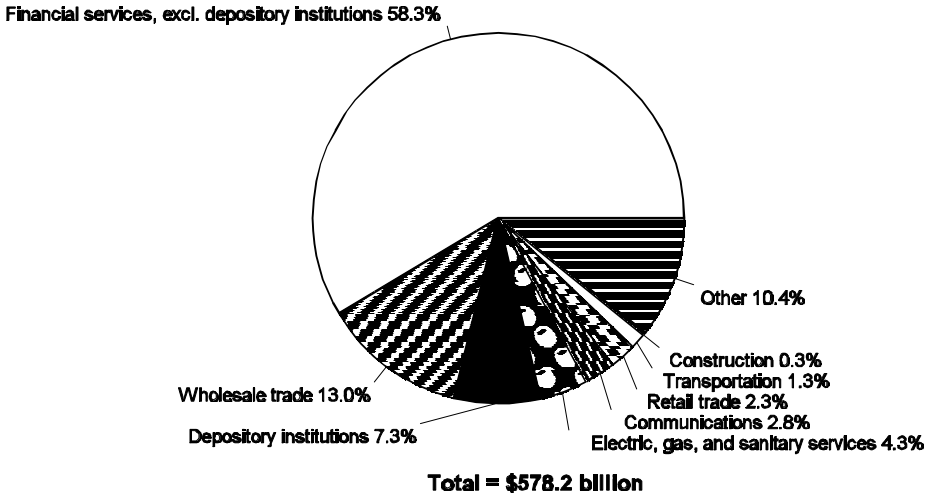
On which industries have U.S. direct investors focused?

The financial services industry accounts for the largest single share of outbound direct investment stock. Financial services comprise business franchising, insurance, real estate, holding companies,[34] and other financial services. In 1998, outbound investment stock in the financial services industry measured $337.6 billion, accounting for 58.3 percent of U.S. investment in the service sector, and 34.4 percent of total U.S. outbound investment (see table 3-8, figure 3-16). Countries that hosted significant shares of total U.S. direct investment in financial services in 1998 included the United Kingdom (19.5 percent), the Netherlands (12.7 percent), Bermuda (11.7 percent), and Panama (7.4 percent) (figure 3-17).[35] Strong direct investment in the financial services industry reflects

[34] The largest share (50.0 percent) of outbound U.S. investment in the financial services industry is directed toward holding companies, a total of $189.7 billion in 1998. Holding companies are designed primarily for tax purposes, to channel funds to operating companies in a wide variety of industries. Unlike direct investment in foreign banks or insurance firms, it is likely that funds invested in holding companies overseas will not remain in the finance industry, so the level of USDIA in financial services is overstated. However, due to data collection limitations, the final country or industry destination of these investment funds is unknown.

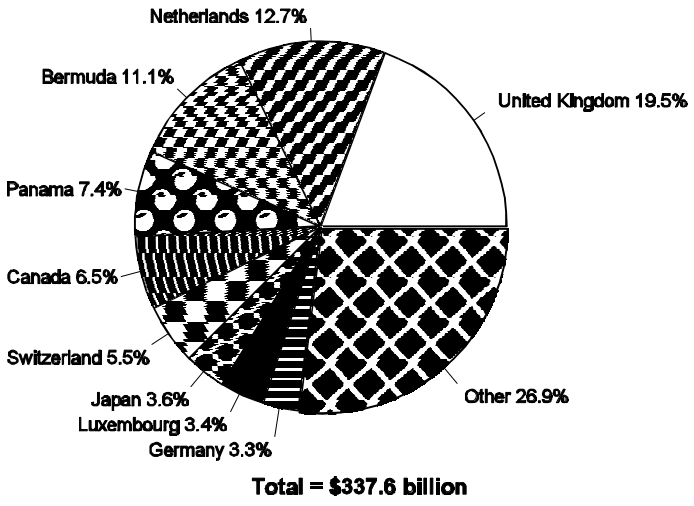
[35] Bermuda and Panama are offshore financial markets. A significant share of the direct investment flows to these countries is reinvested in third countries. BEA has no way to discern the final destination of these flows.

Figure 3-16
USDIA: U.S. direct investment position in service industries, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 84-85.

Figure 3-17
USDIA: U.S. direct investment position in the financial services industry, by country, 1998[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 66.

the progressive privatization of large financial institutions overseas, the regulatory reform of key financial markets, and the use of holding companies for tax purposes.[36]

In the manufacturing sector, the chemicals industry accounted for the largest single share of outbound investment stock, totaling $83.6 billion. This represented 27.4 percent of outbound investment in the manufacturing sector and 8.5 percent of total outbound investment in 1998 (figure 3-18). Countries that accounted for large shares of total U.S. outbound investment in the chemicals industry included the United Kingdom (20.8 percent), the Netherlands (12.2 percent), Canada (9.9 percent), Brazil (6.6 percent), and Belgium (6.4 percent) (figure 3-19). Extensive direct investment in the chemicals industry is motivated by the need to pool the significant scientific and financial resources necessary to conduct research and development.[37]

Foreign direct investment stock in most service industries grew at a faster rate than total outbound stock during the period. U.S. outbound stock in the electric, gas, and sanitary services industry and the communications industry increased most rapidly,[38] registering average annual growth rates of 50.6 percent and 24.1 percent, respectively.[39] Rapidly increasing U.S. direct investment stock in these industries reflects the ongoing privatization of electricity utilities and telecommunication carriers, and regulatory reform in these global infrastructure service markets.[40] In particular, U.S. companies have made significant investments in the British and Australian electricity markets during the 1990s, in an effort to diversify income sources and establish footholds from which to further expand into foreign energy markets.[41]

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[36] USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85.

[37] Ibid.

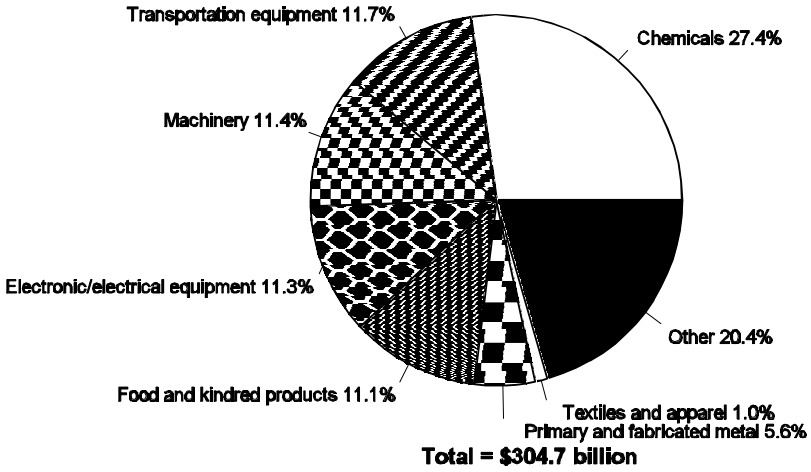
[38] Direct investment stock in the agricultural services industry grew at an average annual rate of 290.6 percent during 1990-1998. However, yearly growth rates in this industry varied significantly during 1990-98, ranging from 2100 percent in 1992 to -100 percent in 1993. The nominal value of U.S. outbound stock in agricultural services was relatively small, reaching only $7 million in 1998.

[39] Nominally, U.S. outbound investment in the electric, gas, and sanitary industry grew from $1.5 billion in 1990 to $24.8 billion in 1998, while U.S. outbound investment in the communications industry increased from $2.9 billion in 1990 to $16.3 billion in 1998.

[40] Infrastructure services can include telecommunication, electric, gas, sanitary, water supply, and transportation services.

[41] Energy Information Administration (EIA), *Electricity Reform Abroad and U.S. Investment* (Washington, DC: EIA, Sept. 1997), p. v. and appendix B, tables B2 and B3. For further information on reform of global electric power markets, see USITC, "Electric Power: Regulatory Reform in Selected Foreign Markets," USITC publication No. 3370, Nov. 2000.

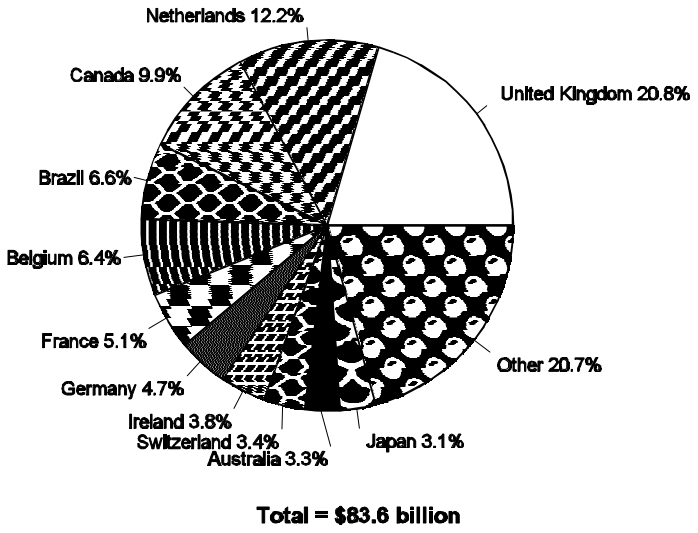
Figure 3-18
USDIA: U.S. direct investment position in manufacturing industries, 1998[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 84.

Figure 3-19
USDIA: U.S. direct investment position in the chemicals industry, by country, 1998



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, p. 66.

The only manufacturing industries in which U.S. outbound stock grew at a faster rate than the total for all industries were pharmaceuticals and electronics, which registered average annual growth rates of 18.8 percent and 11.1 percent, respectively.[42] Rapid U.S. outbound investment growth in the pharmaceuticals industry may be a result of the need to pool financial resources and research findings to remain competitive, and extant regulations which favor those firms that gain market access through investment rather than through trade.[43] Rapidly increasing outbound investment in the electronic and electrical equipment industry may be a result of decreasing production costs in the computer components industry, and subsequent offshore production. See appendix B for a discussion of the determinants of U.S. direct investment abroad.

In which industries do U.S.-owned foreign affiliates employ the greatest number of persons? How are these employees distributed by country?

Foreign affiliates employ the majority of their foreign workers in manufacturing industries, but employment growth in service industries is surging.

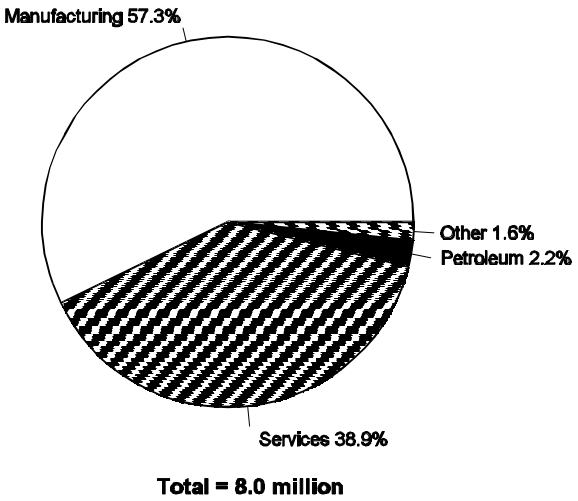
The manufacturing sector accounted for the largest share of employment by U.S.-owned foreign affiliates (figure 3-20, table 3-9). In 1997, U.S.-owned foreign affiliates in the manufacturing sector accounted for 4.6 million employees, or 57.3 percent of all workers employed by foreign affiliates, while foreign affiliates in the service and petroleum sectors accounted for 38.9 percent and 2.2 percent of such workers, respectively. During 1990-97, the number of workers employed by foreign affiliates in the service sector increased at an average annual rate of 7.5 percent, faster than the 2.4-percent average annual growth rate of total foreign affiliate employment. In contrast, foreign affiliates in the manufacturing and petroleum industries increased at slower-than-average annual rates of 0.9 percent and 1.1 percent, respectively.

In the manufacturing sector, U.S.-owned foreign affiliates in the miscellaneous manufacturing, electric and electronic equipment, and transportation equipment industries employed the largest number of persons, respectively accounting for 18.2 percent, 16.4 percent, and 15.3 percent of all persons employed by foreign manufacturing affiliates in

[42] In absolute terms, U.S. outbound investment in the pharmaceutical industry increased from $9.3 billion in 1990 to $31.9 billion in 1998, while U.S. outbound investment in the electronics industry grew from $15.6 billion in 1990 to $34.5 billion in 1998. USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85.

[43] Organisation for Economic Cooperation and Development (OECD), "R&D, Globalisation and Governments," *The OECD Observer*, Dec. 1999, found at Internet address http://proquest.umi.com/, retrieved Mar. 14, 2000.

Figure 3-20
USDIA: Employment by sector, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-2.

1997 (figure 3-21). During 1990-97, foreign affiliate employment in most manufacturing industries grew at a slower-than-average rate, and employment by foreign affiliates in the transportation equipment industry posted a yearly decrease of 2.5 percent. However, the number of workers employed by foreign affiliates in the textile products and apparel industry increased at a faster-than-average annual rate of 6.2 percent. Other industries in which foreign affiliate employment increased at faster-than-average annual rates include food and kindred products (4.1 percent) and electric and electronic equipment (2.7 percent).[44]

In the service sector, the "other" services,[45] retail trade, and wholesale trade industries were the largest employers, respectively accounting for 31.7 percent, 20.9 percent, and 18.8 percent of employment by foreign services affiliates in 1997 (figure 3-22). During 1990-97, U.S.-owned foreign affiliates in the communication and electric, gas, and sanitary services industries registered average annual employment growth of 23.2 percent and 18.4 percent, respectively, outstripping the average annual growth rate of total foreign affiliate employment by a significant margin. Other service industries in which foreign affiliates registered

[44] Ibid.

[45] "Other" services comprise hotels and other lodging places; business services; automotive and rental leasing; motion pictures; health services; engineering, architectural, and surveying services; management and public relations services; and other services.

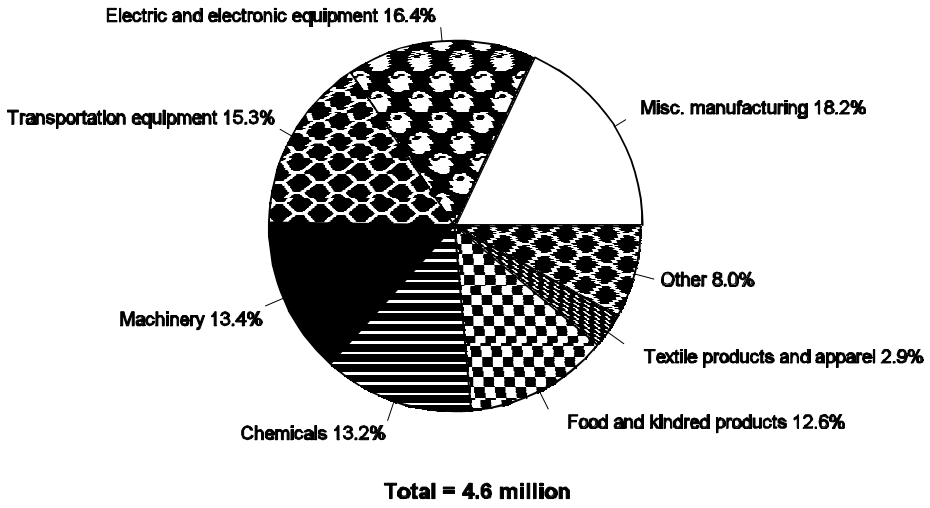
Table 3-9
USDIA: Foreign affiliate employment, by industry, 1990 and 1997

Industry	1990	1997	Percent of total, 1997	Average annual growth	Standard deviation
	Thousands of employees			*Percent*	
All industries	6,833.9	8,018.0	100.0	2.4	3.1
Petroleum (excludes oil and gas field services)	164.5	174.3	2.2	1.1	7.5
Manufacturing	4,332.9	4,592.9	57.3	0.9	3.9
Food and kindred products	452.2	598	7.5	4.1	3.8
Chemicals and allied products	583.1	622.4	7.8	0.9	1.6
Drugs	180.0	197.6	2.5	1.4	3.5
Primary and fabricated metals	231.6	244.7	3.1	1.3	10.2
Fabricated metal products	162.6	179.1	2.2	2.0	12.1
Machinery, except electrical	571.1	634.1	7.9	1.8	7.9
Other manufacturing	2,495	2,494	31.1	0.2	6.0
Electric and electronic equipment	712.6	774.5	9.7	2.7	17.9
Transportation equipment	869.1	724.2	9.0	-2.5	4.4
Textile products and apparel	89.6	135.9	1.7	6.2	4.3
Misc. manufacturing	823.7	859.1	10.7	0.6	2.5
Services (total)	2,128.8	[1]3120.2	38.9	7.5	20.9
Wholesale trade	547.2	588.0	7.3	1.1	2.7
Retail trade	717.7	651.8	8.1	-1.6	5.1
Finance (except banking), insurance, and real estate	166.2	218.8	2.7	4.2	6.9
Finance, except banking	60.6	92.6	1.2	6.8	10.3
Insurance	98.5	118.5	1.5	3.0	7.7
Real estate	3	2.4	0.0	9.9	53.4
Services (other)	490	988.9	12.3	10.7	6.2
Oil and gas field services	35.6	([2])	([2])	4.1	9.6
Construction	52.8	59.4	0.7	2.7	15.4
Transportation	60.9	133.2	1.7	13.9	22.5
Communications and public utilities	58.4	428.3	5.3	35.4	26.6
Communications	([3])	336.8	4.2	23.2	12.2
Electric, gas, and sanitary services	30	91.5	1.1	18.4	16.4
Agriculture (excludes agriculture services)	78.2	74.2	0.9	2.9	7.8
Mining	93.9	56.3	0.7	([2])	([2])

[1] Excludes oil and gas field services.
[2] Not available.

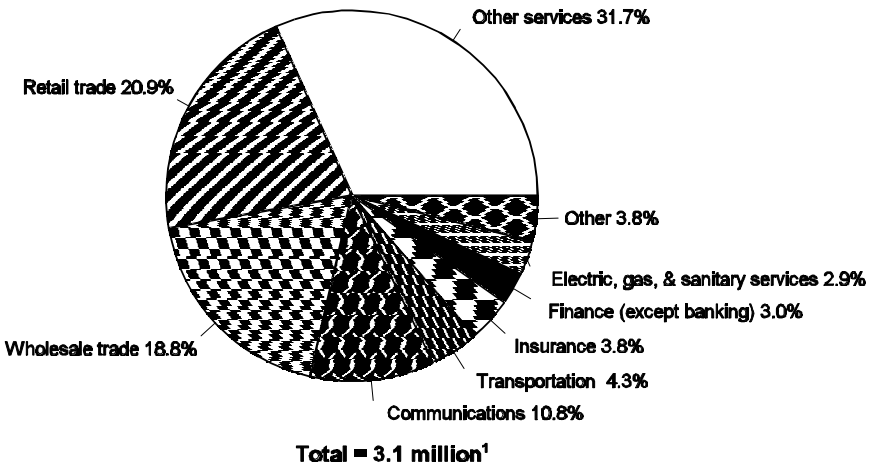
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, annual publication, 1990-97, table II.A.2.

Figure 3-21
USDIA: Foreign affiliate employment in manufacturing industries, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-2.

Figure 3-22
USDIA: Foreign affiliate employment in service industries, 1997



[1] Excludes oil and gas field services.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-2.

particularly rapid annual employment growth included holding companies (12.6 percent), "other" services (10.7 percent), and real estate (9.9 percent).[46]

U.S.-owned foreign affiliates employ the largest number of persons in the United Kingdom, Canada, Mexico, and Germany, which together accounted for 41.6 percent of total foreign affiliate employment in 1997 (figure 3-23, table 3-10). The service sector accounted for the majority of foreign affiliate employment in the United Kingdom and Canada. More specifically, foreign affiliates in the "other" services sector employed a substantial share (21.5 percent) of all foreign affiliate workers in the United Kingdom, while retail trade affiliates employed a substantial share (23.5 percent) of all foreign affiliate workers in Canada. In contrast, the manufacturing sector accounted for the majority of workers employed by U.S.-owned foreign affiliates in both Germany and Mexico. Transportation equipment accounted for the largest share (at least 15.9 percent)[47] of foreign affiliate employment in Germany, while the electronic and other electric equipment sector accounted for the largest share (22.4 percent) of foreign affiliate employment in Mexico.[48]

How do wages earned by foreign employees of U.S.-owned foreign affiliates compare to wages earned by workers in the U.S. market?

U.S. MNCs usually pay higher wages in the United States than in their foreign affiliates.

In 1997, U.S. workers received average annual compensation of $35,100, while foreign workers employed by U.S.-owned foreign affiliates received average annual compensation of $32,600 (table 3-11).[49] Likewise, in most industries, annual wages paid to U.S. workers exceed wages paid to foreign affiliate employees. The greatest wage differential is observed in the chemicals manufacturing industry. In 1997, U.S. employees of chemicals manufacturing firms received an average wage of $69,100, while employees of U.S.-owned foreign chemicals affiliates received an average wage of $40,000. Other industries in which the average U.S. wage exceeded the average foreign affiliate wage by at least $20,000 in 1997 include the electric, gas, and sanitary services and transportation

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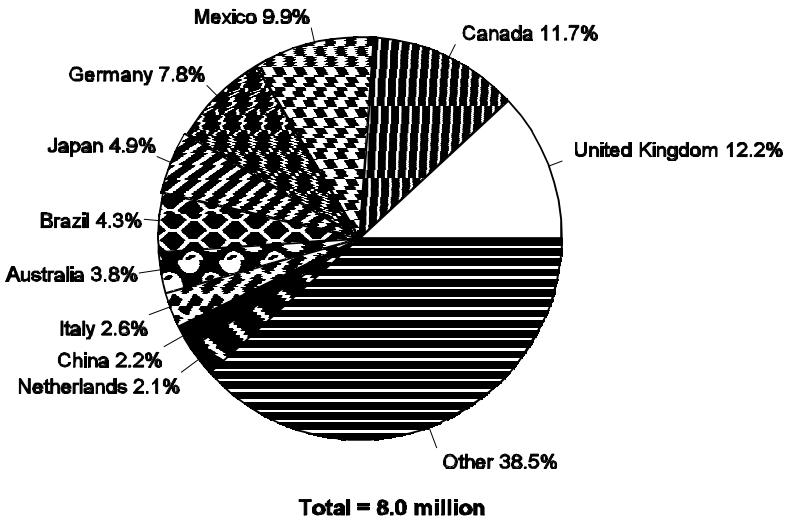
[46] USDOC, BEA, *USDIA*, 1990-97. Holding companies are included in the finance industry.

[47] BEA reports that 100,000 or more workers are employed by foreign affiliates in the German transportation equipment industry.

[48] USDOC, BEA, *USDIA*, 1990-97.

[49] For the purposes of this paper, wages are equal to total compensation paid by employers, divided by the total number of full-time and part-time employees. The term thus actually reflects total compensation per employee (including non-wage compensation such as benefits). High-wage industries are those for which total compensation per employee was greater than the average compensation per employee for all private U.S. industries of $35,100 in 1997. Calculations by Commission staff from BEA data.

Figure 3-23
USDIA: Foreign affiliate employment, by country, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-1.

equipment industries. However, foreign affiliate employees received higher average wages than U.S. workers in certain industries. Most notably, employees of foreign affiliates in the financial services industry received an average wage of $76,300 in 1997, while U.S. workers employed by financial services firms received a substantially lower average wage of $57,000. Other industries in which foreign affiliate employees earned a higher average wage than U.S. workers include mining and construction.[50]

In which industries do U.S.-owned foreign affiliates have the highest sales? How well are sales correlated with employment, wages, assets, and investment stock?

U.S.-owned foreign affiliates in the wholesale trade, petroleum, and transportation equipment industries account for the largest shares of foreign affiliate sales (figure 3-24, table 3-12). In 1997, foreign wholesale trade affiliates accounted for $422.3 billion, or 17.9 percent, of total sales by foreign affiliates, while affiliates in the petroleum and

[50] The differences in compensation levels for a given industry in the United States versus other countries may be due in part to different definitions of job functions in the countries, or to differing productivity levels within the same industry in different countries. USDOC, BEA, *USDIA*, 1990-97; and USDOC, BEA, *Survey of Current Business*, Aug. 1998, pp. 79-81.

Table 3-10
USDIA: Foreign affiliate employment, by country, 1990 and 1997

Countries	1990	1997	Percent of total, 1997	Average annual growth	Standard deviation
	Thousands of employees			*Percent*	
Argentina	58	107	1.3	9.9	13.0
Australia	388	304	3.8	-2.4	12.9
Austria	27	28	0.4	0.6	6.0
Belgium	129	133	1.7	0.9	9.1
Bermuda	3	8	0.1	23.6	49.2
Brazil	443	341	4.3	-3.3	8.4
Canada	932	942	11.8	0.2	2.8
Chile	22	57	0.7	14.9	10.9
China	21	175	2.2	40.1	42.4
Finland	9	13	0.2	129.0	345.1
France	420	484	6.0	2.2	5.4
Germany	593	627	7.8	0.9	3.3
Hong Kong	82	123	1.5	6.4	10.0
Indonesia	43	66	0.8	6.8	8.1
Ireland	45	66	0.8	5.7	7.9
Israel	26	48	0.6	9.7	10.5
Italy	198	206	2.6	1.0	9.4
Japan	402	397	5.0	-0.2	3.0
Korea	73	60	0.8	-2.4	8.4
Luxembourg	7	9	0.1	3.6	10.1
Mexico	553	793	9.9	5.4	5.6
Netherlands	143	169	2.1	2.5	4.3
Netherlands Antilles	1	1	0.01	8.1	16.2
Norway	28	42	0.5	7.5	18.3
Panama	20	16	0.2	-3.2	6.3
Singapore	87	124	1.6	5.3	2.3
South Africa	41	106	1.3	18.2	32.8
Spain	157	159	2.0	0.4	6.1
Sweden	61	56	0.7	0.3	18.6
Switzerland	55	([1])	[2]0.7	-0.4	10.3
Taiwan	64	71	0.9	1.7	7.4
U. K. Islands, Caribbean	2	7	0.1	32.0	43.9
United Kingdom	937	977	12.2	0.7	4.5
Eastern Europe[3]	18	185	2.3	45.1	41.2
European Union	2,781	3,008	37.5	1.2	4.2
All countries	6,834	8,018	100	2.4	3.1

[1] U.S.-owned foreign affiliates in Switzerland employed between 50,000 and 99,999 workers in 1997. BEA reported a size range in order to avoid disclosure of individual company information.

[2] 1996 data.

[3] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Source: U.S. Department of Commerce, Bureaus of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, annual publication, 1990-97, table II.A.1.

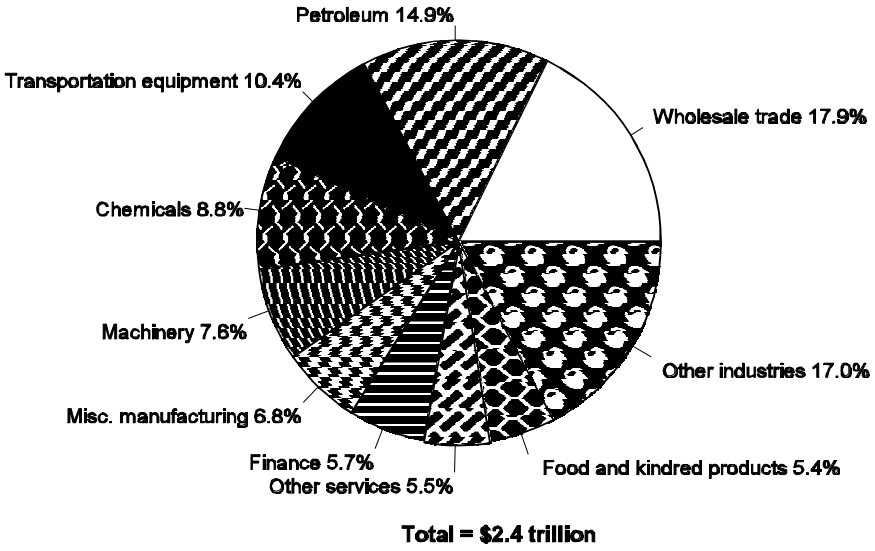
Table 3-11
Annual wages,[1] employees of U.S.-owned foreign affiliates vs. U.S. employees, by industry, in U.S. dollars, 1997

Industry	Annual wages, employees of foreign affiliates	Annual wages, U.S. employees
	——Dollars/employee/year——	
Petroleum (excludes oil and gas field services)	50,200	68,700
Manufacturing	31,000	46,800
Food and kindred products	23,500	39,000
Chemicals and allied products	40,000	69,100
Primary and fabricated metals	31,400	46,600
Machinery, except electrical	39,400	52,200
Misc. manufacturing	([2])	34,700
Textile products and apparel	18,600	27,500
Transportation equipment	36,500	60,000
Services	34,300	32,500
Wholesale trade	46,100	46,100
Retail trade	12,700	18,600
Finance (except banking, insurance, and real estate)	76,300	57,000
Insurance	45,000	50,300
Other services	36,100	31,800
Construction	38,600	38,200
Transportation	30,000	40,000
Communications and public utilities	35,400	58,100
Communications[3]	35,900	55,500
Electric, gas, and sanitary services[3]	33,400	61,900
Real estate	20,000	33,000
Agriculture (excludes agriculture services)	7,600	19,700
Mining	33,200	23,800
All industries (average)	32,600	35,100

[1] Wages equal total annual compensation per employee.
[2] Not available.
[3] 1996 data.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Foreign Affiliates (USDIA)*, annual publication, 1990-97, table II.A.2, and USDOC, BEA, *Survey of Current Business*, Aug. 1998, p. 79.

Figure 3-24
USDIA: Foreign affiliate sales, by industry, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1997 Preliminary Results*, table II-A-2.

transportation equipment industries respectively accounted for 14.9 percent and 10.4 percent of such sales. Other industries in which foreign affiliates recorded high sales include chemicals and machinery manufacturing, which respectively accounted for 8.8 percent and 7.6 percent of total foreign affiliate sales in 1997.[51]

Although they account for a relatively small share of total foreign affiliate sales, U.S.-owned foreign affiliates in infrastructure industries registered particularly rapid sales growth. During 1990-97, sales by foreign affiliates in the electric, gas, and sanitary services, communications, and transportation industries increased at average annual rates of 47.2 percent, 59.0 percent, and 16.7 percent, respectively. Rapidly increasing sales in these industries are most likely a result of the trend toward infrastructure privatization during the 1990s. In contrast, sales by affiliates classified as holding companies and retail trade firms decreased at average annual rates of 3.0 percent and 0.4 percent, respectively, during 1990-97.

A strong and positive correlation exists between foreign affiliate sales and employment, assets, and investment stock (table 3-13). This result is not surprising, as one would expect foreign affiliates with large capital and labor resources to account for a large share of foreign affiliate sales. There is also a strong and positive correlation between foreign affiliate sales and wages.[52] This may reflect higher assets per employee, which

[51] USDOC, BEA, *USDIA*, 1990-97.
[52] Calculations by the Commission, based on USDOC, BEA, *USDIA*.

Table 3-12
USDIA: Foreign affiliate sales, by industry, 1990 and 1997

Industry	1990	1997	Percent of total, 1997	Average annual growth	Standard deviation
	Millions of dollars		*Percent*		
All industries	1,493,426	2,356,416	100.0	6.9	5.4
Petroleum (excludes oil and gas field services)	286,364	351,045	14.9	6.0	8.1
Manufacturing	741,169	1,086,129	46.1	5.8	6.0
Food and kindred products	75,958	127,710	5.4	7.7	2.1
Chemicals and allied products	128,721	207,988	8.8	7.4	7.8
Drugs	30,988	62,395	2.6	11.0	10.7
Primary and fabricated metals	28,481	44,679	1.9	7.1	10.0
Fabricated metal products	18,902	30,738	1.3	7.8	11.4
Machinery, except electrical	122,139	178,257	7.6	5.9	8.5
Other manufacturing	385,869	527,495	22.4	4.8	6.3
Electric and electronic equipment	73,502	110,625	4.7	7.4	15.8
Transportation equipment	189,513	244,199	10.4	3.8	4.8
Textile products and apparel	7,171	12,527	0.5	8.8	9.8
Misc. manufacturing	115,683	160,144	6.8	5.0	7.0
Services (total)[1]	([2])	903,383	38.3	12.6	5.5
Wholesale trade[2]	244,535	422,285	17.9	8.2	5.3
Retail trade[2]	53,253	51,172	2.2	-0.4	6.2
Finance (except banking), insurance, and real estate	67,198	135,331	5.7	10.6	5.5
Finance, except banking	31,328	68,910	2.9	12.3	8.9
Insurance	34,791	64,802	2.8	9.4	3.6
Real estate	804	1,475	0.1	12.5	27.7
Holding companies	275	144	0.0	-3.0	37.4
Services (other)	49,386	128,639	5.5	15.0	9.0
Motion pictures, including television tape and film	6,901	9,964	0.4	5.7	8.1
Agricultural services	9	79	0.0	-1.2	51.2
Oil and gas field services	4,708	9,407	0.6	18.5	4.3
Construction	7,817	13,995	0.6	10.5	20.2
Transportation	([3])	21,103	0.9	16.7	20.1
Communications and public utilities	([3])	121,372	5.2	35.9	17.8
Communications	2510	68,607	2.9	59.0	21.9
Electric, gas, and sanitary services	([3])	52,765	2.2	47.2	14.7
Agriculture (excludes agriculture services)	1,595	3,323	0.1	8.7	6.7

[1] Average annual growth rate for services (total) is calculated for 1994-97, the years for which data are available.
[2] Data for wholesale and retail trade include sales of both goods and services.
[3] Not available.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, annual publication, 1990-97, table II.A.2.

Table 3-13
USDIA: Correlation of foreign affiliate sales with other indicators, by industry, 1997

	Sales	Employment	Assets	Wages[1]	Investment position
Sales	1.000				
Employment	0.976	1.000			
Assets	0.861	0.816	1.000		
Wages[1]	0.985	0.996	0.841	1.000	
Investment position	0.923	0.890	0.970	0.907	1.000

[1] Wages equal total annual compensation per employee.

Source: Compiled by the Commission.

could increase productivity and thus wages, or the concentration of affiliate sales in high wage industries and high wage countries. For further discussion of the effects of wages on inbound and outbound direct investment, see chapter 2 and appendix B.

How do the foreign operations of U.S. parent companies compare to the foreign operations of non-U.S. parent companies?

U.S. MNCs tend to be less globally oriented than foreign MNCs, especially in terms of employment.

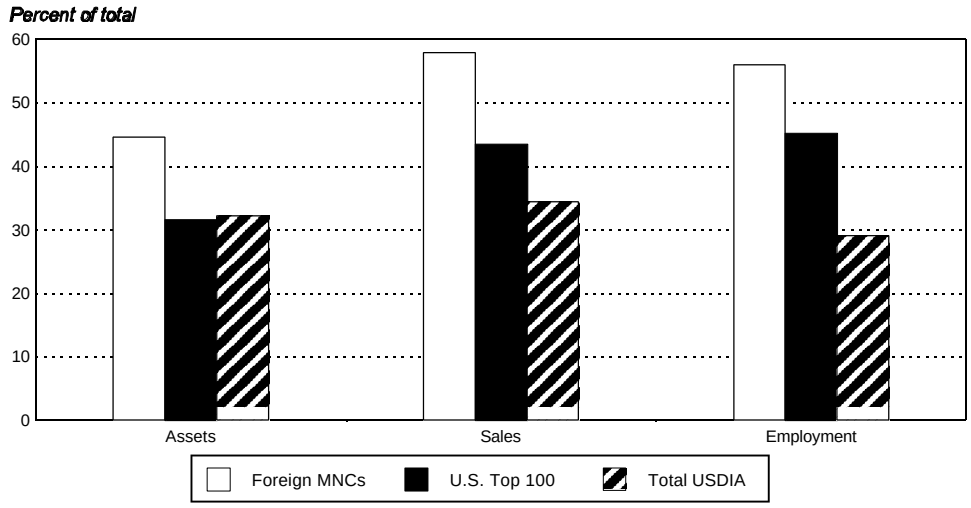
The U.N. Conference on Trade and Development (UNCTAD) publishes an annual list of the world's 100 largest non-financial MNCs, ranked in terms of their foreign assets, and provides data regarding assets, sales, and employment by location. The data reveal that the operations of non-U.S. MNCs are more globally dispersed than the operations of MNCs from the United States (figure 3-25). Foreign firms have a higher proportion of foreign sales than U.S. firms in almost every industry. This is particularly true for the chemicals and pharmaceuticals industries (table 3-14).[53] Foreign companies likely averaged a greater share of foreign sales because they face smaller domestic markets than U.S. firms. Other factors such as past colonial ties or management differences may also play a role.

U.S. multinational companies account for 32.9 percent of the total foreign assets of all 100 companies on UNCTAD's list, and 25.7 percent of total foreign sales, but only 13.3 percent of total foreign employment.[54] The U.S. presence abroad is strongest in the petroleum sector, where U.S. firms account for 48.7 percent of all foreign sales by petroleum companies

[53] United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development* (Geneva: United Nations), table III.1.

[54] This figure is an estimate based on available data. UNCTAD's employment data is incomplete.

Figure 3-25
Level of foreign operations compared to total operations, foreign vs. U.S. MNCs



Note: MNCs are ranked by total foreign assets.
Source: UNCTAD/Erasmus University database, from *World Investment Report 1999*, table III.1.

Table 3-14
Foreign sales by U.S. and foreign parents, selected industries, 1997

Industry	Number of foreign companies in UNCTAD 100	Number of U.S. companies in UNCTAD 100	Foreign companies in UNCTAD 100	U.S. companies in UNCTAD 100	U.S. companies' share of total foreign sales by UNCTAD 100
			–Foreign sales/total sales—		
			Percent		
All industries	73	27	57.8	43.4	25.7
Chemicals	14	7	84.4	48.4	25.0
Communications	2	2	67.1	15.6	33.2
Electronics	12	5	61.2	47.5	30.2
Petroleum	6	6	58.2	59.0	48.7
Pharmaceuticals	4	4	94.9	43.3	29.2
Transportation equipment	12	2	59.9	29.8	23.1

Source: United Nations Conference on Trade and Development (UNCTAD)/Erasmus University Database, *World Investment Report 1999* (New York: United Nations, 1999).

on the list, followed by the communications and electronics industries, where U.S. firms account for 33.2 percent and 30.2 percent, respectively, of foreign sales by MNCs.[55]

In which industries have U.S. companies acquired the greatest number of companies? What proportion of total acquisitions falls into the "infrastructure services" category?

Business services accounted for the greatest number of U.S. acquisitions; energy firms for the highest value.

U.S. firms acquired a total of 9,362 foreign entities during 1990-97.[56] U.S. firms made the greatest number of acquisitions in the business services industry, part of the "other services" category.[57] During 1990-97, U.S. acquisitions of foreign business services firms numbered 1,524, accounting for 16.3 percent of total U.S. acquisitions. However, in terms of value, U.S. acquisitions in the electric, gas, and sanitary services industry[58] surpassed U.S. acquisitions in any other single industry (table 3-15). U.S. acquisitions of foreign firms in the industry accounted for $47.0 billion, or 13.4 percent, of the total $350.9 billion value of U.S. acquisitions during 1990-97. Other infrastructure industries which accounted for a substantial share of U.S. acquisitions in terms of value include petroleum ($44.0 billion, or 12.5 percent), and communication services ($21.0 billion, or 6.0 percent).[59]

An analysis of outbound stock also reveals that a growing proportion of U.S. investment is being directed towards infrastructure industries. For example, U.S. outbound investment stock in the electric, gas, and sanitary services industry increased at an average annual rate of 50.6 percent during 1990-98, much faster than the 10.9-percent average annual growth rate for total U.S. outbound investment stock. As a result, the share of total U.S. outbound stock accounted for by investment in the electric, gas,

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[55] *World Investment Report 1999*, table III.1.

[56] These data are compiled by KPMG Corporate Finance from newspaper reports. Any merger or acquisition not announced in the major financial press would not be included. In addition, when the value of a merger or acquisition is not announced in the press, the database records a value of zero for that transaction, so the total value of transactions likely is understated in many instances. Finally, the value of mergers or acquisitions as announced in the press may not correspond exactly to the final value of the transaction on the day it is signed, as the final value of such transactions is often dependent on a company's stock prices, which fluctuate daily.

[57] Business services include advertising, computer and data processing services, equipment rental, and other business services.

[58] Includes electricity generation from all fuel sources.

[59] KPMG Corporate Finance, cross-border mergers and acquisitions database.

Table 3-15
Cross-border acquisitions: United States as purchasing country, by industry, 1990-97

Industry	Number of deals	Value of deals	Percentage of total deals
		Millions of dollars	*Percent*
Petroleum	409	43,968	4.4
Manufacturing	3,140	108,257	33.8
Food and kindred products	499	28,050	5.4
Chemicals and allied products	670	27,006	7.2
Primary and fabricated metals	276	10,374	3.0
Machinery	227	2,949	2.4
Other manufacturing	1,468	39,878	15.8
Textile products and apparel	133	3,861	1.4
Transportation equipment	389	15,933	4.2
Services	5,559	189,965	59.8
Wholesale trade	370	4,102	4.0
Retail trade	176	4,352	1.9
Finance	644	28,492	6.9
Banking and securities	370	17,497	4.0
Insurance	168	5,462	1.8
Real estate	106	5,533	1.1
Other services	3,417	75,820	36.7
Construction	64	2,368	0.7
Transportation	231	6,904	2.5
Communications and public utilities	657	67,927	7.1
Communications	391	21,045	4.2
Electric, gas, and sanitary services	266	46,882	2.9
Agriculture, forestry and fishing	50	1,497	0.5
Mining	143	7,253	1.5
All industries[1]	9,362	350,940	100.0

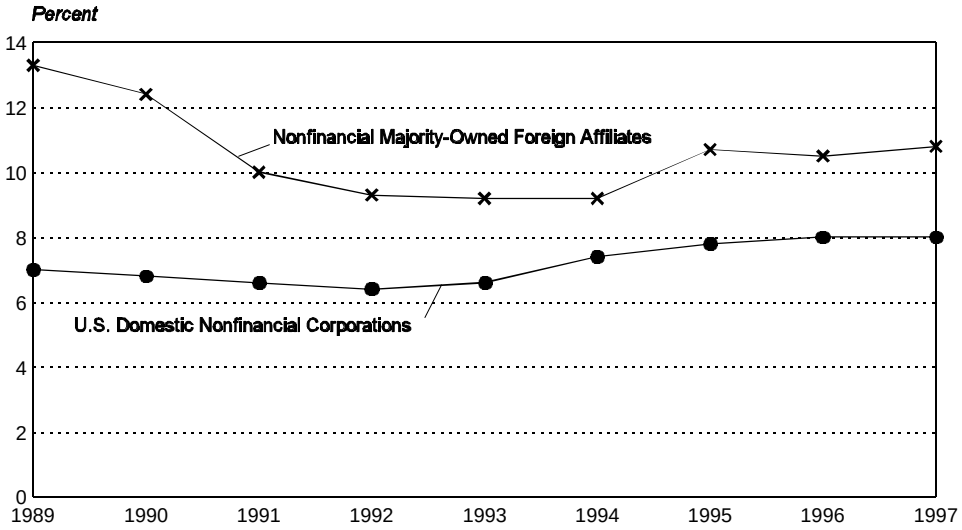
[1] This data is compiled from press reports. Figures may not add to totals, due to the difficulty of identifying the industry in some corporate merger announcements, and to the fact that the values cited in press reports are subject to change due to fluctuations in corporate share prices and other factors.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

and sanitary services industry increased from 0.3 percent in 1990 to 2.5 percent in 1998.[60] The rapid increase in U.S. outbound stock in the industry primarily reflects increased U.S. investment in the British and Australian electricity markets,[61] enabled by the regulatory reform of these markets and the privatization of electricity assets.[62] U.S. investors have pursued the investment opportunities created by these reforms for a variety of financial and strategic reasons, including the diversification of

[60] USDOC, BEA, *Survey of Current Business*, Aug. 1995, pp. 115-116; Oct. 1998, pp. 154-155; and Sept. 1999, pp. 84-85.
[61] EIA, *Electricity Reform Abroad and U.S. Investment*, p. v.
[62] Ibid., appendix B, tables B2 and B3.

Figure 3-26
Return on assets, 1989-97



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, p. 11.

income sources and the establishment of footholds from which further expansion in the foreign electricity market can be pursued.[63]

How does the rate of return of all U.S. companies compare to the rate of return of U.S.-owned foreign affiliates?

Foreign affiliates earn higher return on assets than U.S. firms overall.

During 1989-97, U.S.-owned foreign affiliates recorded an average annual return on assets of 10.6 percent, while domestic firms recorded a 7.2 percent return on assets.[64] After narrowing between 1989 and 1994, the gap between the rates of return earned by foreign affiliates and domestic firms remained relatively unchanged during 1995-97 (figure 3-26). These data suggest that U.S. firms require higher rates of return on investments abroad than at home, in order to compensate for associated risks.[65]

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[63] USITC, "Deregulation Fosters Globalization of the Electric Power Industry," *Industry, Trade, and Technology Review*, USITC publication 3134, Sept. 1998, pp. 44-45.

[64] These data do not include companies in the finance, insurance, real estate, or banking industries. In addition, BEA does not publish return on assets data for individual industries.

[65] USDOC, BEA, *Survey of Current Business*, July 1999, p. 11.

Chapter 4
Foreign Direct Investment in the United States

This chapter considers a number of questions regarding foreign direct investment in the United States (FDIUS). Specifically, the chapter addresses the extent and growth of direct investment by foreign companies in the United States, the levels of employment and wages associated with FDIUS, and the operations of U.S. affiliates[1] in the United States.

Which countries have the largest direct investment positions[2] in the United States?

The United Kingdom is the leading investor in the United States, followed by Japan.

Cumulative foreign direct investment, or the foreign direct investment position, in the United States totaled $811.8 billion in 1998 (figure 4-1). European Union member states as a group accounted for 59.3 percent of this total, or $481.7 billion. The United Kingdom is the leading single country investor in the United States, accounting for 18.6 percent of the foreign direct investment stock in the United States, or $151.3 billion (table 4-1). During 1990-97, British companies also accounted for the greatest number of cross-border acquisitions of U.S. companies, a total of 1,448, valued at over $93 billion.[3] This trend appeared to continue in 1998 and 1999, with several high profile British acquisitions of U.S. companies, including British Petroleum's acquisition of Amoco Corp. for $55 billion and Vodafone's acquisition of AirTouch Communications for $66 billion.[4]

Japanese investors accounted for the second largest amount of foreign direct investment in the United States, with direct investment stock of

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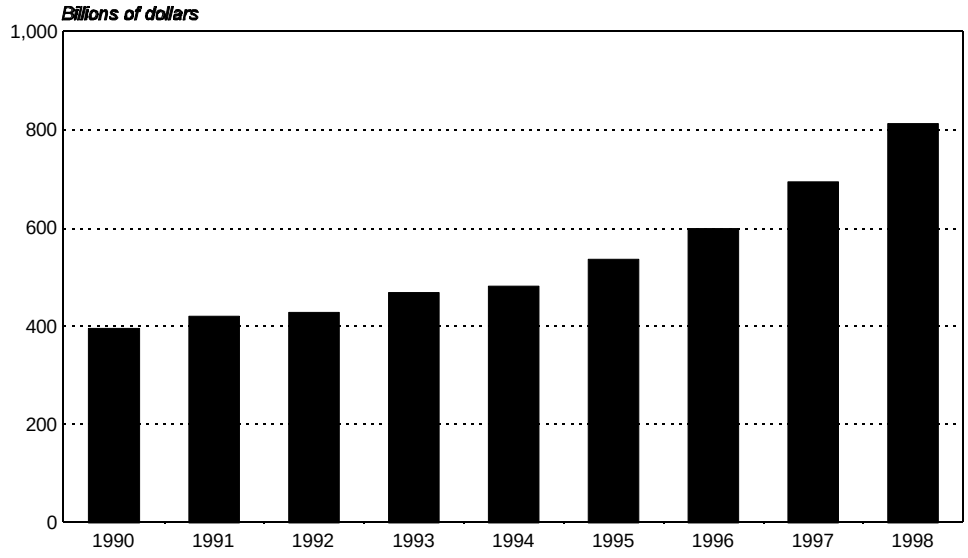
[1] U.S. affiliates are firms located in the United States, in which there is investment of 10 percent or more by a single natural (or juridical) person who is a national of (or based in) another country.

[2] Direct investment position is the sum of foreign parents' equity holdings in their U.S. affiliates (including retained earnings), plus the net outstanding loans that foreign parents have made to these affiliates. Direct investment position is negative when the value of loans made by U.S. affiliates to their foreign parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

[3] KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

[4] United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development* (Geneva: United Nations, 1999), p. 96.

Figure 4-1
FDIUS: Direct investment position, 1990-98



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 1999, p. 53; Sept. 1998, p. 106; and Aug. 1995, p. 83.

$132.6 billion (16.3 percent) in 1998. The Netherlands ranked third, with a total investment position of $96.9 billion (11.9 percent). The $11 billion acquisition of U.S. insurance firm TransAmerica Corp by Aegon NV of the Netherlands in 1999 will add substantially to this total.[5] Germany ranked fourth, with direct investment stock of $95.0 billion (11.7 percent), and Canada ranked fifth, with $74.8 billion (9.2 percent). However, Canadian firms were second only to British companies in terms of U.S. acquisitions during 1990-97, acquiring 1,194 U.S. firms valued at over $54 billion.[6]

Investors from low- and middle-income countries accounted for $38.4 billion in direct investment stock in 1998, or 4.7 percent of the total. Mexican investors alone, ranking eighteenth overall, had a $4.0-billion direct investment position in the United States in 1998, half of which was invested in the finance industry. Direct investment stock from Mexico accounted for 10.4 percent of all developing countries' direct investment into the United States. Mexican firms acquired a total of 33 U.S. firms valued at over $3 billion during 1990-97, with most of the acquisitions taking place prior to the 1994-95 Mexican peso crisis.[7]

[5] UNCTAD, *World Investment Report 1999*, p. 96.
[6] KPMG Corporate Finance, cross-border mergers and acquisitions database.
[7] Ibid.

Table 4-1
FDIUS: Direct investment position[1] on a historical-cost basis, by country, 1990 and 1998

Country	1990		1998		Average annual growth	Standard deviation	Gross domestic product, 1998
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*	*——Percent——*		*Millions of dollars*
Argentina	420	0.1	525	0.1	7.1	39.1	298,131
Australia	6,542	1.7	14,755	1.8	11.8	16.2	359,935
Austria	625	0.2	4,872	0.6	38.6	58.0	21,088
Belgium	3,900	0.1	9,577	1.2	13.9	21.5	248,776
Bermuda	1,550	0.4	2,674	0.3	23.9	67.2	[2]2,253
Brazil	377	0.1	609	0.1	7.6	17.9	778,209
Canada	29,544	7.5	74,840	9.2	12.7	9.3	581,309
Chile	5	0.0	29	0.0	115.9	187.8	76,322
China	124	0.0	401	0.0	26.4	51.0	946,316
Finland	1,504	0.4	4,321	0.5	14.8	12.6	125,521
France	18,650	4.7	62,167	7.7	16.7	10.5	1,428,750
Germany	28,232	7.2	95,045	11.7	16.9	10.9	2,125,710
Hong Kong	1,511	0.4	2,097	0.3	5.0	12.4	163,562
Indonesia	25	0.0	266	0.0	44.1	40.0	94,156
Ireland	1,340	0.3	13,227	1.6	40.0	88.1	80,952
Israel	640	0.2	2,459	0.3	23.6	40.1	125,031
Italy	1,524	0.4	3,830	0.5	22.2	13.5	1,171,870
Japan	83,091	21.0	132,569	16.3	6.1	4.9	3,782,960
Korea	[2]-1,009	([3])	285	0.0	-246.4	340.6	317,079
Luxembourg	2,195	0.6	20,214	2.5	67.2	104.5	17,263
Mexico	575	0.1	4,029	0.5	32.9	38.4	410,302
Netherlands	64,671	16.4	96,904	11.9	5.6	8.9	381,260
Netherlands Antilles	12,974	3.3	4,727	0.6	-10.2	16.6	([3])
Norway	773	0.2	3,616	0.4	22.2	14.7	145,998
Panama	4,188	1.1	7,025	0.9	7.1	10.0	9,144
Singapore	1,289	0.3	1,813	0.2	30.1	92.1	82,773
South Africa	10	0.0	43	0.0	12.2	350.7	133,962
Spain	792	0.2	2,292	0.3	26.1	55.7	554,051
Sweden	5,484	1.4	14,564	1.8	14.2	16.9	226,492
Switzerland	17,674	4.5	54,011	6.7	15.5	11.7	263,631
Taiwan	836	0.2	3,120	0.4	19.0	15.7	267,186
United Kingdom Islands, Caribbean	[2]-2,979	([3])	10,395	1.3	-58.8	171.9	([3])

Table 4-1--*Continued*
FDIUS: Direct investment position[1] on a historical cost basis, by country, 1990 and 1998

Country	1990		1998		Average annual growth	Standard deviation	Gross domestic product, 1998
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*	*——Percent——*		*Millions of dollars*
United Kingdom	98,676	25.0	151,335	18.6	5.8	8.1	1,361,020
Eastern Europe[4]	199	0.1	383	0.0	30.8	91.2	894,509
European Union	228,487	57.9	481,731	59.3	10.0	7.4	8,088,591
All countries	394,911	100.0	811,756	100.0	9.6	5.2	21,282,101

[1] Direct investment position is the sum of foreign parents' equity holdings in their U.S. affiliates (including retained earnings), plus the net outstanding loans that foreign parents have made to these affiliates. Direct investment position is negative when the value of loans made by U.S. affiliates to their foreign parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

[2] Data is for 1997. Data for 1998 is not available.

[3] Not available.

[4] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Cyprus, Czech Republic, Estonia, Georgia, Gibraltar, Greenland, Hungary, Iceland, Kazakhstan, Latvia, Lithuania, Malta, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Due to data limitations, it is not possible to exclude data from Cyprus, Gibraltar, Greenland, Iceland, and Malta.

Sources: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 83-84, USDOC, BEA, *Survey of Current Business*, Sept. 1998, pp. 106-107, USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 53-54; and World Bank, found at Internet address http://www.worldbank.org/, retrieved Sept. 28, 2000.

With few exceptions, investors from small and less developed countries recorded the highest annual growth rates in inbound investment during 1990-98, principally because they were growing from a much smaller base of total direct investment stock. Firms based in Austria, Chile, Indonesia, Ireland, Luxembourg, Mexico, Singapore, and the region of Eastern Europe recorded average annual growth rates in excess of 30 percent. However, none of these countries accounted for more than 2.5 percent of cumulative foreign direct investment in the United States by 1998. During 1990-98, direct investment stock held by major investors from Germany and Canada increased at rates well above the 9.6 percent average annual rate for all countries. By contrast, direct investment stock held by the United Kingdom, Japan, and the Netherlands, the three largest investors in the United States, increased at rates below the average for all countries, posting 5.8 percent, 6.1 percent, and 5.6 percent average annual growth, respectively. Consequently, the British share of U.S. inbound direct investment dropped from 25.0 percent in 1990 to 18.6 percent in

1998, the Japanese share dropped from 21.0 percent to 16.3, and the Dutch share dropped from 16.4 percent to 11.9 percent during the period (figure 4-2).[8]

Another way to gauge the interest of foreign investors in the United States is to examine the record of cross-border mergers and acquisitions. During 1990-97, foreign companies merged with or acquired a total of 6,188 U.S. firms. Companies based in the United Kingdom acquired 1,488 U.S. companies, in transactions valued at $93.5 billion,[9] thereby accounting for almost one-fourth of all cross-border acquisitions of U.S. firms. Canada and Japan, with 1,194 and 922 U.S. acquisitions, respectively, placed second and third. The United Kingdom, Canada, and Japan together accounted for almost 60 percent of all acquisitions of U.S. companies during 1990-97 (table 4-2).[10]

What role do Canada and Mexico play in foreign direct investment in the United States?

The United States' NAFTA partners jointly accounted for 9.7 percent of all foreign direct investment stock in the United States in 1998, up from 7.6 percent in 1990. This reflects an average annual growth rate of 13.2 percent during 1990-98. Canada accounts for the preponderant share of the NAFTA partners' investment (94.9 percent) so the growth rate largely reflects investment by Canadian parent firms. However, firms based in Mexico are increasing their direct investment in the United States at an average annual rate of 32.9 percent, much more rapidly than the 12.7-percent rate recorded by Canadian firms. This is true even though Mexico recorded a net decline in investment stock during 1994-96, as a result of the 1994-95 peso crisis.[11] Both Canadian and Mexican parent firms are

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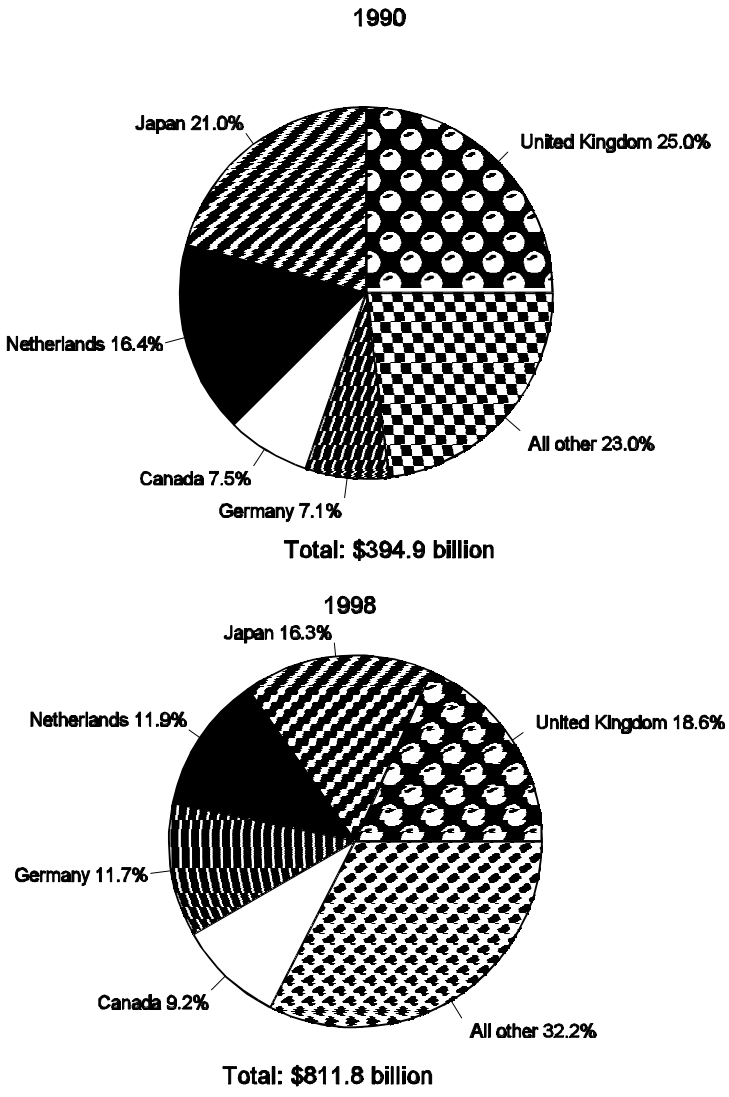
[8] U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 83-84; Sept. 1998, pp. 106-107; and Sept. 1999, pp. 53-54.

[9] This data is compiled by KPMG Corporate Finance from newspaper reports. Any merger or acquisition not announced in the major financial press would not be included. In addition, when the value of a merger or acquisition is not announced in the press, the database records a value of zero for that transaction, so the total value of transactions is thus understated in many instances. Finally, the value of mergers or acquisitions as announced in the press may not correspond exactly to the final value of the transaction on the day it is signed, as the final value of such transactions is often dependent on a company's stock prices, which fluctuate daily.

[10] KPMG Corporate Finance, cross-border mergers and acquisitions database.

[11] The Mexican peso crisis generated widespread economic problems in Mexico, which likely prevented many Mexicans from making new investments in the United States, and may have compelled some Mexican investors to withdraw funds from the U.S. economy to shore up businesses in favor of business needs in Mexico.

Figure 4-2
FDIUS: Direct investment position, by country, 1990 and 1998[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 1999, pp. 53-54; Oct. 1998, pp. 106-107; and Aug. 1995, pp. 83-84.

Table 4-2
Cross-border acquisitions: United States as selling country, by purchasing country, 1990-97

Purchasing country	Number of deals	Percent of total deals	Value of deals
			Millions of dollars
Argentina	4	0.1	751.8
Australia	120	1.9	15,122.7
Austria	5	0.1	[1]0.0
Bahamas	6	0.1	2.5
Bahrain	10	0.2	3,174.0
Barbados	1	0.0	[1]0.0
Belgium	59	1.0	6,040.2
Bermuda	28	0.5	430.1
Brazil	29	0.5	285.7
Brunei	2	0.0	262.0
Canada	1,194	19.4	54,791.4
Caribbean - other	1	0.0	0.3
Cayman Islands	2	0.0	2.3
China	14	0.2	287.7
Czech Republic	1	0.0	[1]0.0
Denmark	81	1.3	722.9
Dominican Republic	2	0.0	100.0
Dual nationality	1	0.0	210.0
East Germany	1	0.0	35.0
Finland	47	0.7	1,283.8
France	425	6.9	30,053.3
Germany	347	5.6	37,743.7
Hong Kong	65	1.1	2,131.2
India	9	0.1	94.0
Indonesia	5	0.1	38.0
Ireland	96	1.6	4,923.8
Israel	30	0.5	985.5
Italy	126	2.0	5,497.7
Japan	922	15.0	37,749.7
Korea, Republic of	48	0.8	2,937.1
Kuwait	1	0.0	3.6
Liechtenstein	2	0.0	328.0
Luxembourg	9	0.1	1,227.0
Malaysia	33	0.5	978.0
Mexico	32	0.5	3,191.8
Multinational	1	0.0	[1]0.0
Netherlands Antilles	3	0.0	67.8
Netherlands	315	5.1	26,444.6
New Zealand	18	0.3	120.5
Norway	38	0.5	1,668.1
Panama	2	0.0	417.9
Philippines	5	0.1	51.5
Portugal	6	0.1	[1]0.0
Puerto Rico	1	0.0	[1]0.0
Region European Union	4	0.1	21.0
Region Asia	2	0.0	21.0
Russia	4	0.1	169.0
Saudi Arabia	14	0.2	2,490.0
Singapore	48	0.8	1,660.0
South Africa	12	0.2	1,860.4
Soviet Union	3	0.0	[1]0.0
Spain	25	0.4	1,452.8

See footnote at end of table.

Table 4-2–*Continued*
Cross-border acquisitions: United States as selling country by purchasing country, 1990-97

Purchasing country	Number of deals	Percent of total deals	Value of deals
			Millions of dollars
Sweden	117	1.9	6,663.6
Switzerland	214	3.5	27,411.2
Taiwan	43	0.6	2,317.1
Thailand	15	0.2	330.4
Turkey	3	0.0	66.0
Ukraine	1	0.0	50.0
United Kingdom	1,488	24.2	93,539.1
Uzbekistan	1	0.0	9.0
Venezuela	10	0.2	945.1
Virgin Islands (British)	6	0.1	97.2
All countries[2]	6,188	100.0	381,814.3

[1] Deal value not reported in the press.
[2] This data is compiled from press reports. Figures may not add to totals, due to the difficulty of identifying the industry in some corporate merger announcements, and to the fact that the values cited in press reports are subject to change due to fluctuations in corporate share prices and other factors.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

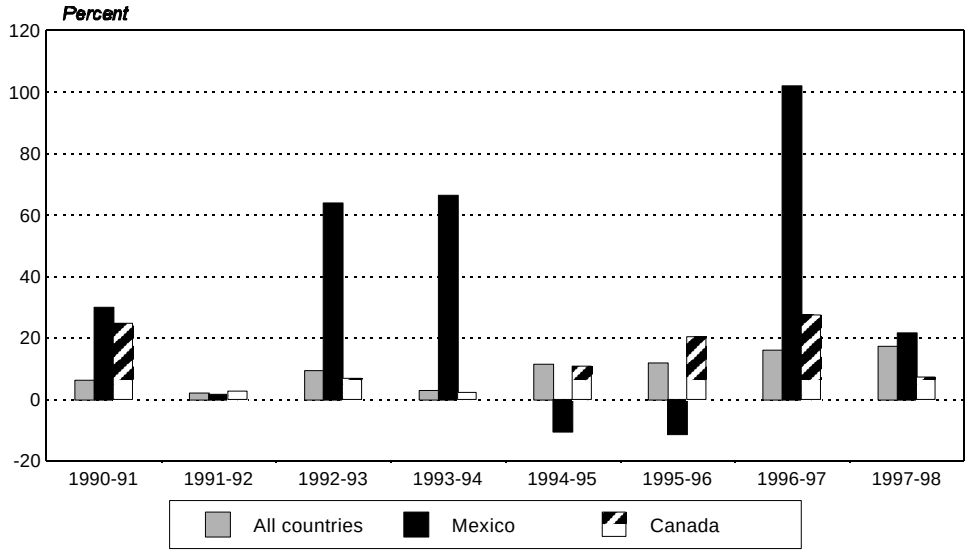
increasing their investment in the United States more quickly than the 9.6-percent average growth rate among all direct investors (figure 4-3).[12]

Foreign-owned U.S. affiliates of parents from NAFTA partners employed 628,300 U.S. workers in 1997 (table 4-3), representing 12.2 percent of all U.S. workers employed by U.S. affiliates of foreign firms. The two NAFTA partners have quite different employment patterns, however. U.S. affiliates of Canadian parents reduced their total employment from 739,100 to 601,600 workers during 1990-97. By contrast, employment by U.S. affiliates of Mexican parents increased from 14,900 in 1990 to 38,300 workers in 1996, before declining to 26,700 in 1997.[13] One-third of employment among U.S. affiliates of Canadian parents is in the manufacturing sector, and another one-third is in construction, transportation, health care, and utilities. Employment among

[12] USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 83-84; Sept. 1998, pp. 106-107; and Sept. 1999, pp. 53-54.

[13] The 1997 decline in employment for Mexico may be due to a shift in BEA's data collection methodology. As noted above, in 1997 BEA began collecting data only from affiliates with sales, assets, or net income greater than $3 million. The previous threshold was $1 million. As is the case with employment, the total number of affiliates with Mexican parent companies also rose steadily from 1990-96 before declining sharply in 1997. This implies that many of the Mexican affiliates were smaller companies which did not meet the $3 million reporting threshold.

Figure 4-3
FDIUS: Annual growth of direct investment position, NAFTA members vs. all countries, 1990-91 through 1997-98



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 1999, pp. 53-54; Oct. 1998, pp. 106-107; and Aug. 1995, pp. 83-84

Table 4-3
FDIUS: North American Free Trade Agreement (NAFTA) countries, indicators of U.S. affiliate operations, 1997 and 1998

Country	Direct Investment Position, 1998		Employment 1997		Sales 1997		Assets 1997	
	Total	Average annual growth	Total	Average annual growth	Total	Average annual growth	Total	Average annual growth
	Millions of dollars	1990-98 *Percent*	*Thou-sands*	1990-97 *Percent*	*Millions of dollars*	1990-97 *Percent*	*Millions of dollars*	1990-97 *Percent*
Canada	74,840	12.7	601.6	-2.3	139,409	1.9	309,080	4.9
Mexico	4,029	32.9	26.7	11.7	8,145	16.2	8,678	20.4
NAFTA	78,869	13.2	628.3	-2.1	147,554	2.3	317,758	5.1
Rest of the World . . .	732,887	9.2	4536.0	1.9	1,569,686	6.0	2,716,646	10.9
Total	811,756	9.6	5,164.3	1.3	1,717,240	5.6	3,034,404	10.1

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1999, pp. 53-55, and *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* annual publication, 1990-97, table A-2.

Mexican-owned U.S. affiliates is concentrated in the manufacturing sector, particularly in food and kindred products, and in the wholesale trade industry.[14]

How is FDIUS distributed by state? Within each state, which are the largest industries for foreign direct investment?

California, Texas, and New York together account for one-fourth of FDIUS.

Available data measure direct investment by state in terms of employment or gross property, plant, and equipment (PPE), a measure of the physical assets of U.S. affiliates. By both measures, the states of California, Texas, and New York jointly accounted for approximately 25 percent of the total foreign direct investment in the United States in 1997. This seems consistent with a preliminary examination of inbound investment which suggests that market size is the principal factor determining U.S. affiliates' location by state (figure 4-4).[15] In terms of physical assets, California ranked first, with U.S. affiliates holding $91.8 billion in gross property, plant, and equipment, and employing 569,400 workers. Texas ranked second, with foreign investors holding PPE valued at $77.9 billion in Texas in 1997, and employing 350,600 workers. New York ranked third, with U.S. affiliates holding PPE measuring $53.7 billion, and employing 351,500 workers. Other states which ranked in the top ten for both indicators included Illinois, Ohio, New Jersey, Florida, Pennsylvania, and Georgia (table 4-4).[16] Approximately 5 percent of U.S. private-sector employees, or 5.2 million people, worked for U.S. affiliates in 1997.[17] The states with the largest proportions of workers employed by foreign-owned firms are Hawaii, South Carolina, and North Carolina, where U.S. affiliates employ 9.0 percent, 6.3 percent, and 6.1 percent, respectively, of all state workers.[18]

For the country as a whole, the manufacturing sector accounts for just under one-half of both foreign direct investment in PPE, and of employment by U.S. affiliates. However, there are distinct variations by state. For instance, in California, manufacturing accounts for only one-third of U.S. affiliates' employment, with wholesale trade and "other

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[14] USDOC, BEA, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates (FDIUS)*, annual publication, 1990-97.

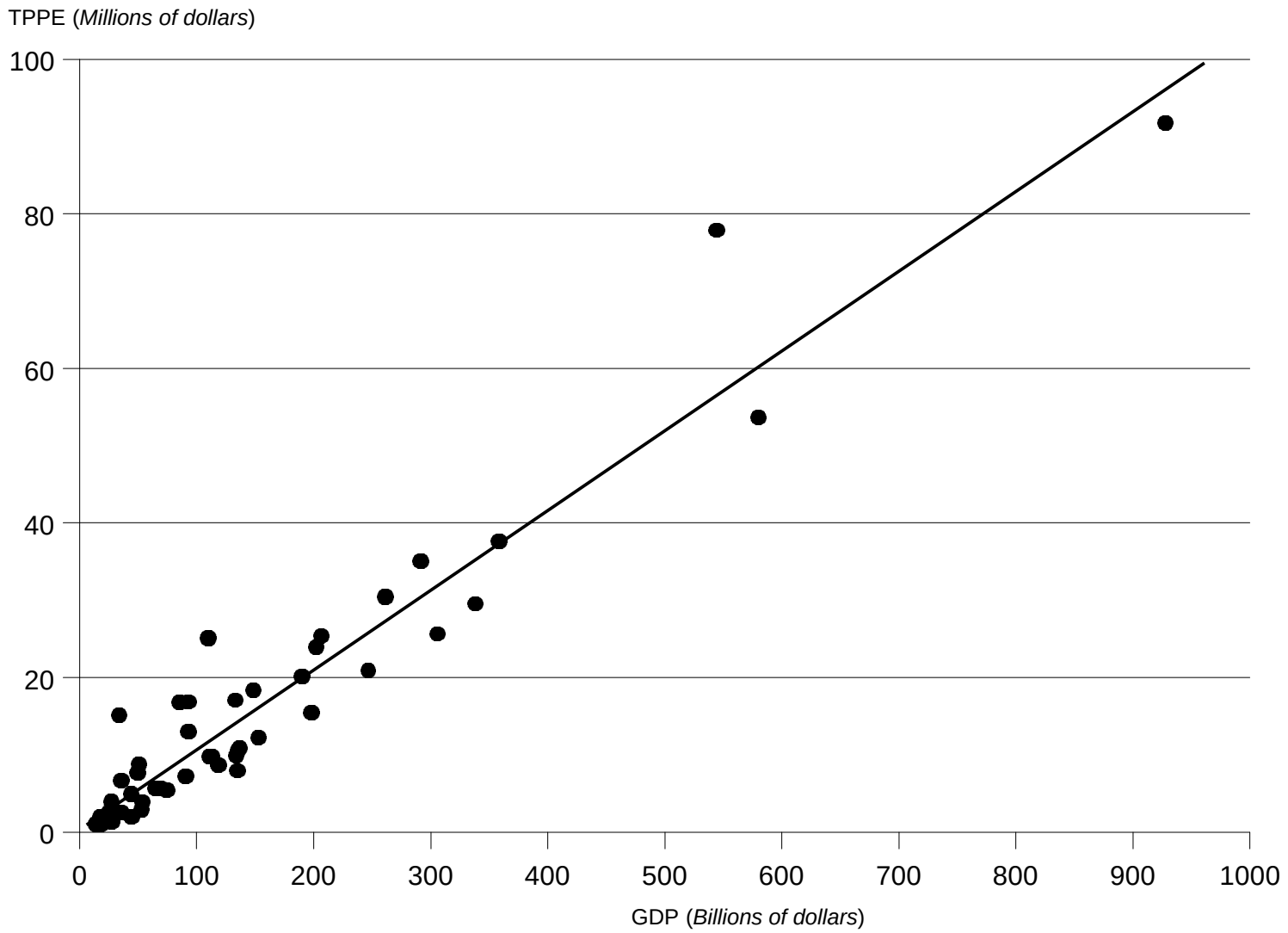
[15] The correlation coefficient between total property, plant, and equipment in foreign affiliates and state gross domestic product, an indicator of market size, is 0.957.

[16] USDOC, BEA, *FDIUS*, 1990-97.

[17] Organization for International Investment, "Investing in American Jobs," Nov. 1999, p. 7.

[18] Data on FDIUS employment from USDOC, BEA; data on total state employment from U.S. Department of Labor, Bureau of Labor Statistics. Data on the percentage of total PPE by state is not available.

Figure 4-4
Scatter plot of total property, plant, and equipment on gross domestic product



Source: Compiled by the Commission.

Table 4-4
FDIUS: Property, plant, and equipment (PPE) and employment of U.S. affiliates, by state, 1997

State	PPE	Percent of PPE for all states	Employment	Percent of employment for all states	FDIUS employment as percent of total state employment, 1997
	Millions of dollars		*Thousands*		
California	91,788	10.6	569.4	11.0	3.8
Texas	77,906	9.0	350.6	6.8	3.8
New York	53,711	6.2	351.5	6.8	4.3
Illinois	37,649	4.3	224.5	4.3	3.8
Ohio	35,095	4.1	234.1	4.5	4.3
New Jersey	30,488	3.5	212.4	4.1	4.3
Florida	29,598	3.4	240.9	4.7	3.6
Alaska	25,922	3.0	8.7	0.2	3.0
Pennsylvania	25,671	3.0	225.0	4.4	4.0
Georgia	25,403	2.9	188.9	3.7	5.1
Louisiana	25,151	2.9	58.0	1.1	3.1
North Carolina	24,019	2.8	225.0	4.4	6.1
Michigan	20,914	2.4	171.4	3.3	3.6
Virginia	20,158	2.3	143.3	2.8	4.4
Indiana	18,367	2.1	128.3	2.5	4.3
Tennessee	17,123	2.0	149.4	2.9	5.8
Kentucky	16,909	2.0	89.5	1.7	4.9
South Carolina	16,847	1.9	116.9	2.3	6.3
Massachusetts	15,473	1.8	159.5	3.1	5.1
Hawaii	15,157	1.8	50.1	1.0	9.0
Alabama	13,006	1.5	65.0	1.3	3.2
Washington	12,275	1.4	86.6	1.7	3.0
Missouri	10,945	1.3	84.0	1.6	3.0
Maryland	10,578	1.2	92.0	1.8	3.5
Minnesota	9,972	1.2	96.6	1.9	3.8
Colorado	9,833	1.1	80.3	1.6	3.8
Arizona	9,797	1.1	59.4	1.2	2.9
Nevada	8,784	1.0	25.5	0.5	3.0
Connecticut	8,703	1.0	83.8	1.6	5.1
Wisconsin	8,003	0.9	76.5	1.5	2.7
Utah	7,719	0.9	36.7	0.7	3.6
Oregon	7,269	0.8	52.0	1.0	3.2
West Virginia	6,714	0.8	27.2	0.5	3.6
Oklahoma	5,723	0.7	34.4	0.7	2.2
Kansas	5,696	0.7	45.4	0.9	3.4
Iowa	5,444	0.6	37.8	0.7	2.5
Wyoming	4,956	0.6	6.9	0.1	2.9
New Mexico	4,945	0.6	17.4	0.3	2.3
District of Columbia	4,339	0.5	11.2	0.2	4.7
Maine	3,960	0.5	31.6	0.6	5.1
Arkansas	3,934	0.5	35.2	0.7	3.1
Delaware	3,323	0.4	19.1	0.4	5.2
Mississippi	2,967	0.3	21.7	0.4	1.8
Rhode Island	2,628	0.3	18.5	0.4	3.9
New Hampshire	2,546	0.3	31.6	0.6	5.1
Montana	2,041	0.2	4.4	0.1	1.0

Table 4-4--*Continued*
FDIUS: Property, plant, and equipment (PPE) and employment of U.S. affiliates, by state, 1997

State	PPE	Percent of PPE for all states	Employment	Percent of employment for all states	FDIUS employment as percent of total state employment, 1997
	Millions of dollars		*Thousands*		
Nebraska	2,027	0.2	20.8	0.4	2.4
Puerto Rico	1,686	0.2	17.1	0.3	([1])
Idaho	1,407	0.2	12.4	0.2	2.1
North Dakota	1,166	0.1	3.5	0.1	1.0
Vermont	1,031	0.1	9.6	9.6	3.1
South Dakota	986	0.1	10.4	10.4	2.8
Total	830,704	100.0	5,164.3	100.0	

[1] Not available.

Source: Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* annual publication, 1997, tables D-12 and G-7.

industries"[19] accounting for large shares as well (table 4-5). With respect to property, plant, and equipment, foreign investment in California is concentrated in manufacturing, wholesale trade, real estate, and other industries. In New York, real estate accounts for almost one-third of all PPE, followed by manufacturing. Employment among U.S. affiliates in New York is highest in manufacturing, followed by retail trade and other industries.[20]

Which countries' affiliates have the most sales in the United States?

Affiliates with parents based in seven industrial countries accounted for 82.0 percent of total 1997 sales by U.S. affiliates (figure 4-5), reflecting the high concentration of foreign direct investment in the United States. These countries are Japan, the United Kingdom, Germany, Canada, France, the Netherlands, and Switzerland. Japan's U.S. affiliates alone

[19] This category includes agriculture, mining, construction, transportation, communications, and public utilities services.

[20] USDOC, BEA, *FDIUS*, 1990-97.

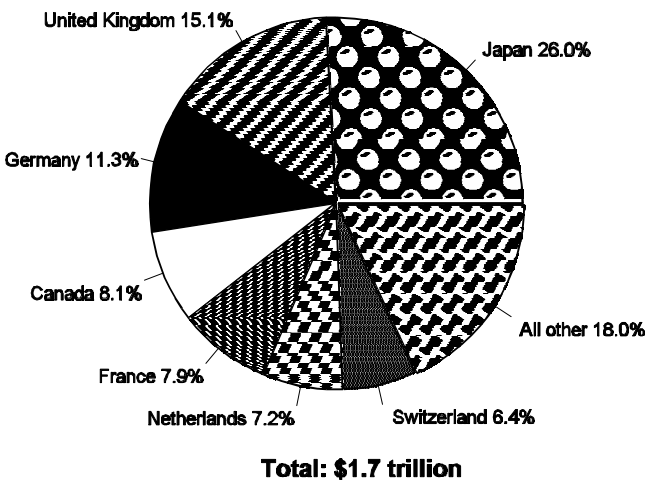
Table 4-5
FDIUS: Property, plant, and equipment (PPE) and employment of U.S. affiliates, selected states by industry, 1997

	Total	Manufacturing	Wholesale	Retail	Information	Finance[1] and insurance	Real estate	Professional services	Other industries
California									
Employment	569.4	192.2	104.3	46.7	42.0	21.8	8.0	14.7	139.7
PPE	91,788	26,109	17,149	2,701	7,527	2,398	21,325	1,104	13,474
New York									
Employment	351.5	85.4	34.0	66.4	39.5	49.9	5.9	11.8	58.8
PPE	53,711	9,565	6,897	3,564	4,784	5,197	16,085	765	6,853
Texas									
Employment	350.6	154.3	37.9	34.0	18.1	10.6	3.8	7.6	84.2
PPE	77,906	44,398	8,627	2,365	4,635	945	5,879	258	10,799
Illinois									
Employment	224.5	111.6	23.8	10.1	15.9	15.3	2.9	4.4	40.6
PPE	37,649	15,919	4,280	660	2,058	1,322	9,389	149	3,873
Ohio									
Employment	234.1	144.1	15.2	19.5	9.7	3.1	0.7	2.6	39.3
PPE	35,095	24,441	2,810	864	3,159	482	1,397	140	1,802
Florida									
Employment	240.9	63.7	19.6	46.6	12.2	6.5	3.6	1.4	87.2
PPE	29,598	7,595	3,785	1,762	4,906	471	4,528	66	6,485
All									
Employment	5164.3	2227.0	538.5	688.7	293.4	219.8	47.0	82.6	1067.3
PPE[2]	866,197	394,613	104,670	32,067	64,471	37,435	94,233	4,323	134,387

[1] Does not include depository institutions.
[2] Includes data for PPE held by U.S. affiliates outside the United States and PPE not permanently located in a particular state, such as aircraft, railroad rolling stock, satellites, and undersea cable.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates*, annual publication, 1997, tables D-12 and G-7.

Figure 4-5
FDIUS: Sales by U.S. affiliates, by country, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States, Preliminary Results from the 1997 Benchmark Survey*, table A-2.

Seven industrial countries account for more than 80 percent of sales by U.S. affiliates.

account for more than one-fourth of all sales by foreign-owned firms, or $446.4 billion in 1997. British-owned affiliates recorded sales of $258.8 billion in 1997, accounting for 15.1 percent of U.S. affiliates' total sales. German-owned affiliates ranked third in terms of sales, with a total of $194.5 billion (table 4-6).[21]

U.S. affiliates parented by Singaporean, Norwegian, and Taiwanese firms increased sales most rapidly during 1990-97. However, these affiliates accounted for only 0.3 percent, 0.7 percent, and 0.6 percent, respectively, of sales by U.S. affiliates in 1997. Among U.S. affiliates with larger market shares, those owned by German, Swiss, and Dutch parents recorded the fastest sales growth, with average annual increases of 8.7 percent, 8.5 percent, and 8.1 percent, respectively, compared to average growth of 5.6 percent for all U.S. affiliates. By contrast, affiliates from countries that represent the largest shares of affiliate sales posted much slower growth rates. U.S. affiliates of Japanese parents recorded 5.0-percent average annual sales growth. Sales by affiliates of British and Canadian parent companies also increased relatively slowly, at average annual rates of 4.5 percent and 1.9 percent, respectively.[22]

[21] USDOC, BEA, *FDIUS*, 1990-97.
[22] Ibid.

Table 4-6
FDIUS: Sales by U.S. affiliates, by country, 1990 and 1997

Country	1990		1997		Average annual growth	Standard deviation
	Millions of dollars	*Percent of total*	*Millions of dollars*	*Percent of total*	*Percent*	
Argentina	177	0.0	480	0.0	-8.7	27.6
Australia	31,738	2.7	26,132	1.5	-1.3	15.2
Austria	1,881	0.2	2,378	0.1	4.4	14.8
Belgium	15,629	1.3	23,298	1.4	6.0	6.0
Bermuda	7,527	0.6	12,631	0.7	15.1	48.3
Brazil	2,198	0.2	3,999	0.2	9.7	13.1
Canada	126,155	10.7	139,409	8.1	1.9	9.8
Chile	154	0.0	171	0.0	4.7	24.7
China	2,083	0.2	1,868	0.1	-0.8	12.4
Finland	6,143	0.5	9,674	0.6	7.0	8.0
France	81,915	7.0	135,414	7.9	7.7	6.8
Germany	108,547	9.2	194,492	11.3	8.7	2.9
Hong Kong	4,114	0.3	6,265	0.4	6.5	8.3
Indonesia	[1]569	0.0	1,362	0.1	17.6	21.2
Ireland	5,226	0.4	9,585	0.6	9.4	8.5
Israel	819	0.1	2,509	0.1	18.3	15.3
Italy	14,058	1.2	15,995	0.9	2.0	5.0
Japan	318,716	27.1	446,422	26.0	5.0	2.5
Korea	8,366	0.7	21,755	1.3	16.0	18.1
Luxembourg	2,312	0.2	4,229	0.2	12.2	25.2
Mexico	3,104	0.3	8,145	0.5	16.2	18.4
Netherlands	72,784	6.2	124,109	7.2	8.1	5.9
Netherlands Antilles	2,860	0.2	[1]2,983	0.0	1.1	8.4
Norway	1,915	0.2	11,873	0.7	30.8	16.4
Panama	3,837	0.3	2,284	0.1	-5.5	15.8
Singapore	440	0.0	4,381	0.3	42.3	33.9
South Africa	5,151	0.4	10,278	0.6	13.2	26.2
Spain	849	0.1	1,800	0.1	13.1	19.7
Sweden	28,281	2.4	31,401	1.8	1.6	5.3
Switzerland	63,011	5.4	110,077	6.4	8.5	7.1
Taiwan	2,102	0.2	10,755	0.6	27.0	13.8
United Kingdom	192,317	16.4	258,845	15.1	4.5	6.5
U.K. Islands, Caribbean	1,393	0.1	2,448	0.1	13.2	31.8
Eastern Europe[2]	1,227	0.1	1,581	0.1	4.9	16.7
European Union	533,033	45.3	816,350	47.5	6.3	3.6
All countries	1,175,857	100.0	1,717,240	100.0	5.6	2.8

[1] Data not available.

[2] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* annual publication, 1990-97, table A-2.

Is there a greater level of FDIUS in services or in goods? How do the growth rates compare in the two sectors?

The service sector accounts for more than one-half of FDIUS stock.

During 1990-98, the foreign direct investment position in the services and manufacturing sectors increased at average annual rates of 10.6 percent and 10.2 percent, respectively. In 1998, foreign direct investment stock in the service sector measured $419.0 billion, or 51.6 percent of total FDIUS, while cumulative direct investment in manufacturing measured $329.3 billion, or 40.6 percent of the total (table 4-7). The petroleum sector accounted for an additional direct investment stock of $50.7 billion, or 6.2 percent, with mining and agriculture accounting for the remainder (figure 4-6). The service sector accounted for a majority of the cross-border acquisitions of U.S. firms during 1990-97 as well, with 3,652 foreign acquisitions of U.S. service firms, 59.0 percent of the total, valued at more than $218 billion. The same period witnessed 2,210 foreign acquisitions of U.S. manufacturing firms, valued at more than $141 billion, representing 35.9 percent of the total.[23]

The service sector represents a much larger proportion of FDIUS when total assets of foreign-owned affiliates are used as a measure. Service sector affiliates accounted for 73.4 percent of total assets in 1997, compared with 21.4 percent for the manufacturing sector and 4.1 percent for the petroleum sector. The bulk of the assets in the service sector (74.4 percent) are controlled by companies in the finance, insurance, and real estate industries. Large shares of assets in these companies are financial assets rather than property, plant, and equipment. Service sector assets increased at an average annual rate of 12.2 percent annually, versus 10.1 percent for all sectors (table 4-8). This relatively rapid increase likely reflects the results of liberalization in the U.S. telecommunications, electricity, and water utilities markets, and the increased value of financial assets during a decade of rising securities markets. Assets of manufacturing affiliates increased at a 6.1-percent average annual rate, and petroleum assets increased at a slower annual rate of 3.4 percent. The mining sector also posted strong asset growth, but increased from a smaller base. Total assets of foreign-owned mining affiliates grew at a 14.5-percent average annual rate during the period, from $17.0 billion to $31.4 billion.[24]

In which industries is FDIUS stock largest?

Within the service sector, the wholesale trade and insurance industries accounted for the greatest shares of inbound investment stock, equal to 23.0 percent, or $96.3 billion, and 19.2 percent, or $80.4 billion, respectively, in 1998

[23] USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 85-86; Oct. 1998, pp. 108-109; and Sept. 1999, pp. 55-56.

[24] USDOC, BEA, *FDIUS,* 1990-97.

Table 4-7
FDIUS: Direct investment position[1] on a historical-cost basis, by industry, 1990 and 1998

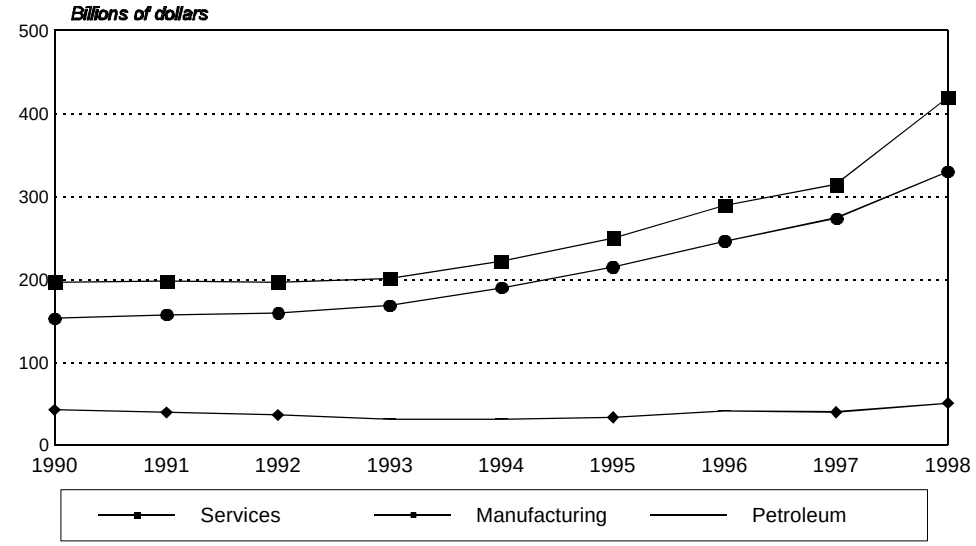
Industry	1990		1998		Average annual growth	Standard deviation
	Millions of dollars	*Percent*	*Millions of dollars*	*Percent*	*Percent*	
Petroleum	42,374	10.7	50,668	6.2	3.2	14.4
Manufacturing	152,805	38.7	329,346	40.6	10.2	6.1
Food and kindred products	22,543	5.7	18,112	2.2	-1.4	15.2
Chemicals and allied products	45,746	11.6	101,351	12.5	10.5	3.9
Pharmaceuticals	11,528	2.9	46,976	5.8	19.9	13.3
Primary and fabricated metals	13,713	3.5	22,512	2.8	7.3	14.0
Machinery	11,527	2.9	23,406	2.9	19.6	52.4
Other manufacturing	59,275	15.0	163,965	20.2	14.2	12.9
Textile products and apparel	1,785	0.5	3,843	0.5	11.0	10.2
Transportation equipment	3,647	0.9	34,879	4.3	38.1	44.6
Services	189,850	48.1	419,001	51.6	10.6	7.3
Wholesale trade	50,910	12.9	96,261	11.9	8.4	5.6
Retail trade	9,242	2.3	18,778	2.3	9.8	10.8
Securities	6,042	1.5	[1]35,344	4.4	50.9	102.4
Insurance	27,121	6.9	80,378	9.9	15.0	10.1
Depository institutions	18,442	4.7	44,785	5.5	12.8	15.2
Other services	30,592	7.8	50,252	6.2	7.5	15.4
Motion pictures	9,404	2.4	3,118	0.4	-8.1	29.2
Construction	4,110	1.0	4,866	0.6	7.2	36.3
Transportation	2,285	0.6	11,656	1.4	26.0	30.8
Communications and public utilities	3,278	0.8	14,061	1.7	21.6	20.5
Communications	1,062	0.3	11,179	1.4	45.2	66.0
Electric, gas, and sanitary services	2,216	0.6	2,881	0.4	10.8	40.9
Real estate	34,939	8.9	44,436	5.5	3.4	8.3
Agriculture, forestry and fishing	1,113	0.3	2,047	0.3	8.2	8.2
Mining	([2])	([2])	10,695	1.3	9.4	4.9
All industries	394,911	100.0	811,756	100.0	9.6	5.2

[1] Direct investment position is the sum of foreign parents' equity holdings in their U.S. affiliates (including retained earnings), plus the net outstanding loans that foreign parents have made to these affiliates. Direct investment position is negative when the value of loans made by U.S. affiliates to their foreign parent companies exceeds the value of the parents' equity holdings plus the value of loans made by the parent to its affiliate companies.

[2] Not available.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business*, Aug. 1995, pp. 85-86; USDOC, BEA, *Survey of Current Business*, Oct. 1998, pp. 108-109; and USDOC, BEA, *Survey of Current Business*, Sept. 1999, pp. 55-56.

Figure 4-6
FDIUS: Direct investment position, by sector, 1990-98



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Oct. 1999, pp. 55-56; Oct. 1998, pp. 108-109; and Aug. 1998; pp. 85-86.

(figure 4-7). During 1990-98, the most rapid growth in inbound foreign investment stock occurred in the securities and communications industries, with average annual growth rates of 50.9 percent and 45.2 percent, respectively[25] (see table 4-7). The wholesale trade industry recorded inbound investment growth of 8.4 percent annually, on average, slightly slower than the average for all industries.[26] However, foreign firms acquired 339 U.S. wholesale trade firms during 1990-97, more than in any other service sector industry. Inbound investment in the insurance industry grew by 15.0 percent on an average annual basis. Foreign firms acquired 110 U.S. insurance firms during 1990-97, with a combined value of $24.0 billion.[27]

Within the manufacturing sector, the chemicals industry attracted the most foreign direct investment, with direct investment stock measuring $101.4 billion in 1998. Almost half of this amount is invested in the pharmaceuticals industry. Foreign direct investment in the chemicals industry recorded average annual growth of 10.5 percent during 1990-98, and direct investment in pharmaceuticals

[25] Holding companies, which BEA includes within the finance category in its data, also grew at a very fast average annual rate of 26.1 percent. Since holding companies are generally set up for tax or legal reasons to house operating companies in other industries, they are not discussed as a separate industry in this study.

[26] USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 85-86; Oct. 1998, pp. 108-109; and Sept. 1999, pp. 55-56.

[27] KPMG Corporate Finance, cross-border mergers and acquisitions database.

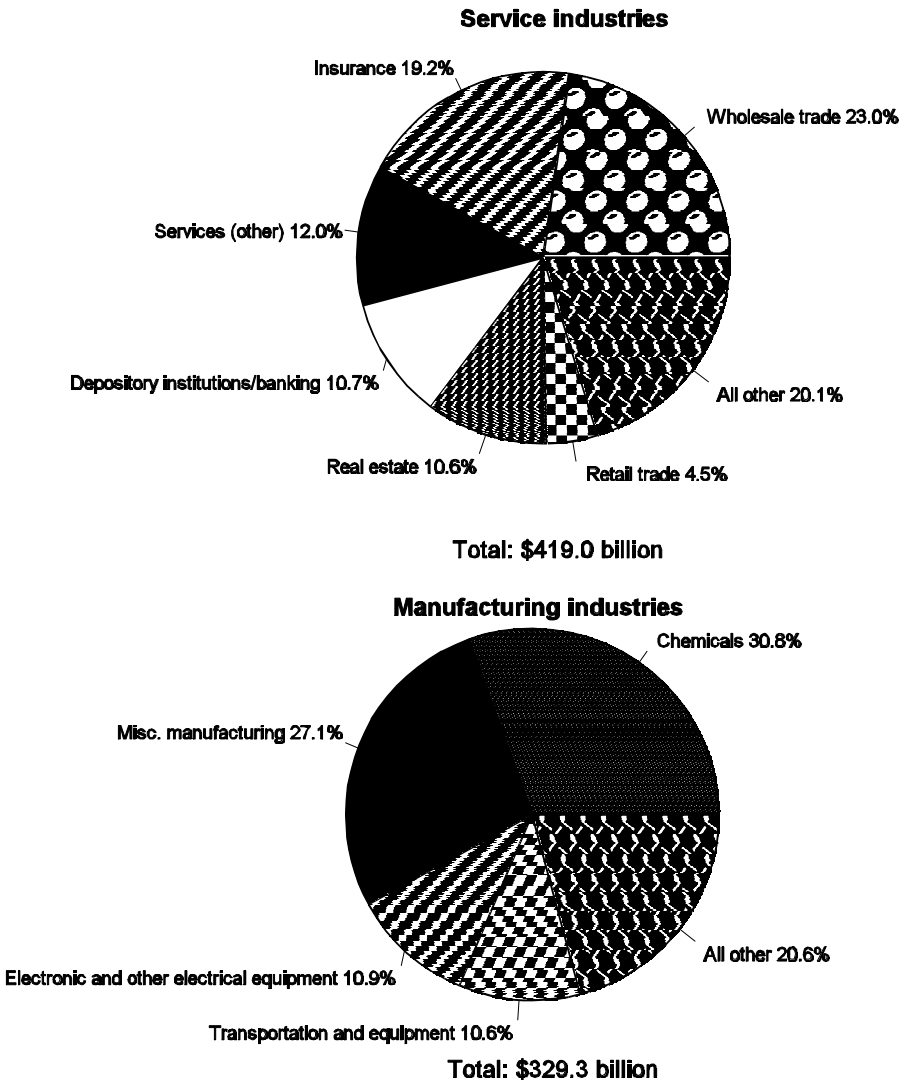
Table 4-8
FDIUS: Assets of U.S. affiliates, by industry, 1990 and 1997

Industry	1990	1997	Average annual growth	Standard deviation
	Millions of dollars		*Percent*	
Petroleum	99,284	123,753	3.4	6.5
Manufacturing	429,079	648,564	6.1	1.3
Food	45,987	66,600	5.5	3.9
Chemicals	137,803	191,541	5.0	5.5
Pharmaceuticals	26,766	76,959	17.1	13.9
Metals	47,536	70,431	6.0	6.6
Machinery	74,941	122,759	7.4	5.0
Other manufacturing	122,811	197,233	7.2	6.1
Textiles	5,676	8,606	6.7	11.3
Transportation equipment	15,453	43,027	16.6	14.6
Services	999,848	2,225,895	12.2	5.0
Wholesale trade	160,276	266,063	7.5	2.1
Retail	46,898	54,723	2.8	10.2
Securities	328,603	847,626	14.7	6.3
Insurance	205,567	704,133	19.9	12.9
Real estate	112,353	104,334	-1.0	1.5
Other services	86,243	113,797	4.5	9.5
Motion pictures	24,392	19,561	3.0	38.2
Construction	14,796	11,787	-2.2	13.9
Transportation	25,500	30,197	3.9	18.5
Communications and public utilities	17,558	93,235	28.6	21.7
Communications[1]	12,153	65,198	36.5	57.7
Utilities[1]	5,405	12,549	15.6	41.7
Agriculture	5,084	4,765	-0.5	8.6
Mining	16,945	31,427	14.5	6.0
All Industries	1,550,238	3,034,404	10.1	3.4

[1] Data for 1996. Due to the introduction of the North American Industry Classification System (NAICS), 1997 data are not available from the Bureau of Economic Analysis (BEA).

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates*, annual publication, 1990-97, table A-2.

Figure 4-7
FDIUS: Direct investment position, by major industries, 1998[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Oct. 1999, pp. 55-56; Oct. 1998, pp. 108-109; and Aug. 1998; pp. 85-86.

grew by 19.9 percent annually during the period.[28] Since 1995, European companies in particular have increased foreign direct investment in the U.S. chemicals and pharmaceuticals industries[29] in order to improve their competitive position in the U.S. chemicals market, the world's largest in terms of production,

[28] USDOC, BEA, *Survey of Current Business,* Aug. 1995, pp. 85-86; Oct. 1998, pp. 108-109; and Sept. 1999, pp. 55-56.

[29] See Pharmaceutical Research and Manufacturers of America, "Industry Profile 1998," found at Internet address http://www.searchforcures.com/, retrieved Apr. 14, 2000; and European Chemical Industry Council, "1998 Barometer of Competitiveness, found at Internet address http://www.cefic.be/activities/, retrieved Apr. 14, 2000.

sales, and R&D.[30] Foreign firms acquired a total of 525 U.S. chemical firms during 1990-97, more than in any other industry (table 4-9).[31]

Foreign investment in the transportation equipment industry recorded the fastest growth in the manufacturing sector, with average annual increases of 38.1 percent during 1990-98, largely due to a one-year jump of 147.4 percent in 1998, a result of the acquisition of the Chrysler Corporation by Daimler-Benz A.G. of Germany. The total foreign direct investment position in the U.S. transportation equipment industry increased from $3.7 billion in 1990 to $14.1 billion in 1997, then jumped to $34.9 billion in 1998. Even before the Daimler-Chrysler merger, however, average annual growth of direct investment in transportation equipment measured 22.5 percent, among the highest for any industry. This reflected new investment by BMW, Mercedes, a number of German auto parts suppliers, and the expansion of manufacturing facilities by several Japanese automobile manufacturers and parts suppliers.[32]

In which industries do U.S. affiliates employ the greatest number of people in the United States? In which industry do U.S. affiliates account for the greatest share of total employment? Which countries' affiliates employ the greatest number of people in the United States?

Foreign-owned affiliates employed a total of 5.2 million U.S. workers in 1997, 52.9 percent of whom were employed in the service sector, 44.0 percent in the manufacturing sector, and 2.0 percent in the petroleum sector (table 4-10 and figure 4-8). In the service sector, the largest employer was the retail distribution industry, with 839,200 U.S. workers employed by foreign-owned, U.S. affiliates, followed by wholesale distribution affiliates, with 522,500 workers. Affiliates in the communications industry recorded by far the strongest growth in employment, at 56.0 percent on an average annual basis, from only 12,000 employees in 1990 to 122,500 in 1996.[33] Total service sector employment among U.S. affiliates increased at an average annual rate of 2.4 percent during the period.[34]

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[30] R&D measured as number of U.S. patents granted to U.S. vs. other countries. Chemical Manufacturers Association, "U.S. Chemical Industry Statistical Handbook 1998," pp. 64 and 103.

[31] KPMG Corporate Finance, cross-border mergers and acquisitions database.

[32] See, for example, *Ward's Automotive Yearbook 1993,* p. 151, and the 1995 edition, p. 118.

[33] This strong growth reflects the liberalization of the U.S. telecommunications market during the 1990s. Due to the introduction of the NAICS system, BEA did not report separate employment data for this industry in 1997.

[34] USDOC, BEA, *FDIUS,* 1990-97.

Table 4-9
Cross-border acquisitions: United States as selling country, by industry, 1990-97

Industry	Number of deals	Value of deals	Percentage of total deals
		Millions of dollars	*Percent*
Petroleum	152	9,464,867	2.5
Manufacturing	2,210	141,676,221	35.7
Food and kindred products	187	18,856,232	3.0
Chemicals and allied products	525	59,570,659	8.5
Primary and fabricated metals	193	7,819,110	3.1
Machinery	165	5,546,940	2.7
Other manufacturing	1,140	49,883,280	18.4
Textile products and apparel	88	1,755,232	1.4
Transportation equipment	194	8,330,354	3.1
Services	3,652	218,205,527	59.0
Wholesale trade	339	12,213,043	5.5
Retail trade	120	12,498,627	1.9
Finance, except depository institutions	257	28,551,902	4.2
Insurance	110	23,992,883	1.8
Other Services	2,250	100,484,287	36.4
Construction	61	1,722,950	1.0
Transportation	140	4,447,460	2.3
Communications and public utilities	244	21,730,179	3.9
Communications	156	16,914,304	2.5
Electric, gas, and sanitary services	88	4,815,875	1.4
Real estate	131	12,564,196	2.1
Agriculture, forestry and fishing	24	3,093,660	0.4
Mining	150	9,374,024	2.4
All industries	6,188	381,814,299	100.0

[1] This data is compiled from press reports. Figures may not add to totals, due to the difficulty of identifying the industry in some corporate merger announcements, and to the fact that the values cited in press reports are subject to change due to fluctuations in corporate share prices and other factors.

Source: KPMG Corporate Finance, cross-border mergers and acquisitions database, received Aug. 1999.

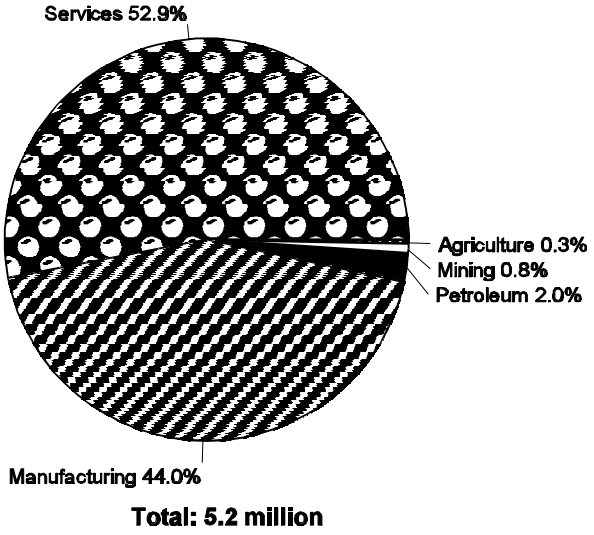
Table 4-10
Employment by U.S. affiliates, and employment by U.S. affiliates as percentage of U.S. industry total,1990 and 1997

Industry	1990		1997		Average annual growth	Standard deviation	FDIUS employment as percent of total U.S. employment, by industry, 1997
	Thousands	*Percent*	*Thousands*	*Percent*	*Percent*		
Petroleum	135	2.9	105	2.0	0.3	6.5	22.0
Manufacturing	2,221	46.9	2,271	44.0	0.3	1.3	12.1
Food and kindred products	247	5.2	172.4	3.3	-4.3	11.5	9.9
Chemicals and allied products	513	10.8	393.1	7.6	-3.5	6.4	37.9
Pharmaceuticals	115	2.4	143.5	2.8	3.7	10.1	(1)
Primary and fabricated metals	256	5.4	236.5	4.6	-1.0	4.5	10.8
Machinery	509	10.7	606.5	11.7	2.6	3.4	15.7
Other manufacturing	696	14.7	862.4	16.7	3.1	2.2	(1)
Textile products and apparel	60	1.3	78.2	1.5	4.5	11.7	5.4
Transportation equipment	88	1.9	178	3.4	10.7	5.0	9.7
Services	2,322	49.0	2,731.4	52.9	2.4	4.2	3.2
Wholesale trade	430	9.1	522.5	10.1	2.9	3.6	7.8
Retail trade	745	15.7	839.2	16.3	1.9	6.3	3.7
Finance, except depository institutions	54	1.1	60.3	1.2	2.2	11.4	1.2
Insurance	133	2.8	165	3.2	3.3	5.8	7.2
Real estate	43	0.9	24.7	0.5	-7.3	7.3	1.7
Other services	570	12.0	682.9	13.2	2.7	4.3	1.8
Motion pictures, including television tape and film	43	0.9	39.5	0.8	1.0	22.1	7.0
Construction	92	1.9	71.9	1.4	-2.3	14.7	1.2
Transportation	193	4.1	199.4	3.9	1.1	11.4	4.8
Communications and public utilities	46	1.0	165.5	3.2	23.4	29.4	7.2
Communications[2]	12	0.3	122.5	2.4	56.0	57.3	9.1
Electric, gas, and sanitary services[2]	34	0.7	14.7	0.3	-0.2	39.8	1.7
Agriculture	21	0.4	13.8	0.3	-4.8	14.0	0.6
Mining	(1)	(1)	43.1	0.8	(1)	(1)	7.2
All industries	4,735	100.0	5,164.3	100.0	1.3	2.0	4.8

[1] Not available.
[2] Data for 1990 and 1996. Bureau of Economic Analysis did not report separate data for this industry in 1997.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates*, annual publication, 1990-97, table A-1 (table O-1 for 1997).

Figure 4-8
FDIUS: Employment by U.S. affiliates, by industry, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States, Preliminary Results from the 1997 Benchmark Survey*, table A-1.

The largest employer within the manufacturing sector was the machinery industry, with 606,500 U.S. workers in 1997, followed by the chemicals industry, with 393,100 workers. The chemicals industry recorded an average annual employment decline of 3.5 percent during 1990-97, perhaps reflecting the decline in profits for the entire domestic U.S. chemicals industry during the late 1990s.[35] However, the pharmaceuticals component of the chemicals industry posted an average annual increase in employment of 3.7 percent during the same period. Employment increased most rapidly in the transportation equipment industry, by an average annual rate of 10.7 percent.[36] This increase reflects new investment by German automakers BMW and Mercedes, German and Japanese auto parts suppliers, and expansion by several Japanese-owned automobile affiliates.[37]

U.S. affiliates accounted for almost 5 percent of U.S. private-sector employment in 1997.

Overall, employment by U.S. affiliates accounted for 4.8 percent of total U.S. private-sector employment in 1997, but there was wide variation by industry. Employment by foreign-owned, U.S. affiliates was most prominent in the chemicals and petroleum industries. U.S. chemical affiliates accounted for 37.9 percent of employment in the domestic chemicals industry, and petroleum affiliates accounted for 22 percent of workers employed by the petroleum industry. In the manufacturing sector as a whole, 12.1 percent of workers were employed by foreign-owned affiliates. U.S. affiliates claimed a smaller share of workers in

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[35] See, for example, "World Chemical Outlook," *Chemical & Engineering News*, Dec. 13, 1999, pp. 15-17.

[36] USDOC, BEA, *FDIUS*, 1990-97.

[37] See *Ward's Automotive Yearbook 1993*, p. 151, and the 1995 edition, p. 118.

the service sector, with an average for the sector of 3.1 percent. Employment by U.S. service affiliates was highest in the communications industry, representing 9.1 percent of the domestic industry's workforce;[38] the wholesale trade industry, 7.8 percent; and the insurance industry, 7.2 percent.[39]

Affiliates of British-owned firms employed 988,200 U.S. workers in 1997, or 19.0 percent of all workers employed by U.S. affiliates. Japanese-owned affiliates and German-owned affiliates employed 15.7 percent and 12.7 percent, respectively, of workers in U.S. affiliates (figure 4-9). Among U.S. affiliates of the large industrial countries, the fastest growing in terms of employment were those of the Netherlands, which recorded average annual growth of 4.8 percent during 1990-97 (table 4-11). U.S. affiliates owned by Japanese and Swiss parents each recorded average annual employment growth of 3.8 percent during the period, and affiliates of German parent companies saw employment increase at a 3.6-percent annual rate, on average. Argentine-owned, U.S. affiliates increased employment most rapidly, averaging annual growth of 86.1 percent during 1990-97. U.S. affiliates with parents in Bermuda, Chile, Israel, Korea, Norway, and Singapore also recorded relatively high employment growth, averaging annual growth of 15 percent or more. However, in 1997, affiliates from the seven countries growing fastest in terms of employment accounted for less than 150,000 U.S. employees, only 2.9 percent of the total for all U.S. affiliates.[40]

How do the wages of employees of U.S. affiliates compare to overall U.S. wages?

Employees of foreign-owned U.S. affiliates received average annual compensation[41] of $44,600 in 1997, compared with average annual compensation of $35,100 for all U.S. companies (table 4-12).[42] For the

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[38] This figure is from 1996. BEA did not report separate FDIUS employment figures for the communications industry in 1997.

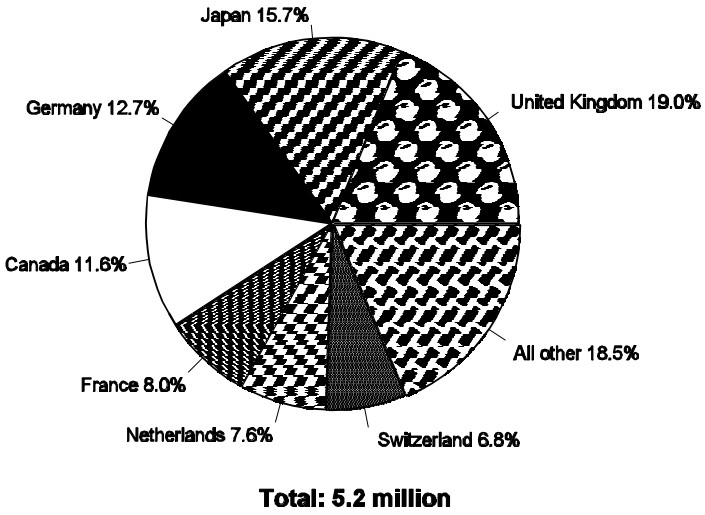
[39] USDOC, BEA, *FDIUS*, 1990-97.

[40] Ibid.

[41] For the purposes of this paper, wages are equal to total compensation paid by employers, divided by the total number of full-time and part-time employees. The term thus actually reflects total compensation per employee (including non-wage compensation such as benefits). High-wage industries are those for which total compensation per employee was greater than the average compensation per employee for all private U.S. industries of $35,100 in 1997. Calculations by the Commission from BEA data.

[42] Includes data from foreign-owned affiliates.

Figure 4-9
FDIUS: Employment by U.S. affiliates, by country, 1997[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States, Preliminary Results from the 1997 Benchmark Survey*, table A-2.

Foreign-owned affiliates generally pay higher-than-average compensation per employee.

majority of the 22 industries for which comparable data exist, foreign-owned affiliates paid more than the U.S. average in 1997. However, for industries that pay the highest salaries, U.S. affiliates usually pay lower wages than the domestic industry average. These industries include petroleum, chemicals, machinery manufacturing, transportation equipment manufacturing, and communications.[43]

The mining and finance industries show the greatest wage differential between U.S. affiliates and average wages for domestic-owned companies. Average compensation for employees of foreign-owned mining affiliates is more than $64,700, while the average in the U.S. mining industry is $23,800.[44] In the finance industry, average domestic compensation is only

[43] USDOC, BEA, *FDIUS*, 1990-97; and USDOC, BEA, *Survey of Current Business*, Aug. 1998, pp. 79-81.

[44] Wages in the mining industry vary dramatically based on the type of mine and the type of employment. In Wyoming, for example, 1996 annual mining wages varied between $21,000 and $56,000, depending on the position. Wyoming Department of Employment, found at Internet address http://lmi.state.wy.us/, retrieved May 12, 2000. The difference between wages of U.S. mining companies and foreign-owned affiliates most likely reflects foreign investment concentrated in the higher-paid areas of the mining industry.

Table 4-11
FDIUS: Employment by U.S. affiliates, by country, 1990 and 1997

Country	1990		1997		Average annual growth	Standard deviation
	Thousands	*Percent of total*	*Thousands*	*Percent of total*	*Percent*	
Argentina	0.1	0.0	0.7	0.0	86.1	210.0
Australia	166.2	3.5	80.1	1.6	-7.5	18.2
Austria	6.4	0.1	5.9	0.1	-0.4	11.5
Belgium	86.1	1.8	121.2	2.3	5.2	6.5
Bermuda	34.2	0.7	77.9	1.5	16.4	33.7
Brazil	3.2	0.1	4.5	0.0	6.2	16.4
Canada	739.1	15.6	601.6	11.6	-2.3	10.5
Chile	0.1	0.0	0.3	0.0	24.3	51.8
China	1.6	0.0	1.6	0.0	1.5	17.2
Finland	24.4	0.5	25.3	0.5	0.6	4.7
France	338.9	7.2	411.2	8.0	3.2	8.8
Germany	516.2	10.9	657.6	12.7	3.6	3.0
Hong Kong	24.9	0.5	34.5	0.7	5.4	11.2
Indonesia	[1]3.5	0.1	[2]5.4	0.1	9.6	10.9
Ireland	32.6	0.7	39.4	0.8	2.9	5.7
Israel	3.1	0.1	9.3	0.2	17.7	12.8
Italy	40.2	0.8	48.8	0.9	3.1	7.4
Japan	629.2	13.3	812.4	15.7	3.8	4.4
Korea	8.3	0.2	18.4	0.4	15.3	28.5
Luxembourg	17.2	0.4	13.4	0.3	2.0	32.0
Mexico	14.9	0.3	26.7	0.5	11.7	25.9
Netherlands	286.5	6.1	391.4	7.6	4.8	6.6
Netherlands Antilles	19.5	0.4	[2]16.5	0.3	-2.5	7.3
Norway	8.0	0.2	33.9	0.7	25.2	25.2
Panama	28.4	0.6	12.9	0.2	-20.3	36.2
Singapore	2.7	0.1	9.2	0.2	20.3	16.9
South Africa	14.5	0.3	20.3	0.4	6.1	16.7
Spain	4.3	0.1	8.1	0.2	10.7	16.7
Sweden	152.4	3.2	97.6	1.9	-4.8	15.3
Switzerland	273.6	5.8	352.1	6.8	3.8	4.1
Taiwan	10.4	0.2	25.5	0.5	13.9	6.6
U.K. Islands	11.7	0.2	[2]9.4	0.2	11.0	57.5
United Kingdom	1,050.9	22.2	988.2	19.0	-0.8	5.0
Eastern Europe[3]	2.0	0.0	2.9	0.0	6.7	17.9
European Union	2,607.1	55.1	2,822.3	54.7	1.2	3.2
All countries[4]	4,734.5	100.0	5,164.3	100.0	1.3	2.0

[1] 1991 value - 1990 data unavailable.
[2] 1996 value - 1997 data unavailable.
[3] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.
[4] Totals may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* annual publication, 1990-97, table A-2.

Table 4-12
FDIUS: Annual compensation per employee (wage rates) for U.S. affiliates, by industry, 1997

Industry	Wages (FDIUS)	Average annual wage growth	Standard deviation	Wages (All United States)	U.S. wages/ FDIUS wages
	Thousands of dollars per year	*Percent*		*Thousands of dollars per year*	*Percent*
All industries	44,600	3.8	2.5	35,100	80.9
Petroleum	64,100	4.1	9.0	68,700	107.2
Manufacturing	49,600	3.2	3.3	46,800	94.4
Food	44,700	7.2	8.4	39,000	87.2
Chemicals	64,300	4.8	6.0	69,100	107.5
Pharmaceuticals	73,900	6.8	9.5	(1)	(1)
Metals	49,100	1.9	5.6	46,500	94.7
Machinery	47,600	2.2	4.2	52,200	110.0
Textile products and apparel	30,900	3.6	10.5	27,500	89.0
Transportation equipment	41,700	1.6	8.2	60,000	143.9
Services	39,400	4.5	3.7	32,500	82.7
Wholesale	49,400	4.4	3.8	46,100	93.3
Retail	20,600	3.0	7.7	18,600	90.3
Finance	171,100	10.0	12.7	56,700	33.1
Insurance	67,100	8.0	9.0	50,300	75.0
Real estate	46,200	5.3	7.1	33,000	71.4
Other services	33,100	5.0	7.2	31,800	96.1
Motion pictures	31,900	-1.1	40.9	35,600	111.6
Construction	51,500	4.0	11.3	38,200	74.2
Transportation	40,400	-0.2	16.1	40,000	99.0
Communications[2]	53,200	5.4	58.3	55,500	104.3
Electric, gas & sanitary services[2]	88,500	127.4	12.0	61,900	69.9
Agriculture	31,500	8.5	12.2	19,700	62.5
Mining[3]	64,700	(1)	(1)	23,800	36.8

[1] Not available.
[2] 1996 data - 1997 data is unavailable.
[3] Mining data available only for 1996 and 1997.

Note: Wage rates reflect total employee compensation per employee.

Source: U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), *Survey of Current Business,* Aug. 1998, pp. 79-80; and USDOC, BEA, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* table O-1, 1997 and table A-1, 1990-96.

33.1 percent of the compensation paid by U.S. finance affiliates.[45] Other industries for which foreign-owned affiliates pay significantly more than the U.S. average are real estate; insurance; and electric, gas, and sanitary services, where the U.S. average is 75 percent or less of the compensation paid to employees of U.S. affiliates in the same industries. By contrast, average compensation in the transportation equipment industry is 143.9 percent of the compensation that workers in foreign-owned, U.S. affiliates receive. Average compensation in the chemicals, petroleum, and machinery manufacturing industries is also higher than that in foreign-owned affiliates.[46]

Foreign direct investors do not appear more likely to invest in either high-wage or low-wage industries in the United States. As noted above, employment by U.S. affiliates in the manufacturing sector is highest in the chemicals and machinery industries, and is growing fastest in transportation equipment. All of these are high-wage, capital-intensive industries. In the service sector, employment is highest in the wholesale trade, retail trade, and "other services" industries, and is growing fastest in communications, another capital-intensive industry. Wholesale trade and communications are high-wage industries, but retail trade and "other services" are not, illustrating the wage diversity of foreign investment in the United States. Wage levels also do not show any correlation with sales, employment, or assets of foreign-owned affiliates (table 4-13),[47] suggesting that foreign investors in the United States are not primarily concerned with wage levels. For further discussion of the effects of wages on inbound and outbound direct investment, see chapter 2 and appendix B.

In which industries have foreign-owned affiliates recorded the highest sales in the United States?

Sales by U.S. affiliates totaled $1.7 trillion in 1997, led by the wholesale trade industry, with total sales of $449.8 billion, easily outdistancing all other industries (table 4-14).[48] Other industries for which U.S. affiliates recorded high sales included petroleum, machinery manufacturing, and chemicals, all with sales of close to $150 billion in 1997. Two other service industries, retail trade and insurance, recorded sales by U.S. affiliates of just over $100 billion.[49]

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[45] The finance industry includes nondepository institutions, security and commodity brokers, and holding companies and other investment offices. This category does not include depository institutions.

[46] USDOC, BEA, *FDIUS*, 1990-97; and USDOC, BEA, *Survey of Current Business*, Aug. 1998, pp. 79-81.

[47] Calculations by the Commission, based on USDOC, BEA, *FDIUS*, 1990-97.

[48] Data for wholesale and retail trade include sales of both goods and services.

[49] USDOC, BEA, *FDIUS*, 1990-97.

Table 4-13
FDIUS: Correlation of wage rates with other indicators, by industry, 1997

	Employees	Assets	Wages	Sales	Investment position	Productivity[1]	Capital intensity[2]
Employees	1						
Assets	0.90	1					
Wages	-0.15	0.11	1				
Sales	0.97	0.93	-0.08	1			
Investment position	0.98	0.94	-0.05	0.98	1		
Productivity[1]	-0.20	-0.06	0.38	-0.10	-0.08	1	
Capital intensity[2]	-0.14	0.16	0.88	-0.09	-0.07	0.38	1

[1] Productivity is equal to gross product per employee.
[2] Capital intensity is equal to total assets per employee.

Source: Calculations by the Commission, based on U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates,* annual publication, 1990-97.

The manufacturing sector posted the strongest growth in sales during the period, with an average annual increase of 6.7 percent during 1990-97 (figure 4-10). Within the sector, the pharmaceuticals and transportation equipment industries recorded the most rapid sales growth, at average annual rates of 12.8 percent and 19.3 percent, respectively. The growth of sales by U.S. affiliates in both the service and petroleum sectors was slower, at 4.8 percent and 5.1 percent, respectively. In the service sector, sales increased most rapidly among the securities, insurance, communications, and electric, gas, and sanitary services industries. Sales by foreign-owned securities affiliates increased at an average annual rate of 14.4 percent during the period, while insurance affiliates recorded annual sales increases of 7.4 percent. Due to liberalization and deregulation, the communications and utilities industries have presented new market opportunities to foreign investors, resulting in 47.3-percent average annual growth in sales by foreign-owned affiliates during 1990-97, from $4.6 billion in 1990 to $54.6 billion in 1997 for the two industries combined.[50] The wholesale trade industry, even though it is the largest industry in terms of sales, recorded slower-than-average annual growth of 2.8 percent during 1990-97.[51]

[50] Due to the introduction of the NAICS system, BEA reports only a combined figure for the communications and utilities industries in 1997.
[51] USDOC, BEA, *FDIUS*, 1990-97.

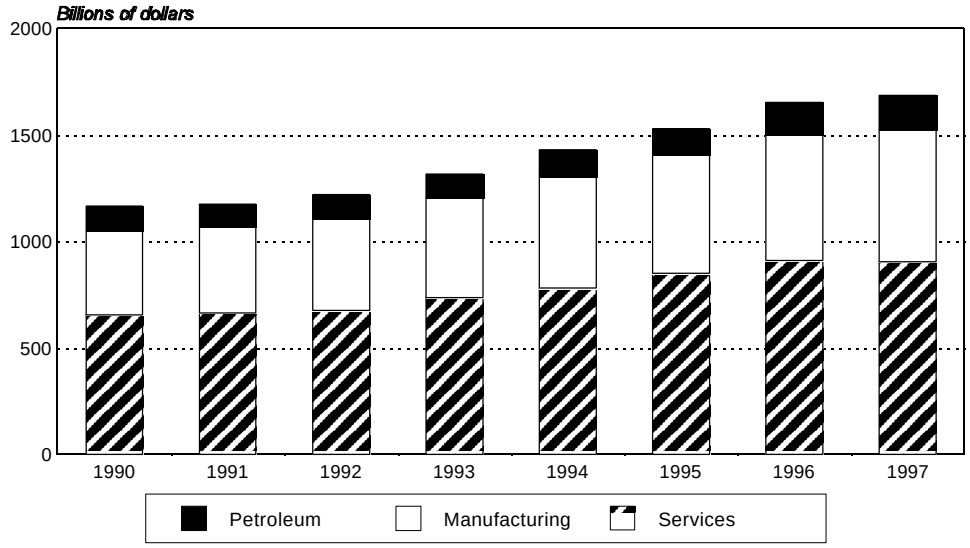
Table 4-14
FDIUS: Sales by U.S. affiliates, by industry, 1990 and 1997

Industry	1990		1997		Average annual growth	Standard deviation
	Millions of dollars	*Percent*	*Millions of dollars*	*Percent*	*———Percent———*	
Petroleum	115,381	9.8	157,770	9.2	5.1	11.1
Manufacturing	396,412	33.7	623,313	36.3	6.7	2.8
Food	47,070	4.0	54,985	3.2	2.3	2.5
Chemicals	110,451	9.4	143,239	8.3	3.9	5.6
Pharmaceuticals	22,067	1.9	49,425	2.9	12.8	11.6
Metals	50,813	4.3	69,527	4.0	4.6	3.8
Machinery	80,023	6.8	154,085	9.0	9.9	4.0
Other manufacturing	108,054	9.2	201,480	11.7	9.5	6.5
Textiles	5,801	0.5	9,674	0.6	8.2	11.3
Transportation equipment	19,881	1.7	63,964	3.7	19.3	17.1
Services	653,812	55.6	904,305	52.7	4.8	3.6
Wholesale trade[1]	374,551	31.9	449,847	26.2	2.8	5.6
Retail[1]	76,930	6.5	102,531	6.0	4.4	5.8
Finance	30,888	2.6	74,409	4.3	14.4	14.8
Insurance	62,574	5.3	102,180	6.0	7.4	5.2
Real estate	17,593	1.5	16,857	1.0	-0.3	7.4
Other services	40,272	3.4	66,435	3.9	7.7	8.1
Motion pictures	9,372	0.8	8,324	0.5	4.6	37.0
Construction	16,882	1.4	21,167	1.2	3.6	7.9
Transportation	27,190	2.3	33,095	1.9	3.5	12.2
Communications and public utilities	4,611	0.4	54,641	3.2	47.3	42.0
Communications[2]	2,279	0.2	40,421	2.4	30.1	14.5
Electric, gas & sanitary services	2,332	0.2	7,053	0.4	20.2	4.9
Agriculture	2,152	0.2	2,361	0.1	1.7	8.6
Mining	8,160	0.7	12,634	0.7	11.8	6.7
All Industries	1,175,857	100.0	1,717,240	100.0	5.6	2.8

[1] Data for wholesale and retail trade include sales of both goods and services.
[2] Reflects 1996 data. Due to the introduction of the North American Industry Classification System (NAICS), 1997 data are not available from BEA.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates*, annual publication, table A-2, 1990 and table O-1, 1997.

Figure 4-10
FDIUS: Sales by U.S. affiliates, by sector, 1990-97



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States, Preliminary Results from the 1997 Benchmark Survey*, table A-1.

How did the gross product of foreign-owned affiliates compare to the total United States GDP during 1990-97?

The 1997 gross product of U.S. affiliates equaled 5 percent of U.S. private-sector GDP.

The United States' gross domestic product (GDP) totaled $8.1 trillion, and total GDP of U.S. private industries equaled $7.1 trillion in 1997. Total gross product of foreign-owned, U.S. affiliates measured $384.9 billion, accounting for 5.4 percent of 1997 private-industry GDP (table 4-15).[52] The United States' private-industry GDP grew at an average annual rate of 5.7 percent during 1992-97, compared with a 7.7-percent average annual growth rate for the gross product of U.S. affiliates.[53]

By industry, there are significant differences in the proportion of U.S. output that is attributed to affiliates of foreign companies. In the petroleum industry, U.S. affiliates accounted for 28.1 percent of output in 1997, or $35.2 billion in gross product, up from 24.7 percent in 1993.[54] Foreign companies also have a very strong presence in the chemicals industry, accounting for 25.9 percent or $41.2 billion of the industry's gross product in 1997. This represented a significant

[52] U.S. GDP statistics from USDOC, BEA, found at Internet address http://www.bea.doc.gov/, retrieved Mar. 16, 2000.

[53] USDOC, BEA, *FDIUS*, 1990-97. BEA began collecting gross product statistics on foreign-owned affiliates for the 1992 data year, so figures for earlier years are not available.

[54] Gross product data for petroleum are not available for 1992.

Table 4-15
Gross product of U.S. affiliates vs. U.S. private industry GDP, 1997

Industry	Affiliate gross product	Total U.S. private-sector output	Affiliate gross product/ U.S. private-sector output	Average annual growth of affiliate gross product, 1992-97	Average annual growth of U.S. private-sector output, 1992-97
	—Millions of dollars—		*———Percent———*		
Petroleum[1]	35,220	125,291	28.1	4.2	1.2
Manufacturing	172,409	1,378,869	12.5	5.2	4.3
Food and kindred products	14,166	136,878	10.3	3.1	3.2
Chemicals and allied products	41,197	158,814	25.9	0.2	5.4
Primary and fabricated metals	17,751	152,455	11.6	3.5	4.6
Machinery	38,233	316,178	12.1	8.3	6.2
Other manufacturing	61,061	614,544	9.9	9.4	3.4
Textile products and apparel	3,483	53,940	6.5	4.1	2.1
Transportation equipment	11,273	136,058	8.3	18.9	3.7
Services	170,569	5,241,542	3.3	11.2	5.9
Wholesale trade	45,776	562,755	8.1	8.1	6.3
Retail trade	28,313	712,890	4.0	7.4	5.1
Finance, except depository institutions	9,669	172,256	5.6	33.9	12.9
Insurance	16,629	196,641	8.5	27.2	9.4
Other services	29,278	1,656,849	1.8	8.1	6.6
Construction	3,955	328,806	1.2	4.4	4.4
Transportation	11,499	255,503	4.5	10.5	5.4
Communications and public utilities	18,132	420,810	4.3	48.6	4.7
Communications[1]	17,200	207,469	8.3	103.6	6.5
Utilities[1]	1,485	204,852	0.7	1.5	4.1
Real estate	7,318	935,032	0.8	3.2	4.8
Agriculture, forestry and fishing	732	131,745	0.6	4.1	3.2
Mining	5,952	120,515	4.9	([2])	1.3
All private industries	384,883	7,083,258	5.4	7.7	5.7

[1] 1996 data. 1997 data not available.
[2] Not available.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis (BEA), *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates ,* annual publication, 1992-96. Table A-1, 1992-96; table O-1, 1997; and additional BEA statistics, found at Internet address http://www.bea.gov/, retrieved Mar. 16, 2000.

decrease from 34.8 percent in 1992. U.S. affiliates account for 12.5 percent of the output of the entire manufacturing sector, a figure that has remained stable during 1992-97.[55]

Foreign companies have a much smaller presence in the service sector, with the percentage of service-sector gross product generated by U.S. affiliates rising from 2.6 percent in 1992 to 3.3 percent in 1997. One service industry of note is communications, where the gross product of foreign owned affiliates has increased from 1.0 percent of the total in 1992 to 8.3 percent in 1996 (latest available). Total U.S. gross product in the communications industry has grown at an average annual rate of 6.5 percent during 1992-96, whereas the gross product of U.S. affiliates in this industry has increased at a rate of 103.6 percent annually,[56] reflecting 156 foreign purchases of U.S. communications companies between 1990 and 1997.[57]

How does the rate of return of domestic-owned U.S. companies compare to the rate of return of foreign-owned affiliates in the United States?

On average, U.S. affiliates recorded a lower return on assets than domestic-owned U.S. companies.

Recent work by BEA has provided an extensive analysis of the rates of return for foreign-owned, U.S. affiliates in the United States, compared to domestic-owned U.S. companies.[58] On average during 1988-97, the return on assets (ROA) of U.S. affiliates was 5.1 percent, which was 2.2 percentage points lower than the average ROA for domestic-owned companies. However, after widening somewhat between 1988 and 1990, the gap between U.S. affiliates and domestic-owned companies consistently narrowed during 1990-97, to its lowest level of 1 percentage point by the end of the period. The narrowing of the gap is most likely related to age effects. High startup costs and inexperience in the U.S. market might lower a company's rate of return in the years immediately following investment, but are expected to decline over time, which would explain the narrowing of the rate of return gap. Another possible reason for the persistent difference in rates of return may relate to market share. The ROA gap largely disappears in industries where foreign-owned U.S. affiliates control a market share of 30 percent or more.[59]

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[55] USDOC, BEA, *FDIUS*, 1990-97.

[56] Ibid.

[57] KPMG Corporate Finance, cross-border mergers and acquisitions database.

[58] USDOC, BEA, "An Examination of the Low Rates of Return of Foreign-Owned U.S. Companies," *Survey of Current Business*, Mar. 2000, pp. 55-73. The data do not include companies in the finance, insurance, real estate, or banking industries.

[59] Ibid., pp. 55-56.

BEA was also able to analyze the difference in rates of return by industry. For most industries, ROA was higher for domestic-owned companies than for U.S. affiliates (table 4-16). For the manufacturing sector as a whole, domestic-owned companies recorded an average ROA that was 1.1 percentage points higher than the average for U.S. affiliates during 1990-97. For industries in the service sector, particularly construction and wholesale trade, the gap tended to be much higher than for manufacturing. However, ROA was consistently higher for U.S. affiliates than for domestic-owned companies in the mining and petroleum industries. In addition, U.S. affiliates in the chemicals and primary metals industries usually posted higher returns on assets than domestic-owned U.S. companies in the same industries.[60]

[60] USDOC, BEA, "An Examination of the Low Rates of Return of Foreign-Owned U.S. Companies."

Table 4-16
Return on assets (ROA) gap of U.S. affiliates vs. U.S.-owned firms, by industry, 1990-97

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1990 -97 Average
Petroleum	3.9	1.8	3.1	2.7	3.6	3.4	4.8	5.1	3.6
Manufacturing	-2.5	-2.6	-1.8	-1.4	-0.6	-1.1	0.1	0.9	-1.1
Food and kindred products	-9.7	-8.0	-6.8	-5.2	-5.7	-6.8	-2.0	-0.6	-5.6
Chemicals and allied products	0.9	-0.1	0.3	1.8	1.7	-1.0	1.0	0.2	0.6
Primary metal industries	-1.1	-3.1	-0.7	1.4	2.0	0.7	3.5	2.5	0.7
Fabricated metal products	-5.5	-3.7	-3.3	-6.1	-11.3	-6.4	-5.5	-5.5	-5.9
Machinery	-9.2	-6.1	-6.4	-7.1	-1.5	-5.2	-3.9	-1.4	-5.1
Electronic and other electric equipment	-9.1	-6.3	-5.9	-6.7	-5.2	-3.8	-3.8	-1.7	-5.3
Textile mill products	-3.9	-5.0	-3.3	-0.4	1.0	2.6	-1.2	-0.2	-1.3
Apparel and other textile products	-10.1	-7.5	-6.1	-3.9	-5.5	-8.4	-0.7	0.3	-5.2
Motor vehicles and equipment	-6.1	-4.8	-8.2	-3.7	0.7	1.3	-3.5	2.3	-2.8
Other transportation equipment	-5.9	-7.2	-3.9	-5.4	-2.9	-4.8	-0.6	1.2	-3.7
Services									
Wholesale trade	-5.2	-5.2	-4.4	-3.9	-3.8	-2.4	-3.7	-2.3	-3.9
Retail trade	-3.0	-1.5	-5.1	-4.3	-1.2	0.1	-1.3	-2.0	-2.3
Real estate	0.9	1.3	([1])	([1])	-0.7	-1.2	-1.3	-0.1	-0.1
Other services	-6.2	-8.3	-7.7	-7.8	-9.3	-9.3	-7.7	-5.0	-7.7
Motion pictures, including television tape and film	0.3	-3.5	0.3	1.1	-1.9	-2.4	-2.3	-3.1	-1.4
Construction	-6.6	-6.3	-5.3	-6.2	-7.2	-10.1	-10.0	-9.7	-7.7
Transportation	-7.8	-2.1	-0.6	2.3	0.6	3.8	5.3	4.4	0.7
Communications and public utilities	-0.3	-3.3	-0.5	-1.9	1.1	3.8	6.7	0.4	0.8
Agriculture	-0.4	-1.4	-4.5	-6.3	-3.5	-4.3	-3.9	-2.5	-3.4
Mining	4.6	5.1	7.0	3.6	4.3	8.9	4.9	5.0	5.4
All nonfinancial industries	-3.1	-3.1	-2.9	-2.6	-2.2	-1.9	-1.3	-1.0	-2.3

[1] Less than 0.05 (+/-).

Note: The ROA gap is defined as the ROA for all foreign-owned companies in an industry less the ROA for all U.S.-owned companies in that industry. A positive number indicates that foreign-owned U.S. affiliate ROA is higher than domestic ROA.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Mar. 2000, p. 58.

Chapter 5
Direct Investment and Cross-Border Trade

This chapter examines the relationship between direct investment and cross-border trade, focusing on the extent and nature of trade undertaken by U.S. and foreign multinational corporations (MNCs). The chapter compares affiliate sales to cross-border exports, investigates the share of total U.S. exports and imports for which MNCs account, the nature of intrafirm trade between parents and their affiliates, the U.S. content of foreign affiliates' production, and the foreign content of U.S. affiliates' production.

U.S. Exports

What is the predominant mode of delivering U.S. goods and services to foreign customers, cross-border exports or foreign affiliate sales?

The value of foreign affiliate sales was more than double the value of cross-border exports in 1997.

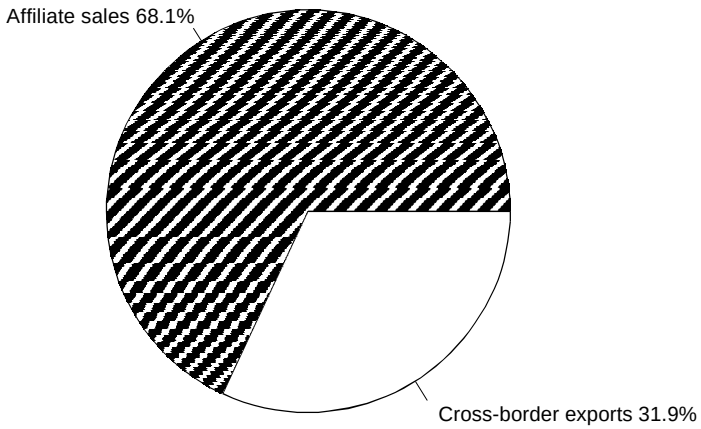
Foreign affiliate sales is the predominant mode of delivering both U.S. goods and services to foreign customers (figure 5-1). In 1997, majority-owned foreign affiliate (MOFA) sales[1] accounted for 68.1 percent, or $2.0 trillion, of such deliveries, while cross-border exports accounted for only 31.9 percent, or $928.0 billion.[2] The majority of both goods and services are delivered through affiliate sales. Affiliate sales accounted for 70.8 percent of goods deliveries in 1997, while such sales accounted for 53.2 percent of services deliveries.[3]

[1] Sales data in sufficient detail for this discussion do not exist for all affiliates. Thus, this discussion solely reflects the activity of majority-owned foreign affiliates.

[2] The Bureau of Economic Analysis (BEA) does not publish data for goods trade on an industry-specific or a country-specific basis. Thus, for the sake of comparability, cross-border exports were calculated by adding the value of cross-border services exports, as reported by BEA, to the value of cross-border goods exports, as reported by the USITC Dataweb.

[3] Compiled by the Commission, based on data reported in U.S. Department of Commerce (USDOC), BEA, *Survey of Current Business*, Oct. 1999, p. 64; USDOC, BEA, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, (USDIA), annual publication, 1990-97; and other official statistics of the U.S. Department of Commerce, found at Internet address http://itc-central.usitc.gov:88/intranet/test/intranet.htm.

Figure 5-1
Total deliveries of U.S. goods and services to foreign customers, 1997



Total = $2.9 trillion

Source: Compiled by the Commission.

Likewise, the predominant method of delivering most categories of U.S. manufactured products is foreign affiliate sales (table 5-1).[4] Products for which affiliate sales account for a particularly high percentage of deliveries to foreign customers include food and kindred products (77.8 percent) and chemicals and allied products (72.6 percent). Primary and fabricated metals and industrial machinery and equipment are the only products for which cross-border trade is the predominant mode of delivery.[5]

A comparison of affiliate sales and cross-border trade data by country reveals that affiliate sales account for a greater share of deliveries in large domestic or regional markets and in countries with hospitable investment climates (table 5-2). For example, affiliate sales generally account for a very high percentage of U.S. goods and services deliveries to customers in EU member countries. In 1997, affiliate sales accounted for 81.8 percent of U.S. goods and services deliveries to the European Union. Affiliate sales also accounted for a particularly high share of goods and services deliveries in Bermuda (92.8 percent) and Switzerland (84.0 percent), which both have large financial services markets. Affiliate sales account for a smaller-than-average share of deliveries to Japanese and Canadian customers, despite the size of these countries' markets. For Japan, this

[4] Cross-border trade data for services products are not available.

[5] Compiled by the Commission, based on data reported in USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 64; USDOC, BEA, *USDIA*, 1990-97;

Internet address http://itc-central.usitc.gov:88/intranet/test/intranet.htm.

Table 5-1
Foreign affiliate sales as a share of total deliveries of U.S. goods and services to foreign customers, by industry, 1997

	Percent of deliveries accounted for by affiliate sales
Manufacturing	58.7
Food and kindred products	77.8
Chemicals and allied products	72.6
Primary and fabricated metals	46.3
Industrial machinery and equipment	48.9
Electronic and other electrical equipment	61.7
Other manufacturing	52.4
Services[1]	53.2
Other	93.2
All industries	68.1

[1] For the purposes of this discussion, services include activities characteristic of the following industries: petroleum services, finance (except banking), insurance, real estate, agricultural services, mining services, transportation, communications, public utilities, hotels and other lodging places, business services, automotive rental and leasing, motion pictures (including television tape and film), health services, engineering and architectural services, management and public relations services, and other services.

Source: Compiled by the Commission.

may be a result of a generally difficult business climate for foreign investors.[6] In Canada, some U.S. firms may not need to establish a physical presence, due to the proximity of the Canadian market and the low trade barriers between Canada and the United States. Countries in which the majority of U.S. goods and services are delivered through cross-border trade include China, India, Israel, Korea, Mexico, the Philippines, Saudi Arabia, and Taiwan.[7]

Did U.S. intrafirm exports grow faster than total U.S. exports during 1990-97?

Intrafirm trade is that portion of cross-border trade carried out between parent and affiliate firms. Intrafirm exports of goods and services grew at an average annual rate of 9.9 percent during 1990-97, from $154.7 billion to $289.2 billion (table 5-3). Total U.S. exports grew somewhat

[6] See United States Trade Representative (USTR), *1999 National Trade Estimate Report on Foreign Trade Barriers,* found at Internet address http://www.ustr.gov/pdf/nte-1999.pdf, retrieved Oct. 25, 2000; USTR, *1999 Annual Report,* found at Internet address http://www.ustr.gov/html/2000tpa_index.html, retrieved Oct. 25, 2000; and Department of the Treasury, *National Treatment Study 1998,* found at Internet address http://www.ustreas.gov/nts/, retrieved Oct. 25, 2000.

[7] Compiled by the Commission, based on data reported in USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 66; USDOC, BEA, *USDIA*, 1990-97; and other official statistics of the U.S. Department of Commerce, found at Internet address http://itc-central.usitc.gov:88/intranet/test/intranet.htm.

Table 5-2
Foreign affiliate sales as a share of total deliveries of U.S. goods and services to foreign customers, by country, 1997

	Goods[1]	Services[2]	Total
	——Percent of deliveries accounted for by affiliate sales—		
Argentina	74.0	49.0	68.5
Australia	78.8	66.7	76.6
Bermuda	93.7	90.6	92.8
Brazil	76.9	44.7	72.5
Canada	59.1	55.5	59.5
Chile	62.9	50.1	61.2
China	46.5	17.0	42.0
France	86.7	60.9	82.3
Germany	87.0	58.5	82.9
Hong Kong	72.5	63.9	71.7
India	39.3	12.4	33.3
Indonesia	65.7	23.2	59.1
Israel	30.2	25.0	29.0
Italy	87.2	56.2	82.9
Japan	57.3	40.2	53.3
Korea	23.4	15.7	22.0
Malaysia	61.0	53.5	60.6
Mexico	42.5	21.9	40.6
Netherlands	82.4	61.3	80.0
New Zealand	77.9	46.0	71.6
Norway	86.5	57.1	80.6
Philippines	48.3	28.0	46.1
Saudi Arabia	1.7	35.8	10.2
Singapore	81.0	48.6	78.5
South Africa	66.7	49.8	63.7
Spain	87.0	47.9	81.8
Sweden	80.1	56.7	74.4
Switzerland	88.1	49.8	84.0
Taiwan	35.0	45.5	38.3
Thailand	63.9	53.1	63.0
United Kingdom	86.4	75.4	84.1
Venezuela	52.3	45.6	50.7
Eastern Europe[3]	67.2	19.6	60.2
European Union	85.2	65.5	81.8
Other	66.2	32.3	58.9
All countries	70.8	53.2	68.1

[1] For the purposes of this discussion, goods include products characteristic of the following industries: petroleum (except petroleum services), manufacturing, wholesale trade, retail trade, agriculture (except agricultural services), mining (except mining services), and construction.

[2] For the purposes of this discussion, services include activities characteristic of the following industries: petroleum services, finance (except banking), insurance, real estate, agricultural services, mining services, transportation, communications, public utilities, hotels and other lodging places, business services, automotive rental and leasing, motion pictures (including television tape and film), health services, engineering and architectural services, management and public relations services, and other services.

[3] Eastern Europe includes data for Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

Source: Compiled by the Commission.

Table 5-3
Intrafirm exports as a component of total U.S. exports, 1990-97

	1990		1997		Average annual growth	Standard deviation
	Billions of dollars	*Percent of total U.S. exports*	*Billions of dollars*	*Percent of total U.S. exports*	*Percent*	
Total U.S. exports	536.1	100.0	938.5	100.0	8.4	2.7
Total U.S. intrafirm exports	154.7	28.9	289.2	31.8	9.9	4.3
Exports by U.S. parents to their foreign affiliates	112.5	21.0	223.6	23.8	10.4	5.3
Exports by U.S. affiliates to their foreign parents	42.2	7.9	74.6	7.9	8.7	6.2

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Jan. 2000, p. 89.

Intrafirm exports accounted for almost 30 percent of total exports during 1990-97.

slower, at an 8.4-percent average annual rate, from $536.1 billion in 1990 to $938.5 billion in 1997.[8] The faster growth in intrafirm exports principally reflected exceptionally rapid growth in exports by U.S. parent firms. During 1990-97, U.S. parents' exports of goods and services to their foreign affiliates increased by 10.4 percent per year, on average, from $112.5 billion to $223.6 billion. By contrast, U.S. affiliates' exports to foreign parents increased by 8.7 percent per year, on average, from $42.2 billion to $74.6 billion.[9] Intrafirm exports represented 28.9 percent of total U.S. exports in 1990 and 31.8 percent in 1997 (figure 5-2), although a year-by-year comparison of the data reveals no discernable upward or downward trend during the period. These shares fluctuated between 28.9 percent in 1990 and 32.7 percent posted in 1994.[10]

Which countries are the most important destinations for intrafirm exports?

In 1997, U.S. parents exported goods[11] valued at $181.1 billion to their MOFAs.[12] MOFAs located in Canada, the European Union (EU), Mexico, and Japan accounted for almost three-quarters (73.5%), or $133.1 billion, of these exports (figure 5-3). MOFAs in Canada ranked

[8] For the purposes of this discussion, the value of total goods and services exports is that reported by the Bureau of Economic Analysis.

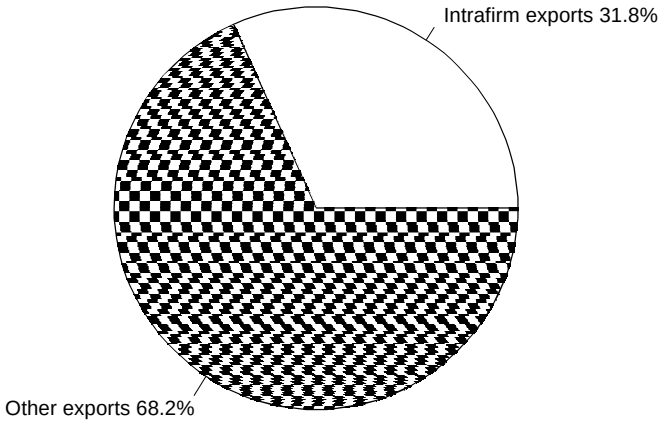
[9] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89.

[10] Ibid.

[11] Detailed data on U.S. parents' exports of services are not available.

[12] Country-level data on intrafirm transactions are only available for U.S. parents and their majority-owned foreign affiliates.

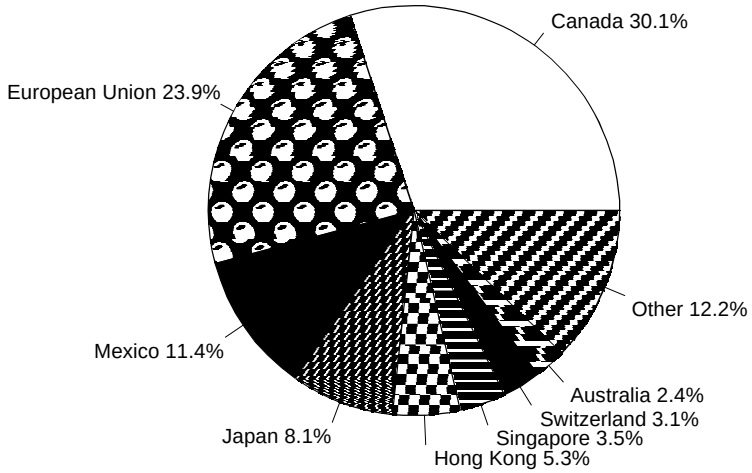
Figure 5-2
U.S. exports, 1997



Total exports = $938.5 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

Figure 5-3
U.S. parents' exports of goods to majority-owned foreign affiliates, by country, 1997



Total = $181.1 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, July 1999, table III.I.9.

first, receiving intrafirm exports of $54.5 billion (30.1 percent). The EU ranked second, receiving intrafirm exports valued at $43.3 billion (23.9 percent). MOFAs in Mexico and Japan ranked third and fourth, receiving intrafirm exports totaling $20.6 billion (11.4 percent) and $14.6 billion (8.1 percent), respectively.[13]

U.S. parents collected 49.7 percent of intrafirm royalties and license fees from affiliates in Japan, the United Kingdom, the Netherlands, Germany, and France (figure 5-4). U.S. parents collected 56.8 percent of other intrafirm service payments from Canada, the United Kingdom, the Netherlands, Germany, and Singapore (figure 5-5).[14]

To what extent do foreign affiliates incorporate U.S.-made goods and services in their output?

In 1997, U.S. exports constituted 13 percent of the output of foreign affiliates.

U.S. exports constitute a growing share of U.S.-owned foreign affiliates' output. In 1997, U.S. exports constituted 13.3 percent of the total content of foreign affiliates' output, up from 10.1 percent in 1990. Foreign affiliates purchased U.S. goods and services valued at $256.2 billion, representing 27 percent of total U.S. exports of goods and services. This reflected 10.4 percent growth per annum since 1990, when foreign affiliates purchased U.S. goods and services valued at $128.8 billion.[15] This suggests that U.S. direct investment abroad is a complement to, rather than a substitute for, U.S. exports.[16]

Do goods or services account for the larger share of intrafirm exports?

The shares of intrafirm exports held by goods and services remained virtually constant during 1990-97, with goods representing 82 percent to 83 percent of intrafirm exports, and services representing 17 percent to 18 percent. Intrafirm exports of both goods and services recorded nearly identical growth rates during 1990-97. Specifically, intrafirm exports of goods recorded average annual growth of 9.9 percent, while intrafirm exports of services grew by an average annual rate of 9.8 percent.[17]

The predominance of goods among intrafirm exports reflects in part manufacturers' greater reliance on intrafirm trade. During 1990-97, intrafirm merchandise exports accounted for 35.4 percent of total U.S. merchandise exports, on average, whereas intrafirm service exports

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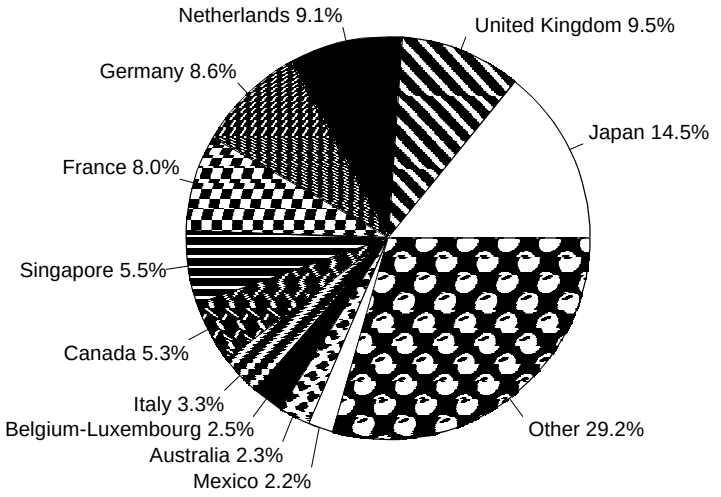
[13] USDOC, BEA, *USDIA*,1990-97.
[14] USDOC, BEA, *Survey of Current Business*, Oct. 1999, pp. 74 and 80.
[15] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89.
[16] For further discussion of this point, see chapter 2.
[17] USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 64, and Jan. 2000, p. 89.

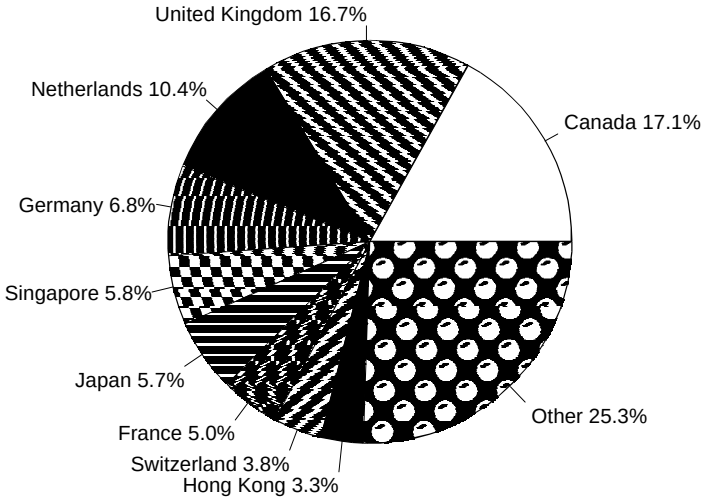
Figure 5-4
U.S. parents' receipts of royalties and licence fees from foreign affiliates, by country, 1997



Total = $23.2 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 1999, p. 74.

Figure 5-5
U.S. parents' exports of services to foreign affiliates, by country, 1997[1]



Total = $17.3 billion

[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 1999, p. 80.

accounted for only 19 percent of total U.S. services exports, on average. However, service providers clearly demonstrated a growing reliance on intrafirm exports in recent decades. Examination of services data from 1982 through 1997 reveals a gradual upward trend in intrafirm service exports through 1994 (figure 5-6).[18] The trend is the likely result of the deregulation of service industries such as telecommunications and finance, and the subsequent establishment of services affiliates in foreign markets. Continued reform in these industries; accelerating reform in the electricity, water/wastewater, and transport service industries; and the consequent establishment of more foreign affiliates in these industries make it likely that the intrafirm export share of total services exports will continue to increase in the future.

Intrafirm service exports also reflect U.S. parents' pronounced research efforts and their subsequent wealth of marketable intellectual property. U.S. parents' exports of intangible intellectual property to affiliates,[19] which measured $23.2 billion, constituted the largest component of intrafirm service exports during 1997. These exports represented 68.7 percent of total U.S. exports of intellectual property. U.S. parents' and foreign-owned U.S. affiliates' intrafirm exports of services other than intellectual property measured $17.3 billion and $10.0 billion, respectively. Most of the latter service exports comprise parents' management fees[20] and assessments for research and development, both of which require foreign affiliates to make payments to their U.S. parents. U.S. parents also collect relatively large payments from their foreign affiliates for the provision of financial and computer services.[21]

Wholesale goods and transportation equipment, including motor vehicles and parts, accounted for 56.9 percent of U.S. parents' exports of goods to foreign affiliates (figure 5-7). Parents' exports of electronics, industrial machinery, and chemicals accounted for a further 29.2 percent of such exports.[22] U.S. affiliates' exports of goods to foreign parent firms predominantly comprised wholesale goods (57.2 percent),

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[18] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89.

[19] Intangible intellectual property includes patented and unpatented techniques, processes, formulas, and other intangible property rights used in the production of goods; transactions involving copyrights, trademarks, franchises, broadcast rights, and other intangible rights; the rights to distribute, use, and reproduce computer software; and the rights to sell products under a particular trademark, brand name, or signature.

[20] The separation of charges for management and intangible intellectual property is not always distinct. For example, a firm providing blueprints and technical advice to its affiliate may classify the associated charges as a licensing fee for know-how, whereas another firm may classify charges on an identical transaction as management fees. See USDOC, BEA, *Survey of Current Business*, Dec. 1973, p. 15.

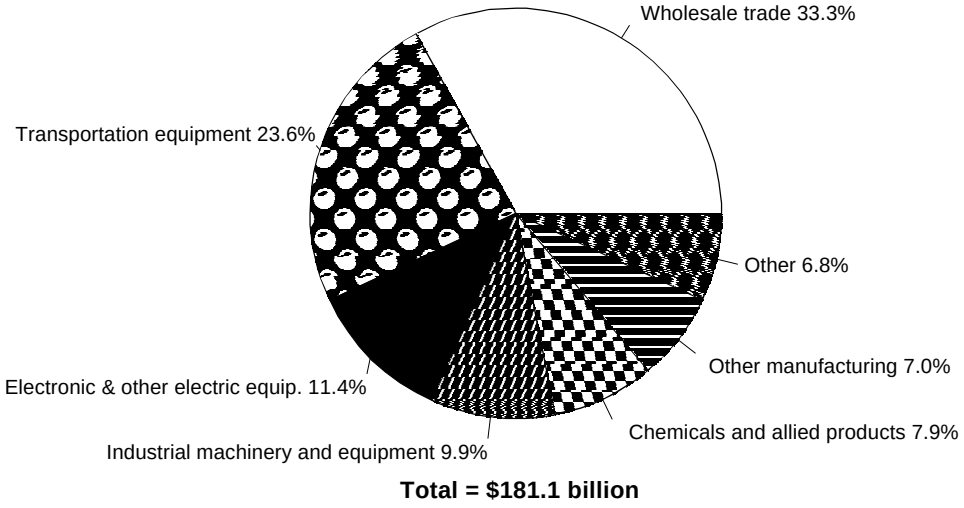
[21] USDOC, BEA, *Survey of Current Business*, Oct. 1998, p. 75, and Oct. 1999, p. 55.

[22] USDOC, BEA, *USDIA*, 1990-97.

Figure 5-6
Intrafirm exports as a percentage of total exports of goods and services, 1982-97

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

Figure 5-7
U.S. parents' exports of goods to foreign affiliates, by industry, 1997[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad,* July 1999, table III.I.2.

chemicals (10.8 percent), and computers and electronic goods (9.4 percent) (figure 5-8).[23]

Did U.S. parents or U.S. affiliates of foreign parents account for more U.S. intrafirm exports during 1990-97?

U.S. parents' exports to their foreign affiliates accounts for the majority of U.S. intrafirm exports (figure 5-9). During 1990-97, U.S. parent firms' share of intrafirm exports increased unsteadily from 72.7 percent in 1990 to 75.0 percent in 1997.[24] U.S. parent firms' share of intrafirm exports tends to be larger than U.S. affiliates' exports because parents, both U.S. and foreign, show a clear tendency to maintain the majority of production assets in their home country. It may also reflect parents' exports of higher value-added manufactures and services, a natural consequence of the research and development performed and the intellectual property owned, in most cases, by the parent.

U.S. Imports

What is the predominant mode of delivering foreign goods and services to U.S. customers, cross-border imports or U.S. affiliate sales?

The value of U.S. affiliate sales was more than double the value of 1997 imports.

U.S. affiliate sales is the predominant mode of delivering foreign goods and services to U.S. customers (figure 5-10). In 1997, sales by foreign-owned affiliates located in the United States accounted for 62.7 percent, or $1.7 trillion, of such deliveries. The same year, cross-border imports accounted for $1.0 trillion.[25] Affiliate sales accounted for a slightly higher percentage of services deliveries (66.8 percent) than goods deliveries (60.2 percent).[26]

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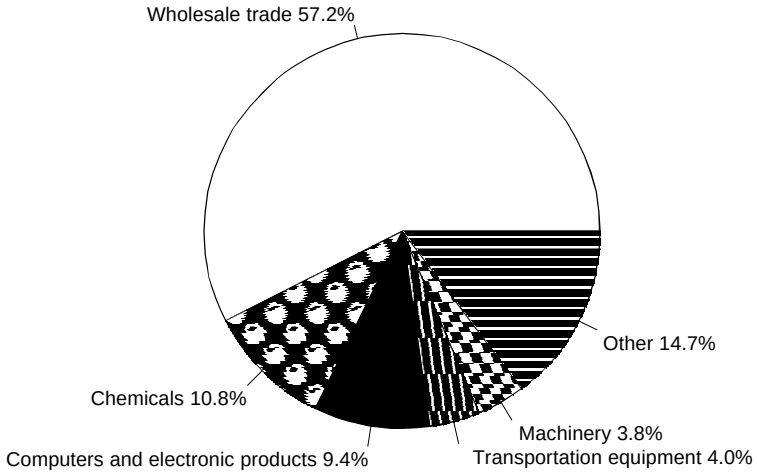
[23] USDOC, BEA, *Foreign Direct Investment in the United States: Operations of Foreign Parent Companies and their U.S. Affiliates (FDIUS),* annual publication, 1990-97.

[24] USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 64, and Jan. 2000, p. 89.

[25] BEA does not publish data for goods trade on an industry-specific or a country-specific basis. Thus, for the purposes of this discussion, cross-border imports were calculated by adding the value of cross-border services imports, as reported by BEA, to the value of cross-border goods imports, as reported by the USITC Dataweb.

[26] Compiled by the Commission, based on data reported in USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 65; USDOC, BEA, *FDIUS*, 1990-97; and other official statistics of the U.S. Department of Commerce, found at Internet address http://itc-central.usitc.gov:88/intranet/test/intranet.htm.

Figure 5-8
U.S. affiliates' exports of goods to foreign parents, by industry, 1997[1]

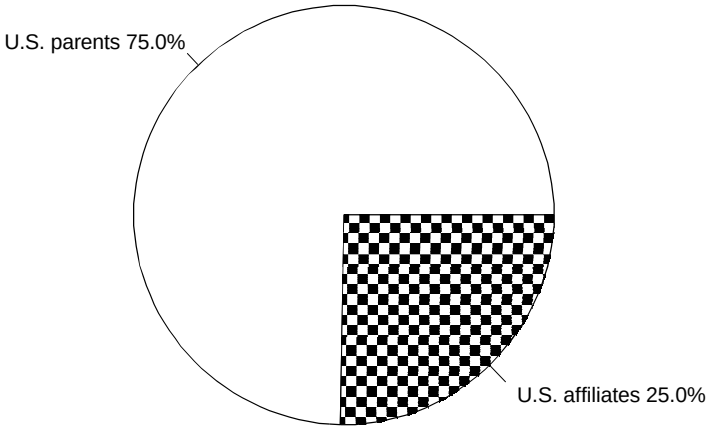


Total = $62.8 billion

[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Preliminary Results from the 1997 Benchmark Survey*, Sept. 1999, table H-1.

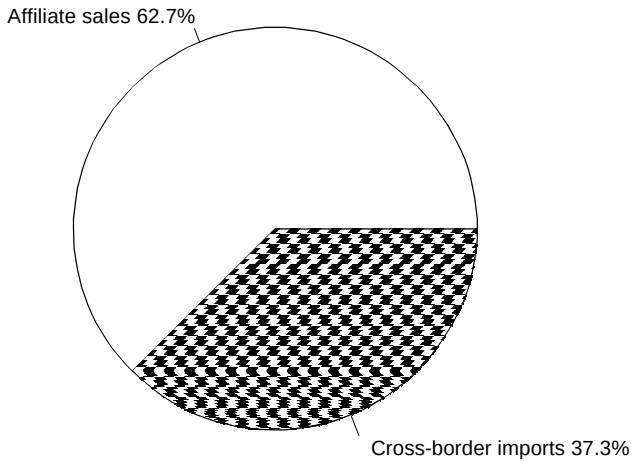
Figure 5-9
U.S. intrafirm exports, 1997



Total intrafirm exports = $298.2 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

Figure 5-10
Total deliveries of foreign goods and services to U.S. customers, 1997



Total = $2.7 trillion

Source: Compiled by the Commission.

MNCs based in developed countries with large economies typically deliver a higher-than-average share of goods and services through affiliate sales (table 5-4). Countries that deliver a particularly high percentage of goods and services to U.S. customers through affiliate sales include the Netherlands (92.0 percent), Switzerland (90.1 percent), France (83.1 percent), and the United Kingdom (82.7 percent). Canada seems to be an exception to this trend. Despite the size of its economy, most Canadian deliveries to U.S. customers occur through cross-border trade, possibly due to the common border, which lowers transport costs, and the low trade barriers between Canada and the United States. In contrast, countries for which affiliate sales account for a particularly small share of deliveries to U.S. customers include the Philippines (0.9 percent), China (2.8 percent), Malaysia (7.1 percent), and Mexico[27] (7.8 percent).[28]

[27] As with Canada, the predominance of cross-border trade as a mode of delivery between Mexico and the United States may be due, in part, to proximity and low trade barriers between these countries.

[28] Compiled by the Commission, based on data reported in USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 67; USDOC, BEA, *FDIUS*, 1990-97; and other official statistics of the U.S. Department of Commerce, found at Internet address http://itc-central.usitc.gov:88/intranet/test/intranet.htm.

Table 5-4
U.S. affiliate sales as a share of total deliveries of foreign goods and services to U.S. customers, by country, 1997

	Goods[1]	Services[2]	Total[3]
	Percent of deliveries accounted for by affiliate sales		
Australia	75.9	80.9	78.2
Bermuda	99.7	48.7	79.4
Brazil	24.7	8.4	26.0
Canada	35.6	74.0	43.4
China	([4])	([4])	2.8
France	81.3	83.4	83.1
Germany	78.9	74.0	79.2
Hong Kong	30.8	35.7	32.0
Indonesia	12.1	14.7	12.3
Israel	22.2	21.4	22.1
Italy	42.1	26.8	41.0
Japan	76.4	69.0	76.7
Korea	47.5	13.2	44.0
Malaysia	4.1	54.8	7.1
Mexico	([4])	([4])	7.8
Netherlands	92.2	90.1	92.0
New Zealand	55.7	7.7	47.2
Norway	72.4	61.5	70.3
Philippines	([4])	([4])	0.9
Saudi Arabia	58.1	72.5	59.3
Singapore	5.6	60.7	16.5
South Africa	80.1	21.1	76.1
Spain	19.0	27.0	22.9
Sweden	80.0	72.5	79.3
Switzerland	89.4	89.2	90.1
Taiwan	23.3	18.9	23.0
United Kingdom	84.4	76.6	82.7
Venezuela	([4])	([4])	55.8
European Union	79.4	75.8	79.5
Other	42.0	40.5	34.8
All countries	60.2	66.8	62.7

[1] For this table, goods include products characteristic of the following industries: petroleum (except petroleum services), manufacturing, wholesale trade, retail trade, agriculture (except agricultural services), mining (except mining services), and construction.

[2] For this table, services include activities characteristic of the following industries: petroleum services, finance (except banking), insurance, real estate, agricultural services, mining services, transportation, communications, public utilities, hotels and other lodging places, business services, automotive rental and leasing, motion pictures (including television tape and film), health services, engineering and architectural services, management and public relations services, and other services.

[3] Total includes data for investment income as well as sales of goods and services.

[4] Data was suppressed in order to avoid disclosure of information on individual companies.

Source: Compiled by the Commission.

Did intrafirm imports grow faster than total U.S. imports during 1990-97?

Intrafirm imports grew more slowly than total U.S. imports during 1990-97.

Total imports of goods and services grew by an average of 7.9 percent per annum, increasing from $616.0 billion in 1990 to $1,043.3 billion in 1997 (table 5-5).[29] By contrast, intrafirm imports grew more slowly, posting average annual growth of 7.1 percent, from $229.1 billion to $367.6 billion. U.S. parent firms' imports of goods and services from their foreign affiliates increased by 9.1 percent, on average, from $85.9 billion to $157.3 billion. U.S. affiliates' imports from foreign parent groups increased by 5.8 percent, increasing from $143.2 billion in 1990 and $210.3 billion in 1997.[30]

In 1997, U.S. intrafirm imports of goods and services totaled $367.6 billion, representing 35.2 percent of total U.S. imports. Although this reflected a 2-percentage-point decrease from 1990, no clear downward trend is evident. The share fluctuated moderately between the low recorded in 1997 and the high of 38.2 percent recorded in 1994.[31]

In which countries did most intrafirm goods and service imports originate in 1997?

A small number of developed countries are the source of most U.S. intrafirm service imports. The United Kingdom, Japan, Switzerland, and Germany accounted for 69.4 percent of intrafirm imports of intangible intellectual property. The United Kingdom, Japan, Germany, and France accounted for 52.5 percent of intrafirm service imports other than those of intellectual property.[32]

Likewise, most U.S. intrafirm goods imports originate in a small number of locations. MOFAs located in Canada, Mexico, the European Union, and Singapore accounted for 39.2 percent, 17.7 percent, 15.2 percent, and 9.0 percent of U.S. parents' intrafirm merchandise imports, respectively (figure 5-11).[33] U.S. affiliates predominantly received intrafirm merchandise imports from foreign parent groups in Japan, accounting for 47.7 percent of such imports, and the European Union, accounting for 29.9 percent of such imports (figure 5-12).[34]

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[29] For the purposes of this discussion, the value of total goods and services imports is that reported by the Bureau of Economic Analysis.

[30] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89.

[31] Ibid.

[32] USDOC, BEA, *Survey of Current Business*, Oct. 1999, pp. 74 and 81.

[33] USDOC, BEA, *USDIA*, 1990-97.

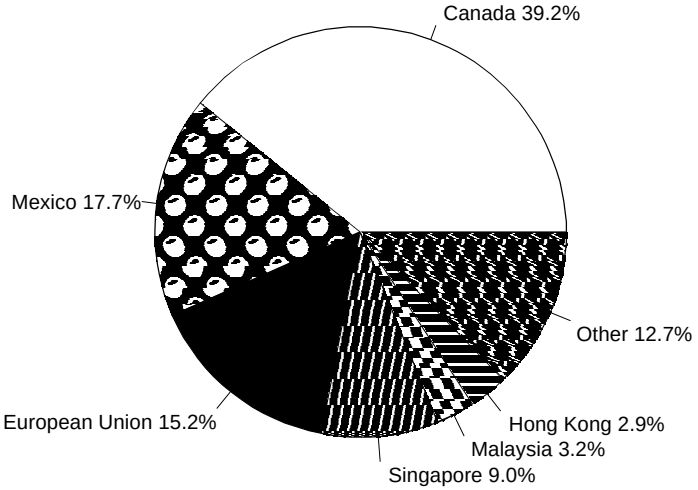
[34] USDOC, BEA, *FDIUS*, 1990-97.

Table 5-5
Intrafirm imports as a component of total U.S. imports, 1990 and 1997

	1990		1997		Average annual growth	Standard deviation
	Billions of dollars	*Percent of total U.S. imports*	*Billions of dollars*	*Percent of total U.S. imports*	*Percent*	
Total U.S. imports	616.0	100.0	1,043.3	100.0	7.9	4.1
Total U.S. intrafirm imports	229.1	37.2	367.6	35.2	7.1	4.9
Imports by U.S. parents from their foreign affiliates	85.9	13.9	157.3	15.1	9.1	4.8
Imports by U.S. affiliates from their foreign parents	143.2	23.2	210.3	20.2	5.8	5.9

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Jan. 2000, p. 89.

Figure 5-11
U.S. parents' intrafirm imports of goods, by country, 1997[1]

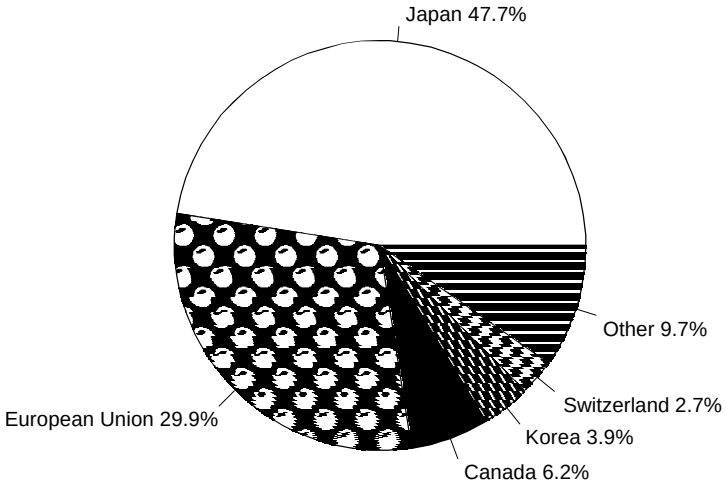


Total = $145.4 billion

[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates*, July 1999, table III.I.23.

Figure 5-12
U.S. affiliates' intrafirm imports of goods, by country, 1997[1]



[1] Total may not equal 100 percent due to rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Preliminary Results from the 1997 Benchmark Survey*, Sept. 1999, table H-7.

To what extent do foreign-owned U.S. affiliates incorporate foreign-made goods and services in their output?

Imports by U.S. affiliates equal 16 percent of the value of their total output.

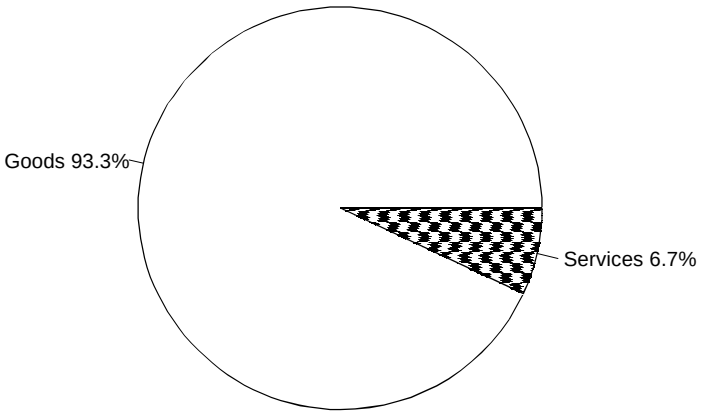
U.S. affiliates of foreign firms purchased foreign goods and services valued at $276.3 billion in 1997. This reflected 5.8 percent growth per annum since 1990, when U.S. affiliates purchased foreign goods and services valued at $188.7 billion. In 1997, such imports constituted 16.1 percent of the total content of U.S. affiliates' output, not significantly different from 15.9 percent recorded in 1990.[35]

Did the mix of goods and services in U.S. intrafirm imports change during 1990-97?

During 1990-97, imports of goods accounted for 93 percent to 95 percent of intrafirm imports, while imports of services accounted for 5 percent to 7 percent (figure 5-13).[36] Intrafirm imports of goods recorded

[35] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89.
[36] Ibid.

Figure 5-13
Intrafirm imports of goods and services, 1997



Total = $367.6 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

average annual growth of 6.8 percent during 1990-97, while intrafirm imports of services increased by an average annual rate of 11.9 percent.[37]

The predominance of goods among intrafirm imports reflects in part manufacturers' greater reliance on intrafirm trade. Intrafirm imports accounted for a far higher share of total merchandise imports than of total service imports during 1990-97. However, the share of total merchandise imports represented by intrafirm imports fell during 1990 to 1997, from 43.7 percent to 39.1 percent (figure 5-14). By contrast, the share of total service imports represented by intrafirm imports increased, from 9.6 percent in 1990 to 14.8 percent in 1997.[38]

In 1997, U.S. parent firms' intrafirm imports of goods predominantly comprised imports from transportation equipment affiliates, representing 37.2 percent of such imports; industrial machinery affiliates, representing 18.0 percent; and electronic equipment affiliates, representing 15.7 percent (figure 5-15). Imports from Canadian affiliates accounted for 68.1 percent of all U.S. parents' imports from transportation equipment affiliates, while imports from affiliates in Singapore and Mexico accounted for significant shares of U.S. parents' imports from industrial machinery affiliates and electronic equipment affiliates, respectively.[39]

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[37] USDOC, BEA, *Survey of Current Business*, Oct. 1999, p. 65, and Jan. 2000, p. 89.

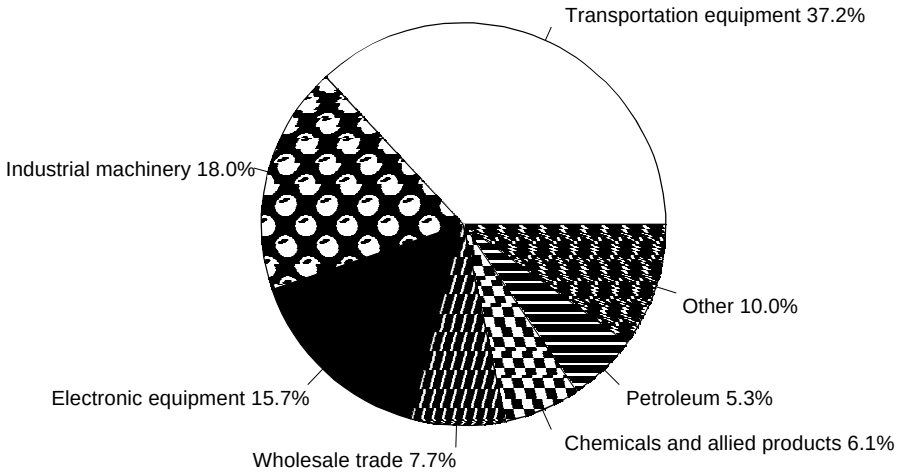
[38] USDOC, BEA, *Survey of Current Business*, Jan. 2000, p. 89

[39] USDOC, BEA, *USDIA*, 1990-97.

Figure 5-14
Intrafirm imports as a percentage of total imports in goods and services, 1990-97

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

Figure 5-15
U.S. parents' imports of goods from foreign affiliates, by industry of foreign affiliate, 1997



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *U.S. Direct Investment Abroad,* July 1999, table III.I.23.

U.S. affiliates' imports from foreign parent groups overwhelmingly comprised imports by wholesale trade affiliates, representing 62.9 percent of these imports (figure 5-16). Most prominent among these imports were imports shipped to affiliates engaged in the wholesale trade of motor vehicles and motor vehicle parts and electrical goods. U.S. affiliates of Japanese parent companies account for over half of all U.S. wholesale trade affiliates' imports from foreign parent firms.[40]

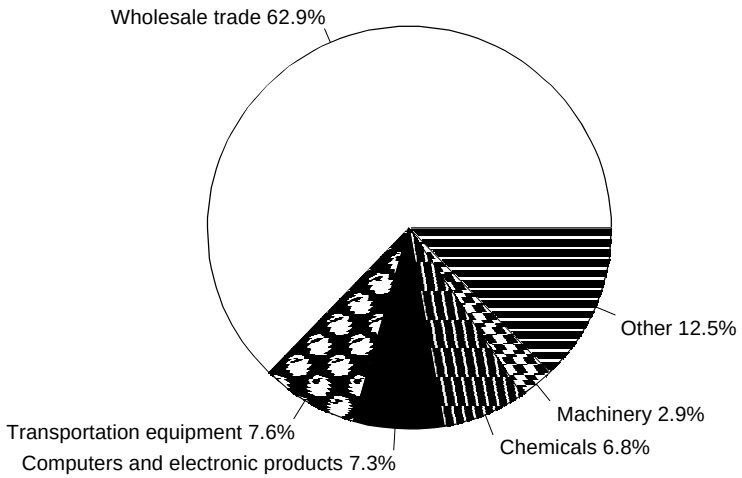
U.S. affiliates' imports of management services and payments of R&D assessments, measuring $6.1 billion, accounted for the largest share of intrafirm service imports, 24.7 percent. U.S. affiliates' imports of intangible intellectual property from their parents, measuring $6.0 billion, accounted for the second largest share, 24.2 percent. U.S. parents' imports of financial, computer, transportation, and communication services from their foreign affiliates, measuring $3.2 billion, accounted for most of the remainder.[41]

Did U.S. parents or U.S. affiliates of foreign parents account for more U.S. intrafirm imports during 1990-97?

Foreign-owned U.S. affiliates account for the larger share of U.S. intrafirm imports, although their share decreased during 1990-97, from 62.5 percent to 57.2 percent (figure 5-17).[42] U.S. affiliates engage primarily in distribution and marketing activities, and therefore largely rely on foreign parent groups as suppliers of wholesale goods.

[40] USDOC, BEA, *FDIUS,* 1990-97.
[41] USDOC, BEA, *Survey of Current Business,* Oct. 1999, pp. 54 and 74.
[42] USDOC, BEA, *Survey of Current Business,* Jan. 2000, p. 89.

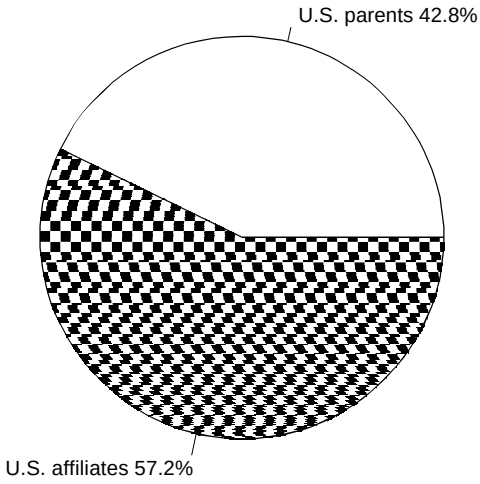
Figure 5-16
U.S. affiliates' imports of goods from foreign parents, by industry of U.S. affiliate, 1997



Total = $195.5 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Preliminary Results from the 1997 Benchmark Survey*, Sept. 1999, table H-7.

Figure 5-17
Total U.S. intrafirm imports, U.S. parents vs. U.S. affiliates, 1997



Total intrafirm imports = $367.6 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Jan. 2000, p. 89.

Appendix A

Direct Investment in the Current Account and the Capital Account

Introduction

The following discussion provides a more extensive explanation of the relationship between direct investment data, and the U.S. current account and capital account data.

Data on U.S. Direct Investment Abroad (USDIA)

Direct investment flows reflected in the current account include direct investment income, royalties and license fees, and service charges. Direct investment income (table A-1, line 14) includes U.S. parents' claims on the earnings of foreign affiliates and parents' interest receipts on loans to their foreign affiliates, less the parents' interest payments on loans from their affiliates (table A-2).[1] Royalties and license fees are charges for the affiliates' use of the parents' intangible intellectual property rights, including patents, trademarks, copyrights, business format franchising rights, manufacturing processes, and other intangible property (table A-1, part of line 9, and delineated in table A-2).[2] Service charges cover management fees and receipts for the provision of professional and technical services (table A-1, part of line 10, and delineated in table A-2).[3]

Direct investment flows in the capital account are funds that U.S. parents provide to their foreign affiliates (outflows), net of funds that affiliates provide to their parents (inflows). Funds are of three types: equity capital, intercompany debt, and reinvested earnings (table A-1, line 51, and delineated in table A-3). Parent firms pay out equity capital to establish or acquire an enterprise, or to increase equity in an existing

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[1] In most cases, the U.S. parents' claim on earnings is proportionate to its voting interest (e.g., a parent that owns 10 percent of an affiliate is entitled to 10 percent of that affiliate's earnings). No distinction is made between earnings that are distributed to the parent and those that are reinvested; both are included as direct investment income in the balance of payments. In most cases, the U.S. parents' claim on earnings is proportionate to its voting interest (e.g., a parent that owns 10 percent of an affiliate is entitled to 10 percent of that affiliate's earnings). No distinction is made between earnings that are distributed to the parent and those that are reinvested; both are included as direct investment income in the balance of payments.

[2] Intracorporate trade (between parents and affiliates) consistently accounts for about three-quarters of trade in intangible intellectual property. See U.S. International Trade Commission (USITC), *Recent Trends in U.S. Services Trade, 2000 Annual Report*, USITC publication No. 3306, May 2000, pp. 15-1 and 15-2.

[3] U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), "A Guide to BEA Statistics on U.S. Multinational Companies," *International Direct Investment* (Washington, DC: USDOC, 1999), p. 201.

Table A-1
U.S. balance of payments, 1990-97

Ln	(Credits +; debits -)	1990	1991	1992	1993	1994	1995	1996	1997
	CURRENT ACCOUNT								
1	**Exports of goods and services and income receipts**	**708,135**	**729,513**	**748,431**	**776,404**	**868,041**	**1,005,715**	**1,074,425**	**1,197,206**
2	Exports of goods and services	536,058	579,956	615,909	641,783	702,073	793,482	849,806	938,543
3	Goods, balance of payments basis	389,307	416,913	440,352	456,832	502,398	575,845	612,057	679,715
4	Services	146,751	163,043	175,557	184,951	199,675	217,637	237,749	258,828
5	Transfers under U.S. military agency sales contracts	9,932	11,135	12,387	13,471	12,787	14,643	15,736	17,561
6	Travel	43,007	43,385	54,742	57,875	58,417	63,395	69,751	73,301
7	Passenger fares	15,298	15,854	16,618	16,528	16,997	18,909	20,413	20,789
8	Other transportation	22,042	22,631	21,531	21,958	23,754	26,081	260,074	27,006
9	Royalties and license fees	16,634	17,819	20,841	21,695	26,712	30,289	32,470	33,781
10	Other private services	39,170	46,531	48,597	52,541	60,121	63,502	72,412	85,566
11	U.S. Government miscellaneous services	668	690	841	883	887	818	893	824
12	Income receipts	172,078	149,558	132,523	134,621	165,968	212,233	224,619	258,663
13	Income receipts on U.S.-owned assets	170,906	148,268	131,098	133,187	164,425	210,472	222,863	256,861
14	Direct investment receipts	66,309	59,062	58,005	67,708	77,874	95,991	103,314	115,795
15	Other private receipts	94,072	81,186	65,977	60,353	82,423	109,768	114,958	137,507
16	U.S. Government receipts	10,525	8,019	7,115	5,126	4,128	4,713	4,591	3,559
17	Compensation of employees	1,172	1,290	1,425	1,434	1,543	1,761	1,756	1,802
18	**Imports of goods and services and income payments**	**-759,646**	**-735,048**	**-763,187**	**-823,167**	**-950,529**	**-1,083,844**	**-1,164,533**	**-1,298,705**
19	Imports of goods and services	-615,996	-609,440	-652,934	-711,722	-800,468	-891,021	-954,124	-1,043,273
20	Goods, balance of payment basis	-498,337	-490,981	-536,458	-589,441	-668,590	-749,574	-803,327	-876,366
21	Services	-117,659	-118,459	-116,476	-122,281	-131,878	-141,447	-150,797	-166,907
22	Direct defense expenditures	-17,531	-16,409	-13,835	-12,086	-10,217	-10,043	-11,029	-11,698
23	Travel	-37,349	-35,322	-38,552	-40,713	-43,782	-44,916	-48,048	-52,051
24	Passenger fares	-10,531	-10,012	-10,603	-11,410	-13,062	-14,663	-15,818	-18,138
25	Other transportation	-24,966	-24,975	-23,767	-24,524	-26,019	-27,034	-27,403	-28,959
26	Royalties and license fees	-3,135	-4,035	-5,161	-5,032	-5,852	-6,919	-7,837	-9,390
27	Other private services	-22,229	-25,590	-22,296	-26,261	-30,386	-35,249	-37,975	-43,909
28	U.S. Government miscellaneous	-1,919	-2,116	-2,263	-2,255	-2,560	-2,623	-2,687	-2,762
29	Income payments	-143,649	-125,608	-110,253	-111,445	-150,061	-192,823	-207,409	-255,432
30	Income payments on foreign-owned assets in the United States	-140,185	-121,582	-105,501	-106,313	-144,109	-186,560	-201,109	-248,676
31	Direct investment payments	-3,907	1,742	-3,341	-9,133	-23,467	-32,186	-35,568	-46,575
32	Other private payments	-95,508	-82,452	-63,079	-57,804	-76,450	-97,004	-97,901	-114,051

Table A-1 (*Continued*)
U.S. balance of payments, 1990-97

Ln	(Credits +; debits -)	1990	1991	1992	1993	1994	1995	1996	1997
33	U.S. Government payments	-40,770	-40,872	-39,081	-39,376	-44,192	-57,370	-67,640	-88,050
34	Compensation of employees	-3,464	-4,026	-4,752	-5,132	-5,952	-6,263	-6,300	-6,756
35	**Unilateral current transfers, net . . . . . .**	**-27,821**	**9,819**	**-35,873**	**-38,522**	**-39,192**	**-35,437**	**-42,187**	**-41,966**
36	U.S. Government grant	-10,359	29,193	-16,320	-17,036	-14,978	-11,190	-15,337	-12,386
37	U.S. Government pensions and other transfers	-3,224	-3,775	-4,043	-4,104	-4,556	-3,451	-4,466	-4,239
38	Private remittances and other transfers	-14,238	-15,599	-15,510	-17,383	-19,658	-20,796	-22,384	-25,341
	CAPITAL AND FINANCIAL ACCOUNT								
	CAPITAL ACCOUNT								
39	**Capital account transactions, net . . . . .**	**-6,579**	**-4,479**	**612**	**-88**	**-469**	**372**	**672**	**292**
	Financial account								
40	**U.S.-owned assets abroad, net (increase/financial outflow(-))**	**-81,570**	**-64,732**	**-74,877**	**-201,014**	**-176,586**	**-330,675**	**-380,762**	**-465,296**
41	U.S. official reserve assets, net	-2,158	5,763	3,901	-1,379	5,346	-9,742	6,668	-1,010
42	Gold	–	–	–	–	–	–	–	–
43	Special drawing rights	-192	-177	2,316	-537	-441	-808	370	-350
44	Reserve position in the International Monetary Fund	731	-367	-2,692	-44	494	-2,466	-1,280	-3,575
45	Foreign currencies	-2,697	6,307	4,277	-797	5,293	-6,468	7,578	2,915
46	U.S. Government assets, other than official reserve assets, net	2,317	2,924	-1,667	-351	-390	-984	-989	68
47	U.S. credits and other long-term assets	-8,410	-12,879	-7,408	-6,311	-5,383	-4,859	-5,025	-5,417
48	Repayment on U.S. credits and other long-term assets	10,856	16,776	5,807	6,270	5,088	4,125	3,930	5,438
49	U.S. foreign currency holdings and U.S. short term assets, net	-130	-974	-66	-310	-95	-250	106	47
50	U.S. private assets, net	-81,729	-73,419	-77,111	-199,284	-181,542	-319,949	-386,441	-464,354
51	Direct investment	-37,519	-38,233	-48,733	-84,412	-80,697	-99,481	-92,694	-109,955
52	Foreign securities	-28,765	-45,673	-49,166	-146,253	-60,309	-100,074	-115,859	-89,174
53	U.S. claims on unaffiliated foreigners reported by U.S. nonbanking concerns . .	-27,824	11,097	-387	766	-36,336	-45,286	-86,333	-120,403
54	U.S. claims reported by U.S. banks, not included elsewhere	12,379	-610	21,175	30,615	-4,200	-75,108	-91,555	-144,822
55	**Foreign-owned assets in the United States, net (increase/financial inflow (+)) . . . . . .**	**142,028**	**111,332**	**171,815**	**283,230**	**307,306**	**467,552**	**574,847**	**751,661**

Table A-1 (*Continued*)
U.S. balance of payments, 1990-97

Ln	(Credits +; debits -)	1990	1991	1992	1993	1994	1995	1996	1997
56	Foreign official assets in the United States, net	33,910	17,389	40,477	71,753	39,583	109,880	127,390	18,119
57	U.S. Government securities	30,243	16,147	22,403	53,014	36,827	72,712	120,679	-2,161
58	U.S. Treasury securities	29,576	14,846	18,454	48,952	30,750	68,977	115,671	-6,690
59	Other	667	1,301	3,949	4,062	6,077	3,735	5,008	4,529
60	Other U.S. Government liabilities	1,868	1,367	2,191	1,313	1,564	-105	-316	-1,798
61	U.S. liabilities reported by U.S. banks, not included elsewhere	3,385	-1,484	16,571	14,841	3,665	34,008	5,704	22,286
62	Other foreign official assets	-1,586	1,359	-688	2,585	-2,473	3,265	1,323	-208
63	Other foreign assets in the United States, net	108,118	93,944	131,338	211,477	267,723	357,672	447,457	733,542
64	Direct investment	48,951	23,695	20,975	52,552	47,438	59,644	88,977	109,264
65	U.S. Treasury securities	-2,534	18,826	37,131	24,381	34,274	99,548	154,996	146,433
66	U.S. securities other than U.S. Treasury securities	1,592	35,144	30,043	80,092	56,971	96,367	130,240	196,258
67	U.S. currency	18,800	15,400	13,400	18,900	23,400	12,300	17,362	24,782
68	U.S. liabilities to unaffiliated foreigners reported by U.S. nonbanking concerns	45,133	-3,115	13,573	10,489	1,302	59,637	39,404	107,779
69	U.S. liabilities reported by U.S. banks, not included elsewhere	-3,824	3,994	16,216	25,063	104,338	30,176	16,478	149,026
70	**Statistical discrepancy (sum of above items with sign reversed)**	**25,454**	**-46,405**	**-46,921**	**3,157**	**-8,571**	**-23,683**	**-65,462**	**-143,192**
	Memoranda:								
71	Balance on goods (lines 3 and 20)	-109,030	-74,068	-96,106	-132,609	-166,192	-173,729	-191,270	-196,651
72	Balance on services (lines 4 and 20)	29,091	44,584	59,081	62,669	67,797	76,190	86,952	91,921
73	Balance on goods and services (lines 2 and 19)	-79,939	-29,484	-37,025	-69,940	-98,395	-97,539	-104,318	-104,730
74	Balance on income (lines 12 and 29)	28,429	23,950	22,269	23,176	15,907	19,410	17,210	3,231
75	Unilateral current transfers, net (line 36)	-27,821	9,819	-35,873	-38,522	-39,192	-35,437	-42,187	-41,966
76	Balance on current account (lines 1, 18, and 35 or lines 73, 74, and 75)	-79,332	4,284	-50,629	-85,286	-121,680	-113,566	-129,295	-143,465

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 84-85.

Table A-2
Current account flows resulting from U.S. direct investment abroad, 1997

	Millions of dollars
Income	115,795
Earnings	113,581
Distributed earnings	51,937
Reinvested earnings	61,644
Interest	2,215
U.S. parents' receipts	4,848
U.S. parents' payments	-2,634
Royalties and license fees	22,231
U.S. parents' receipts	23,221
U.S. parents' payments	-989
Other services	8,343
U.S. parents' receipts	17,271
U.S. parents' payments	-8,927

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 84-85.

Table A-3
Capital account flows constituting U.S. direct investment abroad, 1997

	Millions of dollars
Capital	-109,955
Equity capital	-43,907
Increases in equity capital	-65,808
Decreases in equity capital	21,899
Reinvested earnings	-61,644
Intercompany debt	-4,403
U.S. parents' receivables	-13,233
U.S. parents' payables	8,830

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 84-85.

affiliate. Intercompany debt flows include U.S.-parent receivables (e.g., an outflow that occurs when a parent extends a loan to an affiliate) and U.S.-parent payables (e.g., an inflow that occurs when the affiliate repays the loan). Reinvested earnings are the U.S. parent's claim on the undistributed after-tax earnings of its foreign affiliate.[4]

The U.S. direct investment position abroad is a stock item, which reflects the cumulative, year-end value of U.S. parents' equity (including retained earnings) in, and net outstanding loans to, their foreign affiliates (table A-4). The U.S. position can be reported in terms of historical cost, which in

[4] Ibid., p. 202.

most cases is the initial acquisition price for the affiliate; current cost, which reflects the parents' claims on the tangible assets of the affiliate; or market value, which reflects the stock price of the affiliate. This report uses historical cost throughout, as country and industry detail are only available in historical cost terms.[5]

Financial and operating data include balance sheets and income statements, sales by type and destination, employment and employee compensation, and other items.[6] These data are reported for two groups of affiliates: all foreign affiliates and majority-owned foreign affiliates (MOFAs). MOFAs are foreign affiliates in which the combined direct and indirect ownership of all U.S. parents exceeds 50 percent.[7] In general, there is more detailed financial and operating data on MOFAs than on non-majority-owned affiliates. In 1997, MOFAs accounted for 90 percent of all foreign affiliates, and 81 percent of foreign affiliates' employment.[8]

Data on Foreign Direct Investment in the United States (FDIUS)

Data pertaining to FDIUS are collected and treated in much the same way as data on USDIA. With respect to FDIUS, BEA collects (1) balance of payments data and direct investment position data and (2) financial and operating data of U.S. affiliates (i.e., foreign-owned affiliates). As before, the balance of payments and direct investment position data reflect transactions between U.S. affiliates, both new and preexisting, and their foreign parents. Financial and operating data provide a picture of the overall activities of U.S. affiliates.[9]

Balance of payments data include current account flows, which in turn include direct investment income, royalties and license fees, and service transactions with affiliated foreigners (table A-1, lines 26 (part), 27 (part), and 31, and delineated in table A-5), and capital account flows, which include equity capital, intercompany debt, and reinvested earnings

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[5] Year-to-year changes in historical cost position reflect cumulative capital flows and valuation adjustments, the latter of which are incorporated to reflect exchange rate fluctuation, capital gains and losses, and other factors. Ibid., pp. 203-204.

[6] Financial and operating data are not adjusted for the share of U.S. parent ownership because they reflect affiliate-wide operations.

[7] USDOC, BEA, "A Guide to BEA Statistics on U.S. Multinational Companies," p. 204.

[8] USDOC, BEA, *Survey of Current Business*, July 1999, p. 20.

[9] USDOC, BEA, "A Guide to BEA Statistics on Foreign Direct Investment in the United States," *International Direct Investment* (Washington, DC: USDOC, 1999), pp. 218-219.

Table A-4
U.S. direct investment position abroad (USDIA) and foreign direct investment position in the United States (FDIUS), 1990-97

Year-end	USDIA Stock	FDIUS Stock
	Millions of dollars	
1990	430,521	394,911
1991	467,844	419,108
1992	502,063	423,131
1993	564,283	467,412
1994	612,893	480,667
1995	699,015	535,553
1996	795,195	598,021
1997	865,531	693,207

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, p. 50.

Table A-5
Current account flows[1] resulting from foreign direct investment in the United States (FDIUS), 1997

	Millions of dollars
Income	-46,575
Earnings	-37,301
Distributed earnings	-17,036
Reinvested earnings	-20,265
Interest	-9,275
U.S. affiliates' payments	-11,135
U.S. affiliates' receipts	1,861
Royalties and license fees	-4,175
U.S. affiliates' payments	-5,978
U.S. affiliates' receipts	1,803
Other private services	1,202
U.S. affiliates' payments	-8,801
U.S. affiliates' receipts	10,001

[1] Income, royalties and licensing fees, and other services appear as separate line items in the current account.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 84-85.

Table A-6
Current account flows constituting foreign direct investment in the United States (FDIUS), 1997

	Millions of dollars
Capital	109,264
Equity capital	64,654
Increases in equity capital	75,052
Decreases in equity capital	-10,399
Reinvested earnings	20,265
Intercompany debt	24,345
U.S. affiliates' payables	26,634
U.S. affiliates' receivables	-2,290

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 84-85.

(table A-1, line 64, and delineated in table A-6). Direct investment position is the year-end value of foreign parents' equity (including retained earnings) and net outstanding loans to their U.S. affiliates. Financial and operating data include balance sheets and income statements, employment and employee compensation, and other such information.[10] Financial and operating data are reported both for all U.S. affiliates and for majority-owned U.S. affiliates (MOUSAs) alone. In 1997, MOUSAs accounted for 85 percent of U.S. affiliates,[11] and 82 percent of U.S. affiliates' employment.[12]

[10] Ibid.

[11] USDOC, BEA, *Foreign Direct Investment in the United States: Preliminary Results From the 1997 Benchmark Survey*, tables A-2 and J-2.

[12] Ibid., table J-1.

Appendix B

Theoretical Models of Foreign Direct Investment

Introduction

This section focuses on developments in the economic theory of the multinational corporation. The theories discussed include both discursive analyses of firm behavior in the managerial-economics tradition and formally executed theoretical models using abstract mathematics.

Foreign Investment in Neoclassical Theory

In the neoclassical ("Heckscher-Ohlin") model of international trade, which dominated the economic literature on the subject from the 1940s through the 1970s, inputs into the production process ("factors of production") such as labor and capital were assumed to be immobile. The pattern of international trade was determined by the relative abundance of labor and capital in different countries, with labor-abundant countries exporting goods with labor-intensive production technologies and vice versa. While the assumption of limited factor mobility accorded reasonably well with the controls on immigration imposed by many countries early in the twentieth century[1] and the collapse of international capital flows associated with the unraveling of the gold standard in the 1920s,[2] the theoretical assumption of zero capital mobility became increasingly unrealistic in the Bretton Woods era. After European currencies returned to convertibility on the current account in 1958, flows of both portfolio and direct investment capital again became an increasingly important part of the world economy.

Mundell attempted to incorporate trade in the factors of production into the Heckscher-Ohlin model. In the original model, trade in goods led to equal prices for labor and capital in all countries, leaving no incentives for factor movements. Mundell showed that in a world with no goods trade, factor movements alone would ensure equalization of factor prices. Thus, trade and investment were seen to be substitutes for each other; international trade, in fact, was simply a way to trade the factors of production embodied in goods.[3]

While Mundell's model was widely taught and long influential, subsequent theoretical and empirical work has established clearly that this view of the relationship between international trade and investment is unrealistic, flowing from fairly narrow assumptions in the neoclassical framework. Markusen describes the consensus which has emerged since the mid-1980s as follows:

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[1] Jeffrey G. Williamson, "Globalization, Labor Markets and Policy Backlash in the Past," *Journal of Economic Perspectives (JEP)*, vol. 12, No. 4 (Fall 1998), pp. 51-72.

[2] Barry Eichengreen, *Globalizing Capital: A History of the International Monetary System* (Princeton, NJ: Princeton University Press, 1996).

[3] Robert Mundell, "International Trade and Factor Mobility," *American Economic Review (AER)*, vol. 47 (1957), pp. 321-355.

Trade in factors as well as trade in goods may be necessary to exhaust the gains from trade and introducing factor trade may increase the volume of commodity trade in a wide variety of circumstances. In both a welfare and in a volume-of-trade sense, trade in goods and factors may be complements.[4]

The policy implication of this realization is that trade liberalization *may* lead to increased FDI flows. Similarly, investment liberalization *may* lead to increased international trade.

The OLI Framework and Decision-Making in Multinational Firms

The tools of managerial economics and industrial organization provide an alternative method of understanding direct investment, focusing on the decision-making processes of the multinational firms engaging in such investment. Most of the important considerations relating to these processes were synthesized in the eclectic paradigm of John Dunning, also known as the OLI framework.[5] This model suggests that there are three necessary conditions for a firm to be willing to undertake

[4] James R. Markusen, "Trade Versus Investment Liberalization," National Bureau of Economic Research (NBER) Working Paper No. 6231 (Cambridge, MA: NBER, 1997), p. 1.

[5] See John H. Dunning, "Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach," in B. Ohlin, et. al., eds., *The International Allocation of Economic Activity* (London: Macmillan, 1977); and John H. Dunning, *International Production and the Multinational Enterprise* (London: Allen and Unwin, 1981). Among the many recent studies employing the OLI framework are David Floyd, "Foreign Direct Investment in Poland: Is Low Cost Labor Really the Sole Determinant," *Economic Issues*, vol. 1, No. 2 (1996), pp. 29-39; Peter H. Gray, "The Eclectic Paradigm: The Next Generation," *Transnational Corporations*, vol. 5, No. 2 (1996), pp. 51-65; Carmela Martin and Francisco J. Velazquez, "The Determining Factors of Foreign Direct Investment in Spain and the Rest of the OECD: Lessons for CEECs," Centre for Economic Policy Research Discussion Paper No. 1637 (1997); and P.J.D. Smith, "Patent Rights and Bilateral Exchange: A Cross-Country Analysis of U.S. Exports, Affiliate Sales, and Licenses," Working Paper, Dept. of Applied Economics, University of Minnesota, 1998.

investments abroad: ownership (O) advantages, location (L) advantages, and internalization (I) advantages.[6]

First, a firm's *ownership advantage* may include intangible assets which provide the firm with a market power advantage in foreign markets. Such assets may include patents, non-patented proprietary technology, managerial or engineering expertise, trademarks, and reputation.[7] Firm-specific assets like these can be utilized in more than one production location within the firm simultaneously. Other advantages of ownership of geographically dispersed units within the same firm are of a managerial type: for example, the benefits which new affiliates derive from the experience and human capital of the parent company, or the ability of a firm operating in many countries to pursue strategies of diversification, sourcing, arbitrage, and risk management which are not available to a single-country firm.

Second, there must be a *location advantage* of the host country to make it profitable for the firm to produce there, rather than access the market with exports. Location advantages of host countries for horizontal multinational enterprises (MNEs) include large markets and high trade costs, such as tariff and non-tariff barriers. Location advantages for vertical MNEs are factor price differences across countries, such as the costs of skilled and unskilled labor, the availability of natural resources, and infrastructure such as transportation and telecommunications, and established business practices and customs.

Within the OLI framework, the first two conditions are necessary for a firm to engage in FDI, but not sufficient. *Internalization advantages* must also be present in order for the MNE to carry out production via FDI rather than license its intangible assets to host country firms. This is related to capturing the benefits of the common governance of a set of interrelated activities. Internalization may be required if the owner of the asset fears opportunistic behavior on the part of the licensee, or if the

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[6] For more in-depth discussion, see Dunning, *International Production and the Multinational Enterprise*; Dunning, "Explaining Foreign Direct Investment in Japan," in Yoshitomi Masaru and Edward M. Graham, eds., *Foreign Direct Investment in Japan* (Vermont: Edward Elgar, 1996) pp. 8-63; and James Markusen, "The Boundaries of Multinational Enterprises and the Theory of International Trade," *JEP*, vol. 9, No. 2 (1995), pp. 169-189. There are important parallels between the OLI analysis of the multinational firm and the work of Oliver Williamson on transaction costs and firm-specific assets, which has been heavily influential in the analysis of vertically integrated firms and antitrust law. Oliver Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (New York: Free Press, 1975); and Oliver Williamson, *The Economic Institutions of Capitalism* (New York: Free Press, 1985).

[7] Stephen Hymer's 1960 doctoral dissertation, published in Stephen H. Hymer, *The International Operations of National Firms: A Study of Foreign Direct Investment* (Cambridge, MA: MIT Press, 1976) represents a seminal recognition of the necessary role of ownership advantages for the existence of the multinational firm.

desired relationship with the licensee cannot be spelled out in a sufficiently simple and enforceable contract. Motives for internalization also include control of supplies and conditions of purchase of inputs, a need to protect the quality of intermediate or final products, and the ability to engage in strategies such as cross-subsidization and transfer pricing.

Product Cycle Theory

The product cycle hypothesis of international trade provides an explanation for changes over time in the status of particular products in a national economy with respect to whether they are exported or imported and whether direct investment plays a role in their production. Within the product cycle framework, a product goes through a full life cycle from the innovation stage, to the maturing stage, then to standardization.[8] First, new innovations in the technologies underlying products are predominantly developed in the industrialized nations, then technology for producing the good becomes fairly stable, and demand in other high- and middle-income countries rises sufficiently such that entrepreneurs there find it profitable to begin production themselves. Finally, production of the product becomes routine and labor-intensive, and mass production is located in developing countries.

The product cycle framework provides theoretical insight into the existence of vertical MNEs, and although an intuitively appealing approach, there is little definitive evidence to support this model. There are studies that suggest a strong positive correlation between net export strength of an industry, and an industry=s R&D intensity. This is indirect evidence at best, and it remains unclear whether high R&D spending in advanced economies is a determinant of trade, or the result of profitable trading opportunities based on other sources of comparative advantage.[9] Many proponents of the product cycle point to the consumer electronics, chemical, and textile industries. Overall, however, empirical evidence of this model has been mixed.[10]

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[8] See Raymond Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics (QJE),* vol. 80 (1966), pp. 190-207; Raymond Vernon, *The Technology Factor in International Trade* (New York: Columbia University Press, 1970); and James R. Markusen et. al., *International Trade: Theory and Evidence* (New York: McGraw-Hill, 1995).

[9] Markusen, et. al., *International Trade: Theory and Evidence*.

[10] See Robert C. Feenstra and Andrew K. Rose, "Putting Things in Order: Patterns of Trade Dynamics and Growth," NBER Working Paper No. 5975 (1997); Joseph E. Gagnon and Andrew K. Rose, "Dynamic Persistence of Industry Trade Balances: How Pervasive is the Product Cycle?" *Oxford Economic Papers,* vol. 47 (1992), pp. 229-248; and John Cantwell, "The Globalisation of Technology: What Remains of the Product Cycle Model?" *Cambridge Journal of Economics,* vol. 19, No. 1 (1995), pp. 155-74.

Formal Theories of FDI

In the 1980s, theorizing about the multinational corporation moved increasingly from the discursive mode typical of managerial economics to the formal, mathematical mode of international trade theory. The new theories usually developed the implications of the industrial-organization approach embodied in the OLI framework, in many cases acknowledging an intellectual debt to Hymer and Dunning. In a useful survey, Brainard categorizes the main theoretical contributions through 1992 as focusing on either the location (L) or internalization (I) decisions in the OLI paradigm.[11] Unless otherwise specified, the theoretical models described below are two-country models.

Location-Based Theories

Approximately 20 years ago, theories of international trade emphasizing monopolistic competition and increasing returns to scale began to pose a serious intellectual challenge to the Heckscher-Ohlin model.[12] One of the primary appeals of these models, known collectively as the "new international trade theory," is that they explained two important empirical phenomena which were difficult to account for in the Heckscher-Ohlin model: the fact that most international trade was among the relatively similar economies of North America, Western Europe and Japan rather than between those economies and developing economies; and the fact that individual countries frequently export and import similar goods simultaneously (e.g. plastics, electronic components), but slightly different varieties.

Helpman and Krugman developed general-equilibrium models of the multinational corporation which were consistent with the new

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[11] Lael S. Brainard, "An Empirical Assessment of the Proximity-Concentration Tradeoff Between Multinational Sales and Trade," NBER Working Paper No. 4583 (1993).

[12] See Paul R. Krugman, "Increasing Returns, Monopolistic Competition, and International Trade," *Journal of International Economics (JIE),* vol. 9 (1979), pp. 469-480; Avinash Dixit and Victor Norman, *Theory of International Trade,* ch. 9 (Cambridge, UK: Cambridge University Press, 1980); Elhanan Helpman, "International Trade in the Presence of Product Differentiation, Economies of Scale, and Monopolistic Competition," *JIE,* vol. 11 (Aug. 1981), pp. 305-340; Wilfred Ethier, "National and International Returns to Scale in the Modern Theory of International Trade," *AER,* vol. 72 (June 1982), pp. 950-959; and Elhanan Helpman and Paul Krugman, *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition and the International Economy* (Cambridge, MA: MIT Press, 1985).

international trade theory.[13] In these models, "headquarters services" (such as centralized management or R&D) take place in one country while production takes place in another country. There are both plant-specific economies of scale (increasing production at one location reduces unit costs) and firm-specific economies of scale (there are fixed costs of producing the headquarters service and adapting it for use in producing the firm's various products). The activity of multinational corporations (MNCs) in these models is represented by intrafirm trade both in "invisible" headquarters services and in intermediate goods. The results of their model, like that of the Heckscher-Ohlin model, are driven by factor price equalization. Headquarters services and intermediate goods are presumed to differ in factor intensity from final goods, and so are located in different places.

Markusen (1984) represents another early attempt at a general-equilibrium model including multinational firms.[14] The core of the paper's approach is a representation of firms as having multi-plant economies of scale. The activities of the corporate headquarters, such as R&D, marketing, and finance, can enhance the productivity of production locations in several countries simultaneously. This approach differs from the Helpman/Krugman approach in several respects. First, the multinational firm operates in a market structure characterized by monopoly or duopoly rather than by product differentiation and free entry. Second, production itself takes place in more than one country, rather than simply being in one country and separated from the headquarters activity. Third, the model does not rely on the unrealistic assumption of factor-price equalization.[15] Although international portfolio investment has proven to be highly responsive to rate-of-return differences across countries, differences in the cost of capital appear to be a relatively weak determinant of direct investment flows. Moreover, multinationals frequently purchase inputs of all kinds from their host economies rather than moving them. To underscore the point that the sharing of headquarters assets alone is sufficient to produce multinationalization, the model uses two identical countries with immobile supplies of capital and labor in order to rule out any motivation for foreign investment based on capital movements in search of higher returns.

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[13] Elhanan Helpman, "A Simple Theory of International Trade with Multinational Corporations," *Journal of Political Economy,* vol. 92 (1984), pp. 451-471; Helpman, "Multinational Corporations and Trade Structure," *Review of Economic Studies (RES),* vol. 52 (July 1985), pp. 443-458; and Helpman and Krugman, *Market Structure and Foreign Trade*, chs. 12 and 13.

[14] James R. Markusen, "Multinationals, Multi-Plant Economies, and the Gains from Trade," *JIE,* vol. 16 (1984) pp. 205-226.

[15] Batra and Ramachandran produced a formalized Heckscher-Ohlin type model with multinational firms and price equalization under perfect competition. Raveendra N. Batra and Rama Ramachandran, "Multinational Firms and the Theory of International Trade and Investment," *AER,* vol. 70 (1980), pp. 278-290.

In a partial-equilibrium framework with a Cournot-Nash oligopoly and positive transport costs between countries, Horstman and Markusen exploit the description of firm technology used by Markusen in order to explore the various market structures which may arise under different cost structures.[16] There are both firm-specific and plant-specific fixed costs, which give rise to firm-specific and plant-specific economies of scale. The presence of firm-specific fixed costs means that multinational firms are more technically efficient than firms under separate national ownership, which must duplicate these costs. But MNCs do not arise in every situation. If plant-specific economies of scale are large while transport costs and firm-specific economies of scale are low, a duopoly arises in which nationally-owned firms produce in and export from both countries. Raising both firm-specific costs and transport costs renders the above duopoly unprofitable and leads to a situation in which one MNC operates plants in both countries. Cases in which plant-specific economies of scale are low can give rise to equilibria with two plants in each country, one owned by the home-based multinational and the other by the foreign-based multinational. Introducing tariffs, and changing them, can cause radical shifts from one market structure to another, including the possibility that a multinational based in one country may choose to produce only in the foreign country, behind the tariff wall, and serve the home market by imports.

Brainard combines a product differentiation model comparable to Helpman and Krugman with a cost structure for the firm comparable to that of Horstman and Markusen, with the added feature that expenditures on the headquarters activity ("R&D") in fact reduce costs in the production activity.[17] The model is worked out in general equilibrium, filled out by the existence of an undifferentiated agricultural good produced with constant returns to scale. In extensions, trade in intermediate goods is permitted, and factor price differences are admitted.

The Brainard model permits a wider range of possible outcomes than the Horstman/Markusen model. These include the coexistence of national and multinational firms in the same industry, and the complete substitution of intraindustry flows of intangibles for goods trade. The effects of changing the elasticity of substitution between varieties can be analyzed, as well as changes in tariffs and taxes on corporate profits.

A newer class of models, known as "knowledge-capital models," emphasize trade in knowledge-intensive headquarters services within

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[16] Ignatius Horstman and James R. Markusen, "Licensing versus Direct Investment: A Model of Internalization by the Multinational Enterprise," *Canadian Journal of Economics (CJE),* vol. 20, No. 3 (Aug. 1987), pp. 464-481.

[17] Brainard, "An Empirical Assessment of the Proximity-Concentration Tradeoff between Multinational Sales and Trade."

multinational firms.[18] These models consider both horizontal and vertical multinationals simultaneously with national firms. Vertical multinationals are represented by a headquarters in the home country and a production facility in the other country, and may or may not export back to the headquarters country. The cost setup for the multinationalized industry is characterized again by plant-specific and firm-specific economies of scale, and countries differ both by size and by their relative endowments of skilled and unskilled labor. Headquarters activities are assumed to be more skilled-labor intensive than industrial production activities, which are in turn more skilled-labor-intensive than in the non-multinationalized industry. Given the characteristics of the two countries involved, the types of firms existing and of trade engaged in vary with the degree of trade and investment liberalization. Vertical multinationals dominate when countries are very different in relative factor endowments (e.g. capital/labor, or skilled/unskilled labor), while horizontal FDI predominates between similarly-endowed, similar-sized countries in the presence of relatively high trade costs.

In the knowledge-capital framework, investment liberalization by itself can lead to an increase in the volume of trade. In some cases, trade or investment liberalization can lead to a change in the direction of trade. For example, a country with large oil reserves but scarce knowledge capital relating to extraction or distribution might import oil if trade is free but investment is restricted, but export oil if foreign investment is permitted. Also, simultaneous trade and investment liberalization may lead to increases in real income for everyone in the economy. This result contrasts with economists' intuition as influenced by the Heckscher-Ohlin model, in which owners of the factor used intensively in the import-competing good lose out when imports are liberalized (the Stolper-Samuelson theorem).

A characteristic feature of knowledge-capital models is that they do not lend themselves to closed-form solutions but, rather, are analyzed through numerical simulation. There have been several attempts to confront certain predictions of the knowledge-capital model with econometric testing.[19] Some predictions of the model which have been confirmed include the prevalence of FDI between large, relatively equal-sized economies differing in skilled labor abundance, the tendency for affiliates

[18] See, e.g., Markusen "Trade Versus Investment Liberalization," and James Markusen, et. al., "A Unified Treatment of Horizontal Direct Investment, Vertical Direct Investment, and the Pattern of Trade in Goods and Services," NBER Working Paper No. 5696 (Aug. 1996).

[19] See David Carr, et. al., "Estimating the Knowledge-Capital Model of the Multinational Enterprise," NBER Working Paper No. 6773 (1998); and James Markusen and Keith Maskus, "Multinational Firms: Reconciling Theory and Evidence," NBER Working Paper No. 7163 (1999).

in large economies to serve local markets, and the corresponding tendency for affiliates in countries with low levels of labor skill to engage in exporting.

Internalization-Based Theories

Some of the models described above already include activities internalized within the firm; namely, those which involve vertical integration.[20] The models described below focus more closely on internalization by examining the incentives which lead firms to engage in direct investment rather than licensing of the firm-specific asset to outside parties.

Ethier, using a general equilibrium framework, sought to explain why firms might in some cases wish to exploit their technologies internally by means of an overseas subsidiary, while in other cases preferring to license, i.e. to endogenize the internalization decision.[21] Ethier's model highlights the difficulties which licensors and licensees may have in agreeing to mutually acceptable and enforceable contracts between them, and the possibility of circumventing these difficulties by internalization, i.e. by having both parties under common ownership. As Ethier notes, [A] contract that makes arms'-length behavior identical to internalized behavior becomes infeasible when the home office and plants must exchange a large volume of diverse information. This does not mean that internalization dominates; with much information to be processed decentralized decision making is likely to be attractive ...[w]hich structure is better will depend on circumstances.[22]

In Ethier's framework, a variety of differentiated manufactures may be produced along with one undifferentiated good ("wheat") which exists in order to portray a general equilibrium. Production of manufactured goods involves three stages: research, "upstream" production of an intermediate good, and "downstream" production of a non-traded final good. The intermediate good comes in different qualities, with high-quality types more expensive to produce and more desirable to consumers. Most of these features are not unusual for trade models.

The innovative focus of the model is on the issue of whether or not the upstream producer can agree with the downstream producer on a contract for sale of the intermediate good at a particular price and quantity. The

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[20] Helpman and Krugman, *Market Structure and Foreign Trade*, and Markusen, "Trade Versus Investment Liberalization."

[21] Wilfred Ethier, "The Multinational Firm," *QJE*, vol. 101 (Nov. 1986), pp. 805-834. By contrast, Markusen, "Multinationals, Multi-Plant Economies, and the Gains from Trade;" Helpman, "Multinationals Corporations and Trade Structure;" and Helpman and Krugman, *Market Structure and Foreign Trade*, had assumed that multiplant economies would automatically be internalized within the firm without exploring the outside option of licensing.

[22] Ethier, The Multinational Firm, p. 807.

upstream producer's problem is that the quality it delivers depends on the success of its research efforts, which are costly and have uncertain results. When research is successful, it makes higher-quality varieties cheaper to produce. The uncertainty of research makes it impossible to guarantee in advance whether a high-quality or low-quality intermediate good will be delivered.

If there is a contract, either the upstream and downstream units have to agree on an arrangement in which the downstream unit pays more for higher delivered quality, or on some average price regardless of what quality is delivered. Given the contract, the upstream unit can then decide how much to spend on research.

Ethier shows that there are situations in which the owner of the upstream technology will prefer to license it, and others in which the upstream firm will prefer to acquire the downstream firm and operate them jointly. When there are large differences in the productivity-adjusted wage of labor in the upstream and downstream locations, licensing is more likely; when there are large differences between the high and low-quality varieties of the intermediate good, direct investment is likely.

Horstman and Markusen consider the licensing-versus-FDI decision in the context of an MNE which has technological capabilities to produce both high and low-quality varieties of a product while other firms can only produce low-quality varieties.[23] They note that multinational activity is highly correlated with advertising expenditures; MNEs spend considerable resources signaling to consumers the quality advantages of their products. In the case of licensing, the MNE must provide the licensee incentives to maintain the firm's reputation for quality. If it is infeasible to provide such incentives effectively, the owner of the high-quality technology will prefer to engage in FDI and internalize production.

It turns out that licensing only takes place if the licensee has cost advantages which make it worthwhile for the licensor to provide incentives to the licensee to preserve the licensor's reputation.[24] Moreover, licensing is more likely in small or speciality markets, and when the difference between high- and low-quality varieties is not all that great. The licensing decision also depends on the interaction between interest rates and economies of scope.

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[23] Horstman and Markusen, Licensing versus Direct Investment.

[24] These cost advantages are modeled as economies of scope in the licensee's production of the high- and low-quality varieties.

Evidence on the Determinants of U.S. Inward and Outward FDI

This section presents an overview of the determinants of FDI as reported in the empirical literature. The first part of this section is devoted to characteristics of countries which make them more or less attractive as destinations for outbound FDI, or more or less significant as sources of inbound FDI. The second part is devoted to characteristics of industries and firms which make them more or less likely to engage in foreign direct investment.

Host and Source Country Characteristics

Size of Partner Economy

GDP measures market size and is regarded as a location advantage of the host country. Empirical evidence suggests strongly that a host country's GDP is a positive and significant determinant of FDI. Lee and Mansfield found that a host country's GDP was a positive determinant of U.S. outward FDI as measured by capital outflow.[25] Population is another measure of market size. Not surprisingly, Smith found a host country's population to have a positive and significant effect on U.S. affiliate sales.[26] Empirical evidence suggests that these findings hold for inward U.S. FDI as well. For example, Ray found that relative growth in U.S. GNP attracts inward FDI.[27] Barrell and Pain examine outward U.S. FDI over 1971 to 1988 and found that a one-percent rise in host-country GNP led to a 0.83% rise in real investment stock by U.S. MNEs.[28]

Per Capita GDP

Per capita GDP measures the average buying power of a consumer in the host country, as opposed to the total market size, which is measured by

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[25] Jeong-Yeon Lee and Edwin Mansfield, "Intellectual Property Protection and U.S. Foreign Direct Investment," *RES*, vol. 78, No. 2 (1996), pp. 181-186.

[26] Smith, "Patent Rights and Bilateral Exchange."

[27] Edward J. Ray, "The Determinants of Foreign Direct Investment in the United States, 1979-85," in Robert C. Feenstra, ed., *Trade Policies for International Competitiveness* (Chicago: University of Chicago Press, 1989).

[28] Ray Barrell and Nigel Pain, "An Econometric Analysis of Foreign Direct Investment," *RES*, vol. 78, No. 2 (1996), pp. 200-207.

GDP or population. Empirical evidence suggests that inward FDI rises with a host country's income level.[29]

Skilled Labor Abundance

The share of skilled labor is another important determinant of inward and outward FDI. Skilled labor abundance is defined generally as the share of skilled workers in a country's labor force (professional, technical, and kindred workers). A higher share of skilled labor in a potential host country can encourage inward FDI, particularly when the FDI activity, such as R&D, requires skilled labor. This primarily applies to horizontal FDI rather than vertical FDI. As regards FDI that is associated with geographical product fragmentation, an increase in unskilled FDI in a host country is thought to increase vertical FDI. Although there is not much direct evidence of the effect of skilled labor abundance on host country and U.S. outward FDI, there is evidence on this for other countries' outward FDI. Using a multicountry sample, Carr et al. found that an increase in the parent country's skilled labor abundance relative to the host country increases affiliate sales from the parent to the host. For firms that tend to keep R&D activities at home and allocate lower levels of the production process abroad, skilled labor abundance would not attract FDI.[30]

Wages

In principle, it would seem that more U.S. FDI should be attracted to low-wage countries in order to save costs. In studies involving location decisions over multiple countries, this result has been difficult to obtain, in part because wages are highly correlated with per capita income, which is positively associated with FDI. Using bilateral U.S. direct investment flows to and from the United Kingdom, Germany, France, Japan, and Canada, Cushman found that a rise in the host-country wage or a fall in the source-country wage discouraged FDI unless a strong capital-labor substitution effect was present.[31] Similarly, a rise in wages in the source country can induce outward direct investment. Barrell and Pain found

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[29] Harry Grubert and John Mutti, "Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making," *RES*, vol. 73, No. 2 (1991), pp. 285-93. It should be noted that in "gravity-type" econometric specifications, in which international flows of trade or investment are functions of country size, economic distance, and other variables, the independent variables are usually entered as logarithms. This means that of the three possible independent variables {GDP, population, per capita GDP} only two can be entered into the regression, with the effect of the third being derivable from the estimated coefficients for the first two.

[30] Carr, et. al., "Estimating the Knowledge-Capital Model of the Multinational Enterprise."

[31] David O. Cushman, "The Effects of Real Wages and Labor Productivity on Foreign Direct Investment," *Southern Economic Journal*, vol. 54, No. 1 (1987), pp. 174-185.

that a one-percent increase in U.S. unit labor costs caused a 0.49 % increase in outward investment as measured by the stock of U.S. FDI abroad.[32]

Effective Tax Rates

Taxes are potentially important in attracting FDI. There is empirical evidence that FDI is sensitive to differences across countries in corporate tax rates. This literature is extensively reviewed in Hines.[33] For example, Grubert and Mutti found from a multi-country data set that a 10 percent reduction in the host country tax rate could increase the stock of plant and equipment owned by foreign affiliates by 65 percent.[34]

A report by the U.S. International Trade Commission, summarizing the literature to date, noted that U.S. direct investment abroad is higher in countries for which the after-tax foreign rate of return is high relative to the U.S. after-tax rate of return on comparable investment, and that firms also prefer to invest in places where the after-tax cost of capital is lower. Similarly, countries with higher tax rates are more likely to invest in the United States, other things being equal. Foreigners prefer to invest in those U.S. states which have lower tax rates, particularly if their home governments do not offer foreign tax credits.[35]

Intellectual Property Rights

The primary ownership advantages of MNEs are related to intellectual property, particularly R&D, marketing expenditures, scientific and technical workers, product newness and complexity, and product differentiation. Not surprisingly, then, strong intellectual property rights can be important in allowing the MNE to exploit these ownership advantages.

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[32] Barrell and Pain, "An Econometric Analysis of Foreign Direct Investment."

[33] James R. Hines, "Tax Policy and the Activities of Multinational Corporations," NBER Working Paper No. 5589 (1996).

[34] Grubert and Mutti, "Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making." Grubert and Mutti also found that the U.S. appears to import more from and export more to low-tax countries that host greater levels of U.S. direct investment abroad (USDIA). But a bilateral view can be misleading since U.S. exports may simply have shifted from one low tax country to another and total U.S. exports have not changed at all. Thus, it may be necessary to examine trade and investment data on a multilateral basis.

[35] U.S. International Trade Commission (USITC), Implications for U.S. Trade and Competitiveness of a Broad-Based Consumption Tax, Publication No. 3110, June 1998.

In general, weak intellectual property rights (IPRs) encourage MNEs to engage in FDI rather than license their technologies to unaffiliated firms.[36] One would expect the relationship between FDI and strong IPRs to vary in different sectors. Investment in low-tech goods and services, including textiles and apparel, electronic assembly, distribution, and hotels, depends more on input costs and less on IPRs. In support of this view, Lee and Mansfield found that investment in industries which are sensitive to IPRs and characterized by relatively large R&D budgets, such as chemicals, pharmaceuticals, and bio-technology, is more affected by the strength of intellectual property rights.[37]

There is no strong evidence to suggest that a host country's adherence to IPR agreements has an effect on U.S. affiliate sales. Moreover, as the number of countries which belong to an agreement on IPRs increases (TRIPS), it is more difficult to observe a clearly discernible effect.[38]

Trade Barriers and Transport Costs

In general, an increase in the host country's trade costs will raise production by affiliates of parent country firms.[39] On a fairly aggregate level, trade barriers and transport costs cause substitution effects toward direct investment and away from exports.[40] For example, firms may choose FDI in order to avoid high tariffs; a sufficiently high tariff may induce Atariff-jumping@ foreign direct investment. Other import barriers such as voluntary export restraints may also encourage FDI; Japanese automobile manufacturers in the European Union and the United States increased direct investment in response to these measures. There is some empirical evidence to suggest that protectionist threats, such as antidumping or escape clause actions, may induce foreign direct investment. Blonigen and Feenstra provided evidence to suggest that firms engage in such *quid pro quo* investments in order to defuse protectionist threats of this kind.[41] Brainard demonstrates that the share of foreign affiliate sales in the sum of exports and affiliate sales is

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[36] Smith, "Patent Rights and Bilateral Exchange."

[37] Lee and Mansfield, "Intellectual Property Protection and U.S. Foreign Direct Investment." Seyoum found the strength of IPRs in the host country to be a strong determinant of inward FDI. Belay Seyoum, "The Impact of Intellectual Property Rights on Foreign Direct Investment," *Columbia Journal of World Business*, vol. 31, No. 1 (1996), pp. 50-59.

[38] Michael Ferrantino, "The Effect of Intellectual Property Rights on International Trade and Investment," *Weltwirtschaftliches-Archiv*, vol. 129, No. 2 (1993), pp. 300-331.

[39] Carr, et. al., "Estimating the Knowledge-Capital Model of the Multinational Enterprise."

[40] World Trade Organization (WTO), *Annual Report, Trade and Foreign Direct Investment* (Geneva: WTO, 1996).

[41] Bruce Blonigen and Robert Feenstra, "Protectionist Threats and Foreign Direct Investments," NBER Working Paper No. 5475 (1996).

positively related to trade barriers and transport costs.[42] Finally, all else being equal, strict anti-dumping laws in the host county may encourage a firm to enter through FDI over exports. Interestingly, there is no clear evidence on an aggregate level that tariff and non-tariff barriers in the United States induce inward foreign direct investment.[43] This may suggest that incentives from the size of the U.S. market outweighed any disincentives from U.S. trade costs.

Exchange Rates

Intuitively, a relatively cheap dollar, all else equal, will attract foreign direct investment in the United States (FDIUS), since it lowers the costs to foreigners of acquiring assets. While many studies support this notion, the results are not unanimous. Using FDIUS data from 1979 to 1985, Ray found that the exchange rate effect held in general, and for the major investing areas (United Kingdom, Canada) but not for Japan.[44] Using a multi-country, quarterly data set over 1973 to 1988, Froot and Stein found that the exchange rate had a systematic effect on incoming U.S. foreign direct investment.[45] Blonigen cites several studies which both find and fail to find an association of dollar depreciation with FDIUS, and in examining Japanese acquisitions in the U.S. from 1975-1992, finds that these transactions respond positively to dollar depreciations.[46] Cushman, using both outbound and inbound U.S. direct investment flows with the U.K., France, Germany, Canada, and Japan over 1963-1978, finds that investment decreases when the host country's currency is expected to appreciate, a result in contrast with most other findings.[47]

Firm and Industry Characteristics

Dunning reviews the extensive literature of statistical studies attempting to identify characteristics of firms and industries most likely to engage in foreign direct investment. The most significant results are the following:

- Firms and industries with high levels of *technological intensity* are more likely to engage in FDI than other industries. The ratio of R&D to sales, the average wage per employee (used as a measure of skilled

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[42] Brainard, "An Empirical Assessment of the Proximity-Concentration Tradeoff between Multinational Sales and Trade."

[43] Ray, "The Determinants of Foreign Direct Investment in the United States, 1979-85."

[44] Ibid.

[45] Kenneth A. Froot and Jeremy C. Stein, "Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach," *QJE*, vol. 106, No. 4 (1991), pp. 1191-1217.

[46] Bruce A. Blonigen, "Firm-Specific Assets and the Link between Exchange Rates and Foreign Direct Investment," *AER*, vol. 87, No. 3 (June 1997), pp. 447-465.

[47] David O. Cushman, "Real Exchange Rate Risk, Expectations, and the Level of Direct Investment," *RES*, vol. 62, No. 2 (1985), pp. 297-308.

labor intensity), and the share of managers in total employment have all been shown to be correlated with the propensity of firms or industries to engage in FDI.

- *Advertising intensity*, usually measured as the ratio of advertising expenditures to sales, has been repeatedly found to be a significant variable encouraging FDI, particularly in consumer-goods industries. Advertising can create a firm-specific asset in the form of enhancing the reputation of the firm's products.

- Industries with a high degree of *economies of scale* at the plant level are less likely, other things being equal, to engage in FDI. When economies of scale are present, the incentives for a firm to concentrate its production in a single (home) location and export, rather than producing in multiple locations, are greater.

- *Large firms* are more likely to engage in FDI than small firms.

- *Oligopolistic rivalry* has been identified in several studies as a determinant of FDI; that is, when one firm in an industry begins investing in a particular foreign market, its competitors in the same industry are more likely to invest than otherwise.[48]

[48] John H. Dunning, Multinational Enterprises and the Global Economy (Workingham, England: Addison-Wesley, 1993).

Appendix C

Glossary of Terms

Affiliate : 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.

Assets : The sum of current assets (including cash items, current receivables, inventories, and other current assets) and noncurrent assets (including property, plant, and equipment; equity in other foreign affiliates; and other noncurrent assets).

Direct investment flows : The sum of net equity capital flows from parents to their affiliates, net inter-company debt flows from parents to their affiliates, and affiliate earnings that are reinvested in the affiliate. Also referred to as capital flow.

Direct investment stock : The sum of parents' equity holdings in their foreign affiliates, plus the net value of loans that parents have made to these affiliates. Also referred to as direct investment position.

Distributed earnings : Dividends on common or preferred stock held by parent firms, before deduction of foreign withholding taxes and whether paid out of current or past earnings. Dividends exclude stock and liquidating dividends.

Employee compensation : Total wages, salaries, and benefits paid by a firm to its employees.

Employment : Number of employees, both full-time and part-time, working for a parent or affiliate at the end of the fiscal year. If the employment of a firm is seasonally variable, then employment reflects the average number of employees working for that firm during the year.

Equity capital : The value of parents' holdings in their foreign affiliates, not including those holdings that are a product of reinvested earnings.

Equity capital flow : The annual change in the value of equity that parents hold in their foreign affiliates, not including net increases in equity that are a product of reinvested earnings. Equity capital flows are a component of direct investment flows.

Foreign direct investment (FDI) : Type or level of investment which implies a lasting interest in, and a degree of influence over a business establishment in another country. For the United States, foreign direct investment is defined as direct or indirect ownership or control by a single person of at least 10 percent of the voting securities of an enterprise in another country.

Gross product : Affiliates' (or parents') contributions to the gross domestic product (GDP) of the country in which they are based.

High-income economy : Economy in which the value of per capita GNP for 1998 was greater than or equal to US$9,361.

Home country : The country in which an affiliate's parent company is based. See host country.

Host country : The country in which an affiliate is based. See home country.

Income : Parents' share of the net income earned by their affiliates, plus net interest received by parents on interfirm loans in a given year.

Intercompany debt flows : The yearly increase (or decrease) in the amount owed to parent companies by the foreign affiliates (parents' account receivables), minus the amount owed to affiliates by their parent companies (parents' account payables).

Intrafirm trade : Cross-border transactions between two establishments that are part of the same multinational corporation.

Juridical person : Any legal entity constituted or otherwise organized under applicable law, whether for profit or otherwise, and whether privately or governmentally owned. Juridical persons include any corporation, trust, partnership, joint venture, sole proprietorship, or association. Branches and representative offices are not included.

Labor productivity : The average value of production per employee. Labor productivity is calculated as gross product divided by number of employees.

Low-income economy : Economy in which the value of per capita GNP for 1998 was less than or equal to US$760.

Majority-owned foreign affiliate (MOFA) : A foreign affiliate in which all U.S. parents, in combination, hold more than 50 percent of the voting securities of the enterprise.

Majority-owned U.S. affiliate : A U.S. affiliate in which all foreign parents, in combination, own more than 50 percent of the voting securities of the enterprise.

Middle-income economy : Economy in which the value of per capita GNP for 1998 fell between US$761 and US$9,360.

MNC-related trade : Cross-border transactions in which the exporter, the importer, or both is a parent or affiliate of a multinational corporation (MNC). This includes trade between two establishments that are part of the same MNC.

Multinational corporation (MNC) : A corporation which comprises business entities based in two or more countries, including a parent with only a single foreign affiliate.

Natural person : A person who is a national of a country under the law of that country (e.g. persons eligible to hold a passport of that country, or in the case of a country which does not have nationals (e.g. territories), a person who has the right of permanent residence under the law of that country.

Parent : A natural or juridical person who has a direct or indirect investment interest of 10 percent or more in a foreign business establishment.

Reinvested earnings : Parents' shares in the net income of their affiliates, after provision for income taxes and less distributed earnings.

Sales : Gross sales of goods and services, less allowances, discounts, and returns.

Ultimate beneficial owner (UBO) : That person, proceeding up a U.S. affiliate's ownership chain, beginning with and including the foreign parent, that is not more than 50-percent owned by another person.

Appendix D

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