

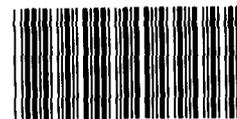
GAO

Report to the Chairman, Subcommittee
on Oversight and Investigations,
Committee on Energy and Commerce,
House of Representatives

May 1990

FOREIGN INVESTMENT

Concerns in the Banking, Petroleum, Chemicals, and Biotechnology Sectors



141682



United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

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May 30, 1990

The Honorable John D. Dingell, Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

This is one of a series of reports responding to your request that we examine the effects of foreign direct investment in the United States. This report discusses concerns related to foreign investment in four sectors of the U.S. economy and the availability and types of data needed to analyze them.

The first two reports in this series were Foreign Investment: Federal Data Collection on Foreign Investment in the United States (GAO/NSIAD-90-25BR, Oct. 3, 1989) and Foreign Investment: Analyzing National Security Concerns (GAO/NSIAD-90-94, Mar. 29, 1990). Other reports are in preparation.

As you requested, we did not obtain official agency comments on this report, but we did discuss report segments relating to government information systems with agency representatives.

Unless you publicly announce its contents earlier, no further distribution of this report will be made until 30 days from its issue date. At that time, we will provide copies to other interested parties.

This report was prepared under the direction of Allan I. Mendelowitz, Director, International Trade, Energy, and Finance Issues, who may be reached on (202) 275-4812. Other major contributors to this report are listed in appendix I.

Sincerely yours,

Frank C. Conahan
Assistant Comptroller General

Executive Summary

Purpose

Increased foreign investment in the United States has attracted public attention and raised concerns about the consequences of foreign ownership of U.S. assets.

The Chairman, Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, asked GAO to examine the effects of increased foreign direct investment in the United States and the adequacy of government investment statistics. This report is one of a series responding to that request.

In this report GAO examines foreign investment issues in four important industry sectors to (1) define public policy concerns, (2) identify the data available to analyze these concerns, and (3) evaluate the concerns. The sectors are banking, where possible control over bank lending is of concern; petroleum, where questions about increased dependence on foreign oil have arisen; chemicals, where the foreign-owned share of U.S. assets is among the highest of all industry sectors; and biotechnology, an emerging sector of potentially strategic commercial importance.

Background

Foreign direct investment has increased markedly during the 1980s, as have all forms of capital flows into the United States that help finance the U.S. budget and trade deficits. From 1980 to 1989, cumulative foreign direct investment grew from \$83 billion to \$390 billion, while cumulative capital inflows grew from \$500 billion to \$2 trillion. All values are expressed in then-year dollars.

Federal government agencies collect various data sets on foreign direct investment in the United States. These data sets have different purposes and limitations and can be difficult to compare. In the four industry sectors GAO studied, these data sets, supplemented by private sector data sources, did serve to identify overall trends and possible issues.

Results in Brief

Difficulties in assessing concerns about increased foreign direct investment stem principally from differing viewpoints in interpreting the consequences of this investment, rather than from the inadequacies that can be found in government statistics. The predominant point of view is that these investments represent capital flows to industries in the United States that strengthen the U.S. economic base and link foreign investors' economic interests with the continued economic strength of the United States.

Those concerned about foreign investment, however, raise questions about long-term consequences whose answers may differ depending on how foreign investors' future behavior and intentions are viewed. In the banking sector, concerns relate to the possibility that foreign-owned banks at some future point might be in a position to affect the growth and direction of the U.S. economy. In the petroleum sector, concerns relate to the future behavior of oil-producing countries in the event of world supply disruptions or political crises. In the biotechnology industry, concerns relate to questions about whether the long-term commercial competitiveness of U.S. industries is at risk from the types of technology transfers that may be occurring. In the chemicals sector, no major concerns were raised.

Policymakers seeking to increase public understanding of foreign investment need to highlight in public debate the key question—how to ensure that U.S. industries and the nation overall will benefit over the long term from the global interdependence that such investment represents. Some of the uncertainties about foreign investment could be addressed by additional data, such as analyses of bank lending patterns and tracking of commercially important technology transfers. This kind of information goes beyond foreign investment data, however, and would involve close government attention to technological and competitive developments in important industries.

GAO's Analysis

Banking

Concerns about foreign investment in the banking sector focus on the basic conceptual question of whether there is a point at which foreign-controlled banks might be able to make basic lending decisions affecting the growth and direction of U.S. industry. In this sector, foreign investment trends and specific transactions can be identified, showing increased Japanese activity. At the end of 1989, foreign investors owned 22.6 percent of U.S.-based bank assets, of which 12.1 percent was Japanese. Assessments of bank lending patterns and competitive behavior, however, would require data different from foreign investment data. Because Federal Reserve Board data are comprehensive and a government supervisory and regulatory system is in place for the banking sector, such assessments of foreign bank behavior can be made.

Petroleum

Concerns about investments by oil-producing countries stem from U.S. dependence on imported oil and focus on whether such investments (1) tend to discourage domestic oil exploration and production and (2) increase U.S. vulnerability to political changes in these countries. The Departments of Commerce and Energy have detailed data showing the extent and nature of foreign investment in the U.S. petroleum sector. These data show that cumulative foreign investment in the U.S. petroleum sector tripled between 1980 and 1988, from about \$11 billion to about \$34 billion, but declined as a share of total foreign direct investment in the United States. Recent foreign investments have been in refining facilities. Foreign interests control about 27 percent of U.S. refining capacity, of which 6 percent is controlled by the Organization of Petroleum Exporting Countries.

Detailed investment data, however, cannot resolve the key public policy concerns, which relate to the future behavior of oil-producing countries. The administration view is that foreign investments in U.S. oil refining and marketing operations should encourage increased stability by linking the economic interests of oil-producing countries with those of the United States.

Chemicals

The relatively high level of foreign investment in the chemicals sector (at about 30 percent of U.S. chemicals assets) has not prompted particular concern, because it is recognized as reflecting the economic efficiencies of international operations in this industry. Industry analysts consider Department of Commerce data adequate to show investment levels and trends.

Biotechnology

The central concern in the biotechnology sector is that foreign firms may reap the commercial benefits of technologies developed in the United States as a result of these technologies being transferred overseas. Although formal government data cannot be disaggregated to show investments in biotechnology, industry analysts using private sector data have identified trends. These trends indicate increased foreign participation in the U.S. biotechnology industry, particularly by Japanese firms. Further data collection, particularly regarding the direction and types of technology transfer, would clarify the picture. But the basic public policy question is whether or not the U.S. government should try to ensure that commercially strategic technologies originating in the United States are developed by U.S. firms into commercial products.

Recommendations

This report presents GAO's analysis of foreign investment concerns and data. It contains no recommendations.

Agency Comments

As requested, GAO did not obtain agency comments on this report. However, report segments relating to government information systems reflect discussions with appropriate agency officials.

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Abbreviations

ARAMCO	Arabian-American Oil Company
BEA	Bureau of Economic Analysis, Commerce Department
C&I	Commercial and Industrial
CFIUS	Committee on Foreign Investment in the United States
FDI	Foreign Direct Investment
GAO	General Accounting Office
OPEC	Organization of Petroleum Exporting Countries
R&D	Research and Development

Introduction

Recent increases in foreign investment in the United States have attracted public attention and raised concerns about the consequences of foreign ownership of U.S. assets. This foreign investment may take several forms, such as "portfolio" investments in private sector stocks and bonds, foreign holdings of U.S. government debt, and foreign direct investment (where the foreign investor's share of a U.S. firm is 10 percent or more and is thus considered capable of influencing company management).

Overall foreign investment inflows are caused by macroeconomic policies: they are a natural counterpart to U.S. budget and trade deficits. As long as U.S. domestic savings fail to match the federal budget deficit and private sector investment needs, foreign financing will be essential to continued U.S. economic growth and stability.

Causes of growth in the foreign direct investment component of overall foreign investment, however, can be quite different. Foreign investor choices about the types of individual investments to hold depend more on microeconomic factors, such as expectations about stock prices, currency exchange rates, transportation costs for finished products, or possible protectionist actions.

The United States is also an active investor overseas and has long supported policies promoting the free flow of investment capital and the removal of foreign restrictions that distort investment flows. The U.S. government and business community recognize the increasingly integrated nature of the world economy, the efficiencies of global relationships, and the benefits foreign investment can bring, particularly the increased capital available for domestic investment.

Nevertheless, there appears to be some public discomfort about the amount and nature of foreign investment in the U.S. economy, particularly regarding foreign direct investment. There is a sense that U.S. firms have been particularly attractive to foreign investors, due to depreciation of the dollar after 1985 and depressed stock prices in late 1987 and 1988. There is concern that reduced U.S. competitiveness in some high technology market segments may be further diminished by foreign purchases of key U.S. firms and their research capabilities. And there is awareness that some foreign competitor nations have restricted U.S. firms from investing in sectors of their own economies. In essence, there is uncertainty about whether foreign-owned firms behave differently from U.S.-owned firms and about what the economic, political, and

national security consequences may be of increased foreign ownership of U.S. assets.

In addition, there are specific concerns about the adequacy of U.S. government statistics on foreign direct investment in the United States and the capability of the government to analyze the data.

Because much of the public debate concerns foreign control of U.S. assets, this report focuses on foreign direct investment (FDI) in the United States. Foreign investments representing equity shares of less than 10 percent are not considered controlling interests and are classified as portfolio investments.

In chapter 2 we provide an overview of the extent and nature of FDI in the United States and of the types of data available to analyze concerns about FDI. In following chapters we discuss concerns about FDI in specific industry sectors and the adequacy of the data available to analyze them.

Objectives, Scope, and Methodology

This report is one of a series of reports responding to a request from the Chairman, Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, that we examine the effects of increased foreign direct investment in the United States and the adequacy of government statistics on foreign investment. Our objectives were to examine investment issues in four important industry sectors for the purpose of (1) defining public policy concerns, (2) identifying the data available to analyze these concerns, and (3) evaluating the concerns. We did not seek to determine the level of public concern or to assess concerns about the political effects of FDI.

For this report, we looked at four commercially important industry sectors to identify possible investment issues: banking, where possible control over bank lending is of concern; petroleum, where questions about increased dependence on foreign oil have arisen; chemicals, where the foreign-owned share of U.S. assets is among the highest of all industry sectors; and biotechnology, an emerging sector of potentially strategic commercial importance. Foreign investments in national security-related sectors are discussed in a separate report.¹

To accomplish our objectives, we reviewed a broad range of literature and spoke with academic and industry experts and with federal and

¹Foreign Investment: Analyzing National Security Concerns (GAO/NSIAD-90-94, Mar. 29, 1990).

state officials responsible for regulating, supervising, or following the sectors. To learn what is known at the state level about the extent and effects of foreign investment, we interviewed a variety of state government, academic, business, and trade association representatives in 12 states that have significant or growing levels of FDI—California, Oregon, Washington, Alaska, Hawaii, Texas, Louisiana, Georgia, Florida, North Carolina, New York, and New Jersey.

As requested, we did not obtain agency comments on this report. However, segments of the report relating to government information systems reflect discussions with appropriate agency officials.

We conducted our review from July 1988 through February 1990 in accordance with generally accepted government auditing standards.

Foreign Investment Data Profile

Cumulative foreign direct investment in the United States is measured in two different ways by the Commerce Department's Bureau of Economic Analysis (BEA), which has primary responsibility for collecting data on FDI. The first method, measuring net foreign capital flows into the United States, shows the total accumulation of FDI over time to be \$390 billion at the end of 1989. The second method, measuring the total value of assets in which a foreign investor has an equity share of at least 10 percent,¹ shows that foreign investors had control (management influence) over \$926 billion worth of assets of U.S. affiliates at the end of 1987 (the most recent year for which data are available).

Another BEA data set measures annual transaction values for new acquisitions of existing U.S. companies and for start-up investments.

These three sets of data are compiled from reports required from individual foreign investors.² Commerce publishes only aggregate statistics based on these required reports. The individual firm data are considered proprietary and are not released either to the public or to other government agencies.

Data Purposes and Limitations

The following foreign investment data sets each have different purposes and limitations:³

1. Foreign Direct Investment Position and Balance of Payments Flows is a data series meant to track capital flows into and out of the United States. These data show the foreign direct investment position in the United States, which is the accumulation over time, or stock, of FDI.

These balance of payments data understate the current value of assets acquired by foreign investors because (1) they include only capital coming from other countries and not the value of the U.S.-financed portion of the investment (such as money borrowed from a U.S. bank), and (2) they are based on book value, that is, the value of the investment when it was initially made. This latter problem affects the valuation of U.S. direct investments abroad to a greater degree than FDI here, because

¹BEA data indicate that foreign firms, in fact, hold about 80 percent of the equity.

²International Investment and Trade in Services Survey Act of 1976 (P.L. 94-472, 22 U.S.C. 3101 to 3108, as amended).

³For a summary of federal FDI data collection activities, see Foreign Investment: Federal Data Collection on Foreign Investment in the United States (GAO/NSIAD-90-25BR, Oct. 3, 1989).

these are, on average, much older than FDI here and were made in periods of much lower prices.

This data set also may not accurately portray the ultimate foreign owner of the investment. For example, investments made through London holding companies would show up as investments from the United Kingdom, even though they may originate in other countries.

2. Operations of U.S. Affiliates of Foreign Companies is a detailed data set meant to measure foreign control in the U.S. economy. This shows the value of all U.S. assets, except banking, in which a foreign investor has an equity share of at least 10 percent and thus is considered capable of influencing company management.

This data set is the broadest measure of foreign control conferred by FDI here and raises the question of what portion is held by relatively small foreign equity interests in U.S. firms. BEA data showing the affiliates' sources of funds, however, indicate that foreign firms hold about 80 percent of the equity in such firms. Therefore, using the 10 percent equity interest rule to define FDI does not particularly distort the investment data, and changing the percentage from 10 to 50 percent would not make much difference in the overall aggregate figure for total assets controlled by foreign investors.

Unlike the balance of payments data, these data do include the U.S.-financed portion of the investment and attempt to report the country of the ultimate beneficial owner. However, these data also are affected by the book value problem. Other measures of foreign control conferred by FDI available in this data set include the affiliates' sales, employment, and value added.

This data set is very dated by the time it is made available. The preliminary 1987 data were published in July 1989. In addition, there are often significant adjustments between preliminary and revised data due to late reporting and other corrections.

3. U.S. Business Enterprises Acquired or Established by Foreign Direct Investors is a data set showing the outlays made each year by foreign investors to establish or acquire new U.S. affiliates. This data series covers transactions only for the year in which the outlays are made and includes all financing, including local borrowing in the United States.

The Commerce Department's International Trade Administration collects and publishes FDI data showing specific companies acquired by foreign investors. However, the data are not considered complete because they include only those transactions that have been publicly announced and show only yearly additions, not total position or disinvestment. These data are useful for tracking general sectoral trends or for obtaining information on publicly announced investments.

The Department of Agriculture also collects data and reports annually on foreign purchases of agricultural land, and this type of data is publicly available.⁴ In addition, the Federal Reserve Board maintains data on foreign ownership of U.S. banks, which is also publicly available, and the Department of Energy collects data from public sources and publishes information on FDI in the energy sector. Both these data sources are discussed in later chapters of this report.

The Securities and Exchange Commission, the Federal Trade Commission, and the Department of Justice also have information on foreign acquisitions of U.S. firms that is gathered incidentally as part of these agencies' routine activities but that is not organized to allow systematic analysis. The Bureau of the Census collects detailed data on individual business "establishments" but does not highlight foreign ownership. The Department of Transportation maintains data on foreign investment in U.S. airlines.

The interagency Committee on Foreign Investment in the United States (CFIUS) serves as a central point for gathering and analyzing information on national security-related foreign investments in U.S. firms, before the transactions are completed. Under the 1988 Exon-Florio Amendment to the Defense Production Act, the President is empowered to investigate and, if appropriate, block specific investments in national security-related firms.⁵

Growth of Foreign Investment

Cumulative FDI inflows grew from \$83 billion in 1980 to \$390 billion in 1989.⁶ But they have remained a relatively stable share (about 16 to 18 percent) of cumulative foreign investment in the United States, which

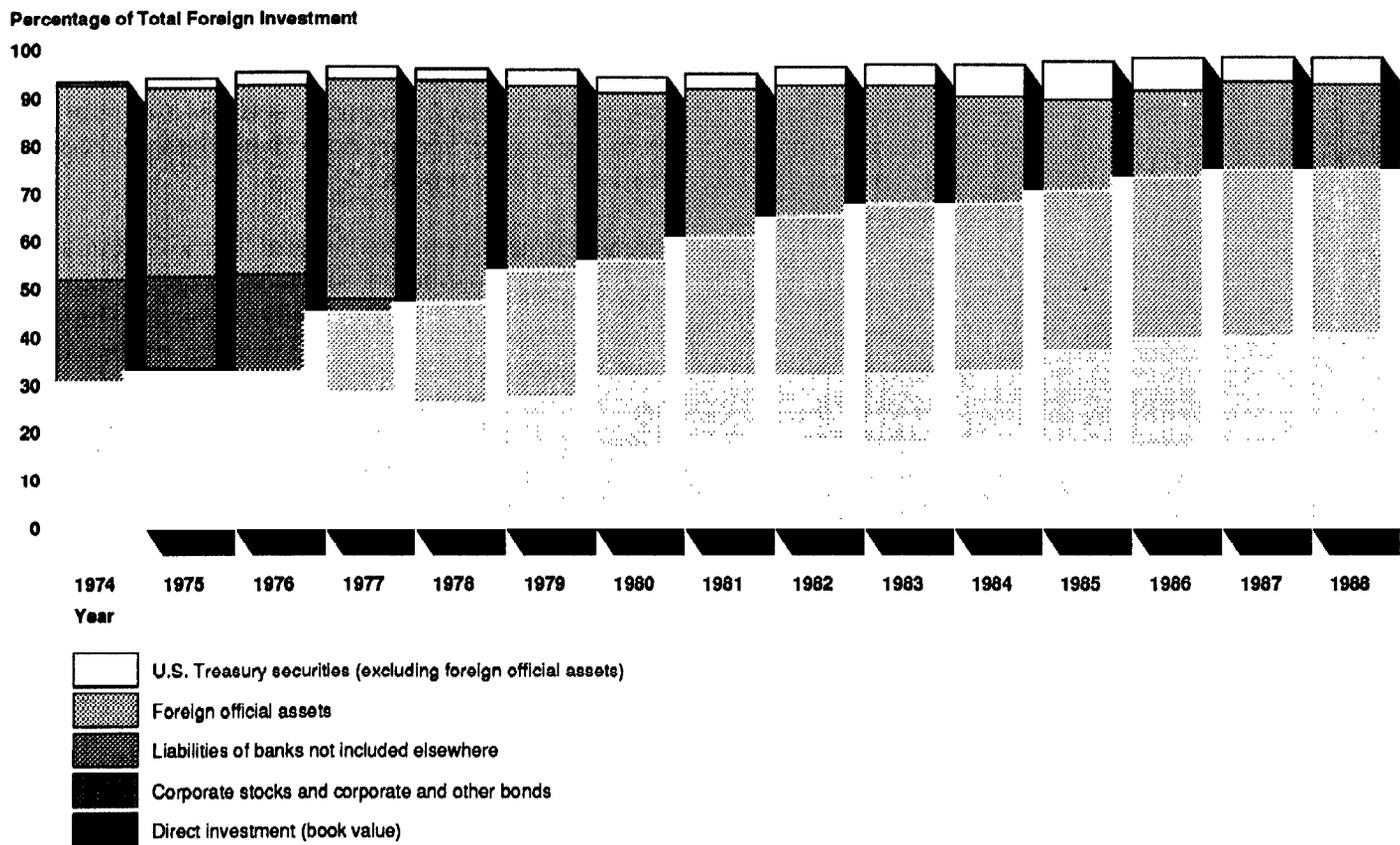
⁴These data are discussed in further detail in *Foreign Investment: Trends in Foreign Ownership of U.S. Farmland and Commercial Real Estate* (GAO/NSIAD-89-168FS, July 10, 1989).

⁵This subject is discussed in *Foreign Investment: Analyzing National Security Concerns* (GAO/NSIAD-90-94, Mar. 29, 1990).

⁶Based on preliminary data for 1989.

grew from a total of about \$500 billion to \$1,983 billion over the same period (see fig. 2.1). The other types of foreign investment inflows include liabilities of banks (borrowing abroad by U.S. banks and foreign deposits in the United States), portfolio investments, and foreign official holdings of U.S. government debt.

Figure 2.1: Composition of Cumulative Foreign Investment in the United States



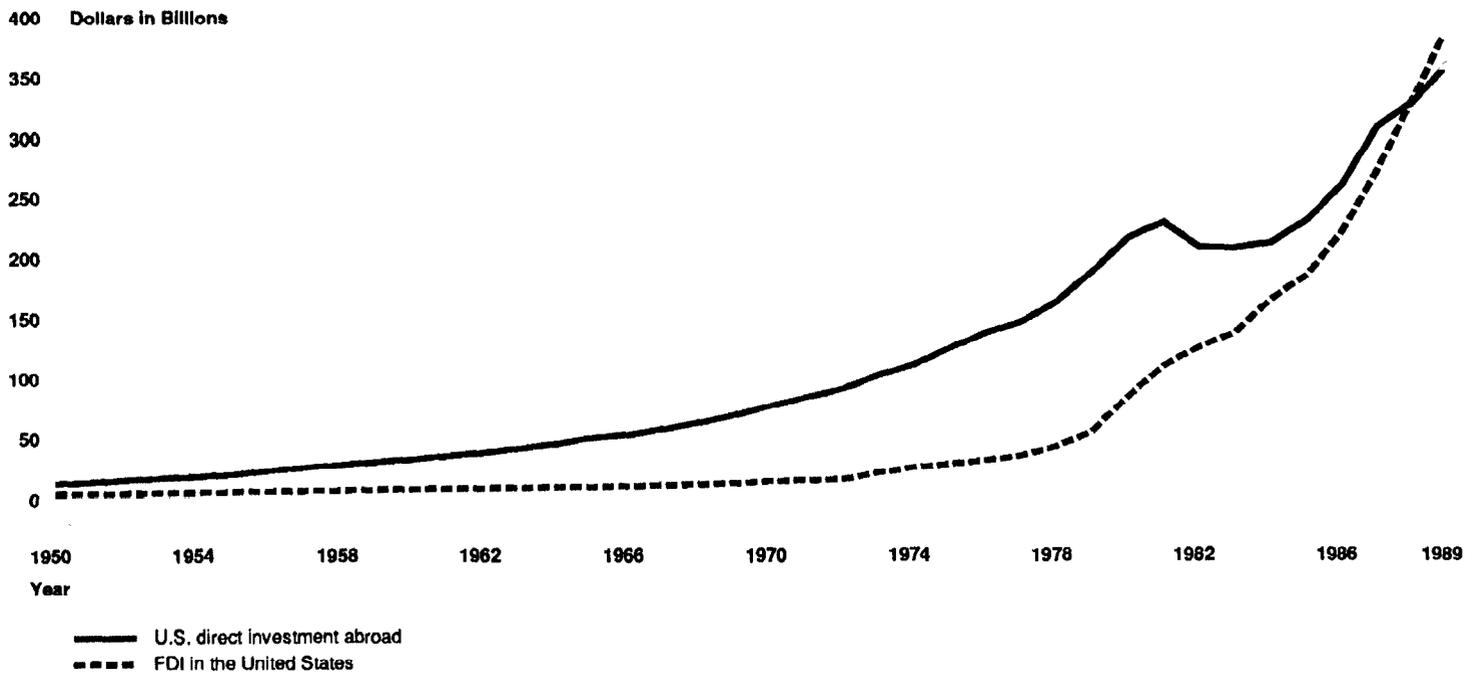
Source: Commerce Department.

The United States has long been a major investor overseas, and Commerce statistics show that until 1987 U.S. direct investments abroad exceeded FDI in the United States.⁷ (See fig. 2.2.) In 1984, the United

⁷If book values of investments were revised to reflect current values, however, it is possible that the value of U.S. direct investments overseas might still exceed the value of FDI here, because the older U.S. investments overseas would be revised upward substantially.

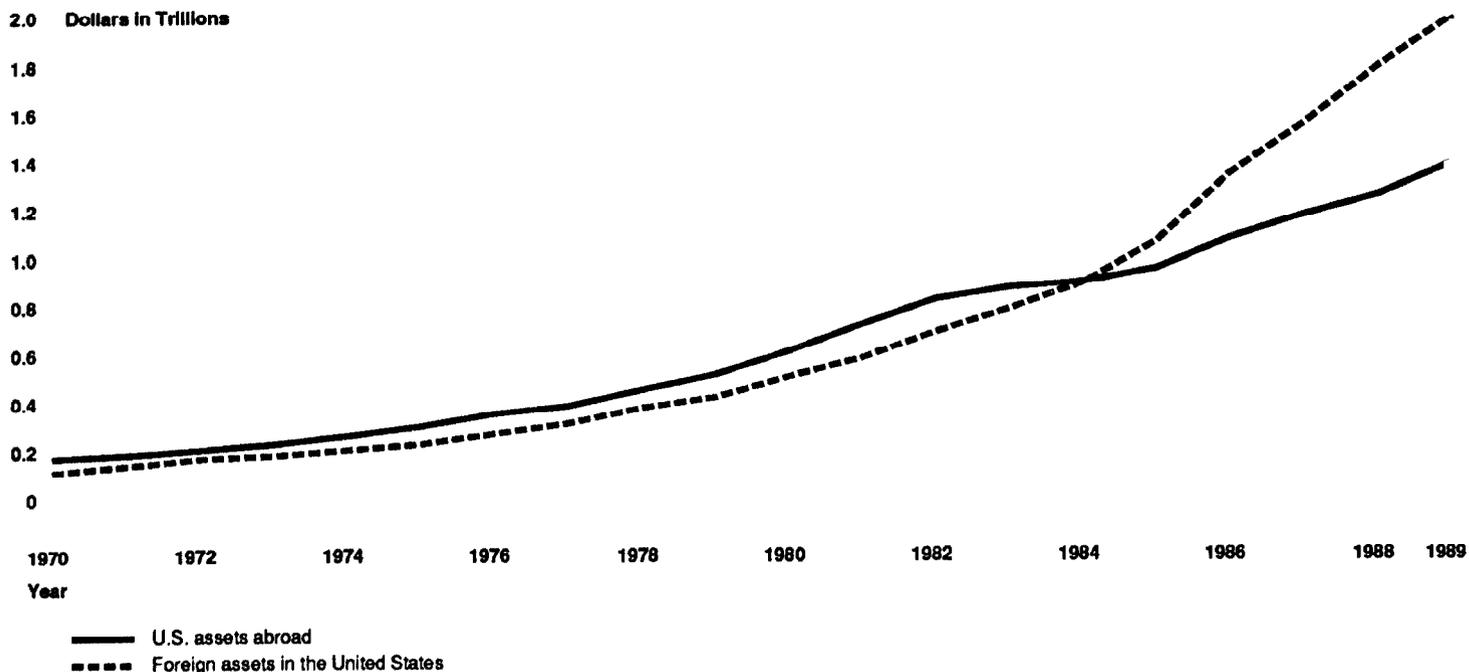
States became what is commonly referred to as a “net debtor” (that is, began to have a negative net international investment position, as shown in fig. 2.3). This was not due specifically to growth in FDI here. Rather, it reflected the fact that overall U.S. investment overseas slowed, while foreign investment in the United States accelerated its long-term upward trend.

Figure 2.2: Foreign Direct Investment Position of the United States (Book Value)



Source: Commerce Department.

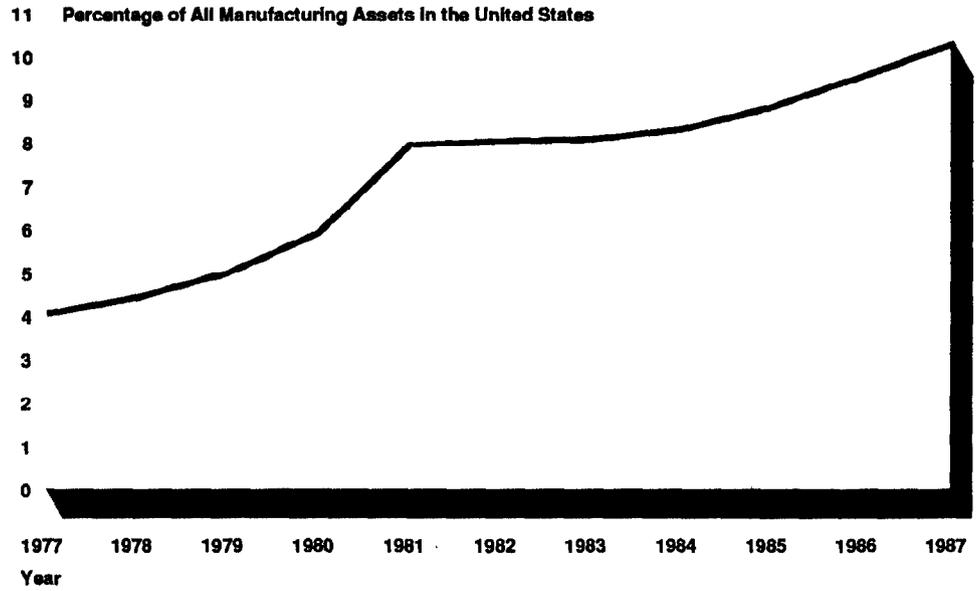
Figure 2.3: International Investment Position of the United States



Source: Commerce Department.

FDI in the United States has been growing faster than the U.S. economy as a whole has grown, although FDI remains relatively low, measured in terms of foreign affiliates' shares both of total assets of U.S. manufacturing firms and of total U.S. employment. As shown in figures 2.4 and 2.5, the foreign-controlled shares of U.S. manufacturing assets and U.S. employment increased during the 1977-87 period from 4 percent to 10 percent for manufacturing and from 1.2 percent to 2.8 percent for total employment. The most rapid increases occurred between 1977 and 1981, while increases since 1981 have been notably slower.

Figure 2.4: Total Assets of All Foreign Manufacturing Affiliates in the United States



Source: Commerce Department.

Figure 2.5: Employment of All Foreign Affiliates in the United States



Source: Commerce Department; Bureau of Labor Statistics.

The foreign-controlled subsidiaries' share in the U.S. economy has increased over the past 10 years, but this share remains smaller than the foreign-controlled subsidiaries' share in several other major industrial countries. By the three measures of foreign shares noted in table 2.1 for 1986, the role of foreign-controlled subsidiaries in the U.S. economy is smaller than in the economies of France, the United Kingdom, and Germany. Only Japan has a lower share of its economy controlled by foreign subsidiaries than does the United States.

Table 2.1: Shares of Foreign-Owned Firms in the Economies of Various Countries in 1986

Figures in percent

	Share in assets	Share in manufacturing employment	Share in sales
France	NA	21	27
United Kingdom	14	14	20
Germany	17	13	18
United States	9	7	10
Japan	1	1	1

Source: D. Julius and S. Thomsen, "Foreign-Owned Firms, Trade, and Economic Integration," in Tokyo Club Papers, #2, Royal Institute of Economic Affairs, 1986, as quoted in Edward M. Graham and Paul R. Krugman, *Foreign Direct Investment in the United States*, Institute for International Economics, 1989.

Source Countries for FDI

Six countries account for over 80 percent of all FDI in this country, based on 1989 balance-of-payments data (see table 2.2). Three of these countries—the United Kingdom, Japan, and the Netherlands—account for 63 percent of all FDI here. Their FDI has grown the most from 1983 to 1989, with Japan moving into second place after the United Kingdom.

Table 2.2: Changes in FDI Position, 1983 and 1989 (Based on Balance of Payments Data Series [Book Value of Foreign Equity])

Dollars in millions			
Country	Position		Increase
	1983	1989	
United Kingdom	\$32,152	\$122,834	\$90,682
Japan	11,336	66,116	54,780
The Netherlands	29,182	55,656	26,474
Canada	11,434	29,695	18,261
West Germany	10,845	26,916	16,071
Switzerland	7,464	17,550	10,086
Subtotal	102,413	318,767	216,354
Latin America and Western Hemisphere	15,035	20,511	5,476
Middle East countries	4,446	6,475	2,029
All other countries	15,167	44,359	29,192
Total	\$137,061	\$390,112	\$253,051

Source: Commerce Department.

Under the data series, Operations of U.S. Affiliates of Foreign Companies (Affiliates' Assets data series), which shows total U.S. assets (except banking) controlled by foreign investors, Japan in 1987 became the country with the largest value of affiliates in the United States. It achieved this position as a result of Japanese investors' acquisitions of minority interests in two U.S. finance companies with very large assets. (See table 2.3.) In 1987, assets of Japanese affiliates grew sharply—by \$98 billion—reflecting an \$82 billion increase in nonbank finance investments, which included these finance companies.

If investments in the finance sector were excluded, Japan would be third after Canada and the United Kingdom in affiliates' assets. Of Japanese affiliates' total assets of \$195.8 billion, \$118.9 billion is in the nonbank finance sector (such as investment and securities firms), a much higher amount than the next-largest investing country, the United Kingdom, which has \$27 billion worth of assets in this sector.

Investments from Latin American and Middle East countries remained relatively small under both data sets.

Table 2.3: Changes in Assets of Affiliates of Foreign Companies, 1983 and 1987

Dollars in millions

Country	Total assets		Increase (decrease)
	1983	1987	
Japan	\$38,356	\$195,773	\$157,417
United Kingdom	91,139	156,223	65,084
Canada	93,938	140,822	46,884
Switzerland	44,362	73,766	29,404
The Netherlands	50,777	69,958	19,181
West Germany	40,249	58,540	18,291
Subtotal	358,821	695,082	336,261
Latin American countries	14,646	32,180	17,534
Middle East countries	31,948	18,024	(13,924)
All other countries	122,193	180,756	58,563
Total	\$527,608	\$926,042	\$398,434

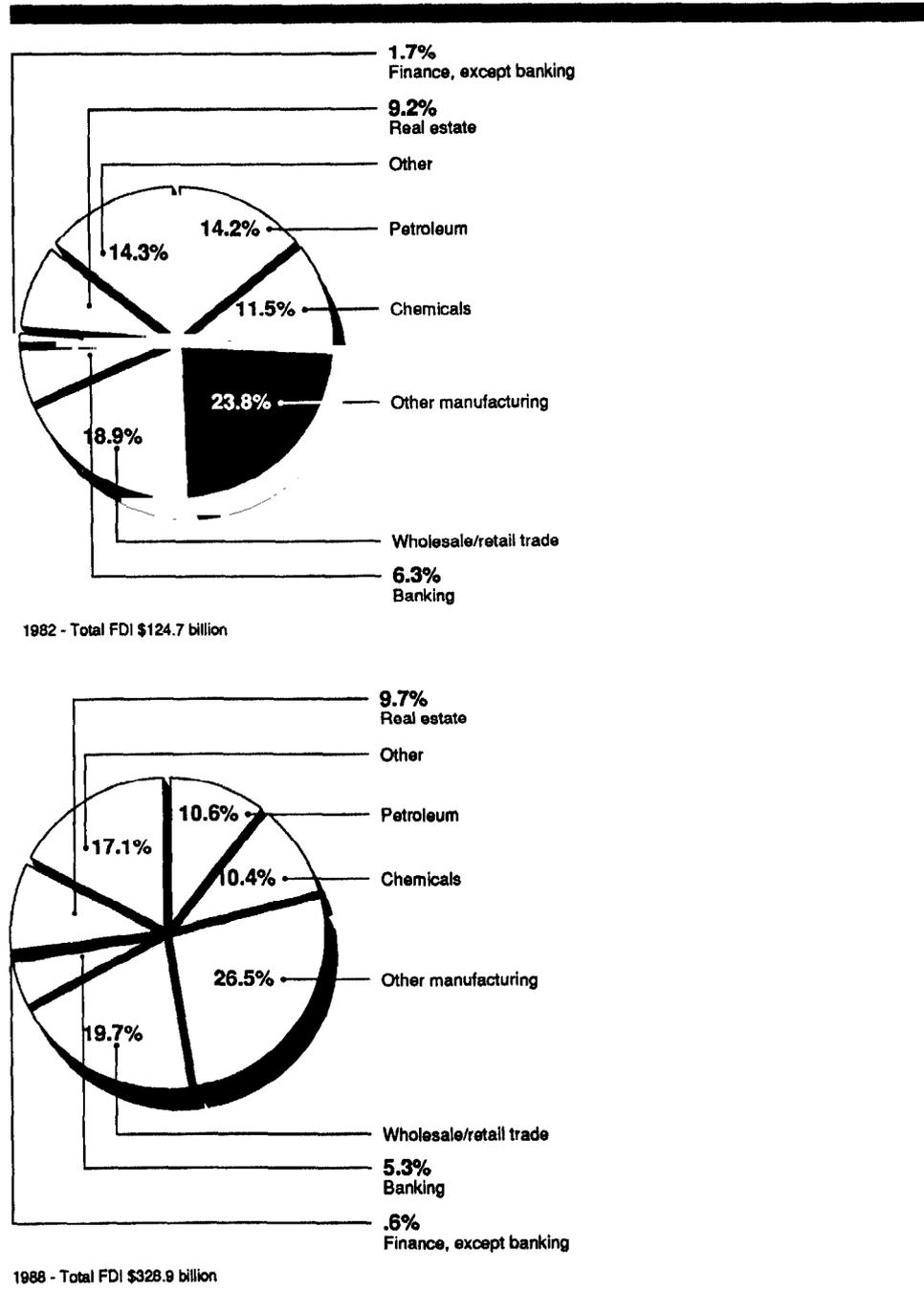
Source: Commerce Department.

Foreign acquisitions of existing U.S. firms accounted for 92 percent of the value of new investment in 1988, compared to 60 percent in 1983. Of the six major investing countries, only Japan invested more by value in start-up ("greenfield") establishments than in acquisitions over the 1983-88 period.

Investment Sectors

The distribution of FDI by industry sector, when measured by the balance of payments data, has remained fairly similar over the 1982-88 period, during which FDI more than doubled in value. (See fig. 2.6.) For example, FDI in the real estate sector accounted for 9.2 percent of all FDI in 1982 and 9.7 percent in 1988, and FDI in wholesale and retail trade stayed at about 19 percent of total FDI. Investments in the chemicals sector dropped only slightly, from 11.5 percent of all FDI in 1982 to 10.4 percent in 1988. Those in petroleum, however, dropped noticeably, from 14.2 percent to 10.6 percent of the total. The largest increases, of about 3 percent each, were in the "other manufacturing" and "other" (including insurance and mining) categories.

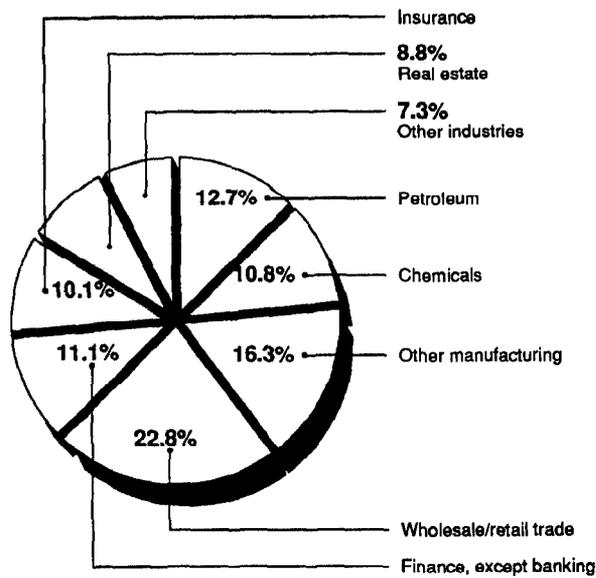
Figure 2.6: FDI in U.S. Industries, Based on Balance of Payments Statistics, 1982 and 1988



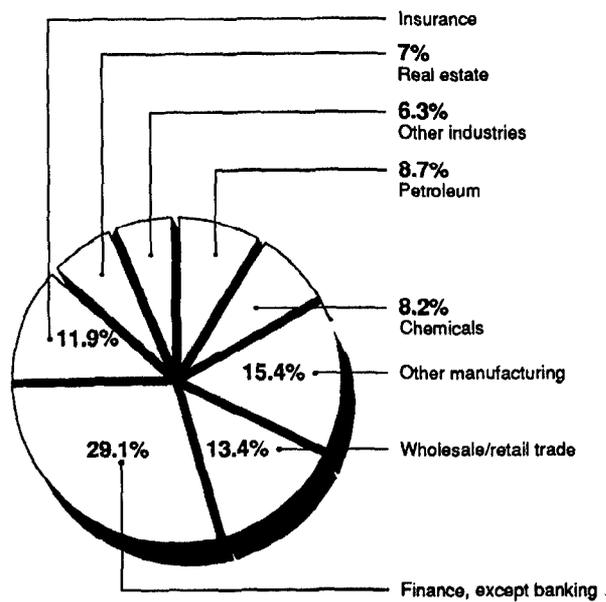
Note: Other includes mining and insurance.
Source: Commerce Department.

When measured using the Affiliates' Assets data series, however, the share distribution by sector shows a large increase in the nonbank finance sector (from 11.1 percent to 29.1 percent share of the total). This increase was offset by a fairly large decrease in the wholesale/retail trade sector and smaller decreases in other sectors. (See fig. 2.7.) A few foreign acquisitions of minority interests in U.S. securities brokerage or investment firms, which can have very large assets relative to equity, have affected the sectoral distribution in this data set.

Figure 2.7: FDI in U.S. Industries, Based on Affiliates' Assets Statistics, 1982 and 1987



1982 - Total FDI \$476 billion



1987 - Total FDI \$926 billion

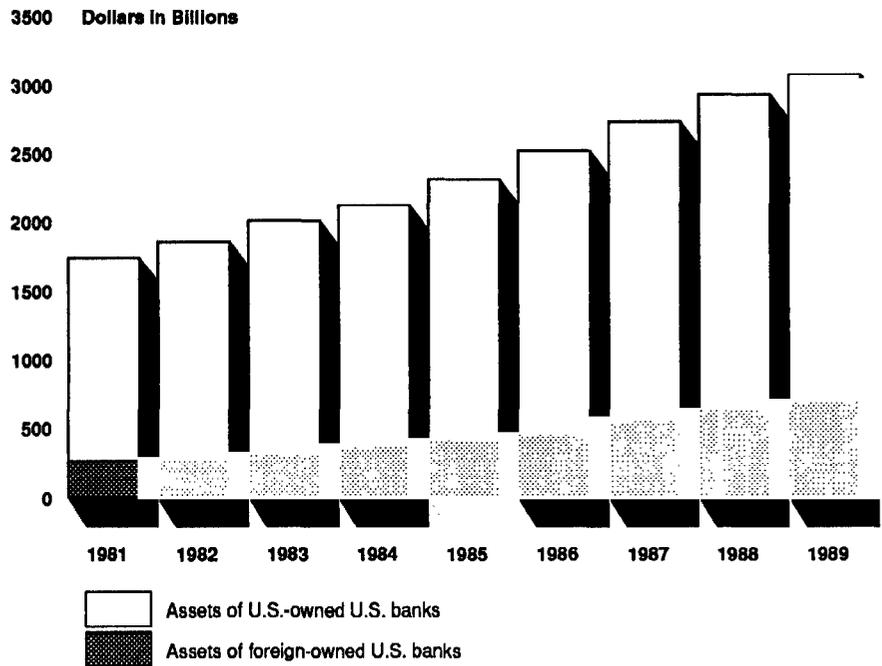
Note: Other includes services.

Source: Commerce Department.

Banking: Large Foreign Presence but Little Concern

The growth of international trade, capital flows, and multinational corporations has been accompanied by the increasingly international scope of most industrial countries' major banks. During the past decade, foreign banking in the United States, when measured in total assets, has more than doubled. (See fig. 3.1.) Analysts following the banking industry regard this increase as a result primarily of foreign banks' efforts to remain competitive and to take advantage of the financial opportunities created by U.S. economic growth.

Figure 3.1: Growth in Assets at U.S. Banks



Source: *American Banker*, March 6, 1989, and February 27, 1990.

As foreign financial institutions continue to increase their share of U.S. banking assets, the basic question has arisen regarding the threshold at which foreign-controlled banks could make basic lending decisions affecting the growth and development of U.S. industry. Other publicly raised concerns relate to the financial soundness of the foreign institutions; the lending patterns of foreign banks and their impact on the local community; the regulatory requirements for foreign banks; and what, if any, competitive advantages foreign banks may have over domestic banks.

We discussed these issues with federal and state bank supervision officials and with industry experts and found that most had virtually no special concerns about the growth in foreign banking here, foreign banks' lending patterns, or their financial soundness. Official government data on foreign banking activities in the United States, as collected by the Federal Reserve Board and other government agencies, are comprehensive and publicly available. In addition, there is government supervision and regulation of both domestic and foreign banking activities.

Nature of Foreign Banking Activity

Of the several forms of foreign-owned banking entities operating in the United States, we focused on branches and bank subsidiaries because they are the most active in competing for the wholesale market—accepting corporate demand and time deposits and making commercial loans—or the retail market—accepting individual savings and demand deposits and making consumer, mortgage, and small business loans.¹

Branches

Foreign branches are federal- or state-chartered offices located in the United States that may engage in a full range of banking activities. They are easier to establish than bank subsidiaries, in part because they require less capital and no U.S. directors or stockholders. Furthermore, a branch can make larger loans than a subsidiary, because its lending limits are based on the capital of the foreign parent.

Subsidiary Banks

Foreign subsidiaries are separately capitalized and have their own legal identities. While their financial strength and reputations are closely tied to those of their parents, they technically could survive independently. Foreign investors that choose subsidiaries can either establish a new bank (such as the Bank of Tokyo Trust Co. in New York) or buy an existing one (such as the Marine Midland Bank, N.A., purchased by Hong Kong and Shanghai Bank). Foreign subsidiaries may engage in the full range of banking activities. Although most focus on the wholesale market, some also target the retail market. Applications for subsidiaries require substantial disclosure of the financial and managerial capacity of the applicant and approval from U.S. bank regulators or relevant state bank regulatory authorities.

¹Other entities include representative offices, agencies, and Edge Act corporations. They perform such banking activities as making loans, issuing letters of credit, and making payments and collections for the parent bank. Edge Act corporations are special-purpose corporations authorized to engage in specifically defined international banking activities.

Regulatory Requirements

Information on the extent of foreign banking in the United States is readily available because the industry is regulated. Due to the dual banking system in the United States, it is possible for a domestic bank to operate with either federal or state authority. Since passage of the International Banking Act of 1978,² it has been possible for a foreign bank to seek either a federal or state license for its branch or agency operations.

State banking departments have primary supervisory authority for foreign branch or agency operations that are state licensed and for subsidiary banks that are state chartered.

At the federal level, the principal regulatory responsibilities for commercial banks are divided among three major agencies: the Federal Reserve Board, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation. The Comptroller of the Currency charters and supervises national banks and licensed branches and agencies of foreign banks. The Federal Reserve Board must approve an application to form an Edge Act corporation, and the Federal Deposit Insurance Corporation approves applications for federal deposit insurance and supervises insured branches.

These agencies report that they conduct a thorough review of foreign bank applications and that applications can be denied for a variety of reasons relating, for example, to capital adequacy, prior records of unsound financial or managerial operations, and inadequate parent country supervision.

Once a foreign bank has received permission to engage in a form of banking in the United States, the bank becomes subject to regulatory and reporting requirements and examinations. The scope of such examinations includes reviews of the adequacy of internal accounting control systems, the quality of bank assets, the adequacy of bank capital, and the effectiveness of management. If the bank supervisory agencies find any violations of banking laws, regulations, or sound practices, these violations are noted in the examination reports and require immediate management action.

²The International Banking Act, with certain minor limitations, applies to branches and agencies of foreign banks. It has put foreign and domestic banks on a more equal basis. With the passage of this act, foreign banks have the option of creating federal or state branches and agencies.

Data Sources

The U.S. government has comprehensive knowledge about the extent of foreign ownership in the banking sector and the nature of foreign-owned bank activities, as a result of extensive reporting requirements.³

In addition to the federal data available to policymakers and industry analysts, private sources also compile information on foreign banking in the United States. By using these data sources, industry analysts are able to determine the largest investors and the extent of foreign banking in a particular state. For example, the available data show that, as of June 1988, in the smaller banking centers of Georgia and Hawaii, foreign-owned bank assets accounted for less than 10 percent of total bank assets in these states.

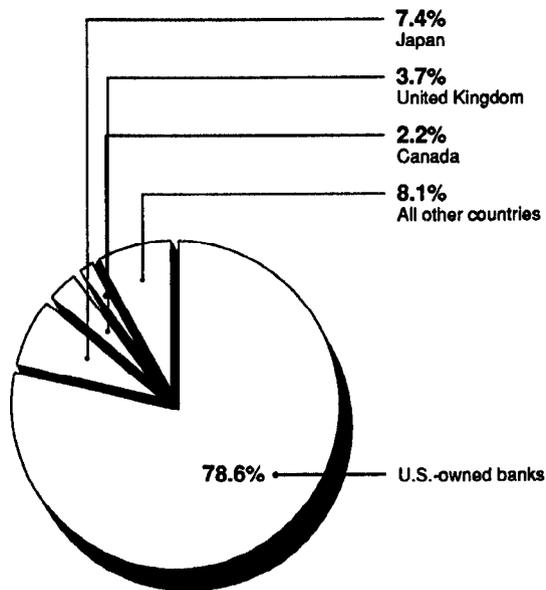
Growth in Foreign Banking Activity

Market Share

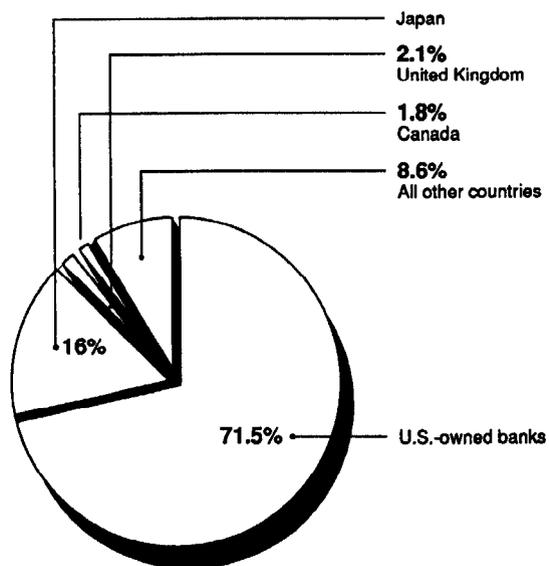
The extent of foreign banking in the United States may be measured in several ways. We used two methods: (1) analyzing commercial and industrial (C&I) loans, and (2) analyzing U.S. banking assets controlled by foreign banks. Figure 3.2 illustrates that C&I loans made by foreign-owned banks in the United States have increased since 1983, from 21.4 percent to 28.5 percent of total C&I loans here.

³For a more complete discussion, see Foreign Investment: Federal Data Collection on Foreign Investment in the United States, (GAO/NSIAD-90-25BR, Oct. 3, 1989).

**Figure 3.2: Foreign Banks' Lending—
 Share of the U.S. Market, 1983 and 1989**
 (Based on C&I Loans Outstanding)



1983 - Total commercial & industrial loans \$395.9 billion

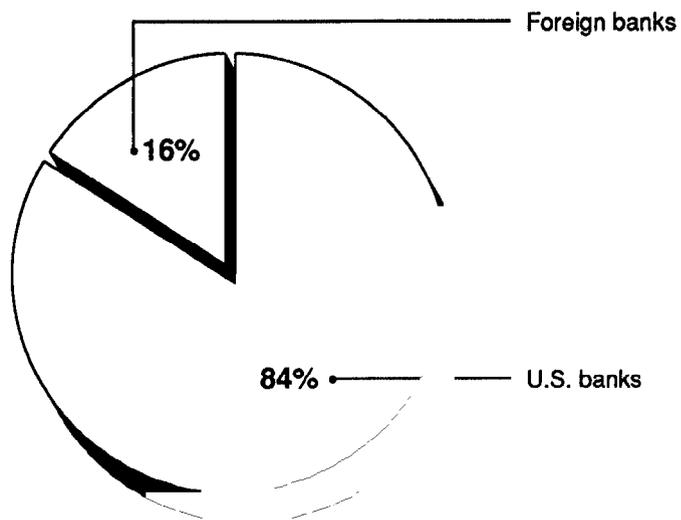


1989 - Total commercial & industrial loans \$628.3 billion

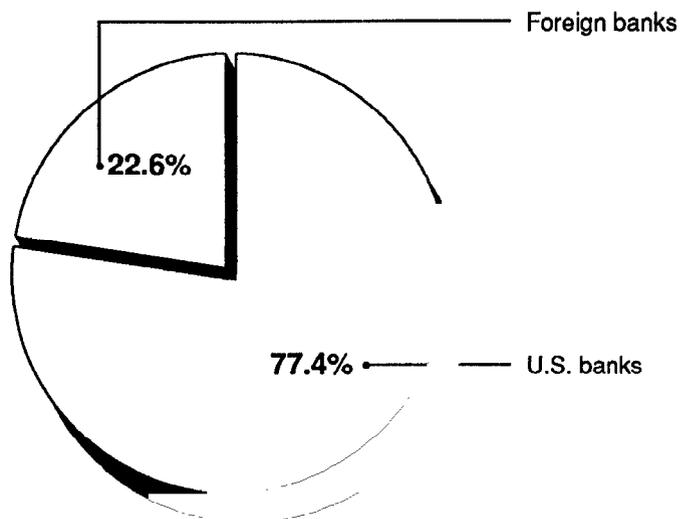
Source: American Banker, March 6, 1989, and February 27, 1990.

Figure 3.3 shows that foreign banks held 22.6 percent of total U.S. banks' assets in 1989, up from 16 percent in 1983. As of June 1988, Japanese-owned banks had the largest holdings of all foreign banks in the United States, accounting for over half of the banking assets held by foreigners. Foreign holdings are quite concentrated, with the top 5 foreign banks accounting for over 75 percent of U.S. banking assets held by foreigners.

Figure 3.3: Percentage of U.S. Banking
Assets Held by Foreign Banks, 1983 and
1989



1983 - Total assets \$1,854.7 billion



1989 - Total assets \$3,073.6 billion

Source: American Banker, March 6, 1989, and February 27, 1990.

According to the Federal Reserve Board, when evaluating market shares of foreign banks, international banking is principally a wholesale and interbank market. This means that the actual penetration of some

domestic market segments by foreign banks is smaller than the figures for total assets suggest. Because the business loan market is an important target for most major banks and provides a useful measure of market share, analyzing C&I loans by foreign banks may provide a more accurate picture of the market share held by foreign banks. Both measurements, however, show an increase in foreign banking that can be attributed, in part, to the increase in foreign corporations that locate operations in the United States.

However, because foreign-owned branches essentially represent offices of the foreign parent corporation, not acquisitions of existing American banking assets, both asset share and C&I loan share may be an inaccurate assessment of the foreign banking presence. Foreign branches are more likely to be involved in the wholesale side of the market, servicing the international and domestic financing needs of foreign nonbanking subsidiaries, which often come from the same country as the parent bank. Foreign-owned subsidiaries, on the other hand, can emphasize retail banking and may, therefore, compete directly with U.S.-owned banks.

Geographic Concentration

Foreign branches and subsidiaries are primarily located in seven major U.S. cities and are most heavily concentrated in New York (see table 3.1). As of June 1989, New York accounted for approximately 57 percent of the total foreign branches and subsidiaries in the United States; the top 7 cities accounted for over 85 percent of all foreign branches and subsidiaries in the United States. Also as of that date, foreign branches located in New York held over \$382 billion in assets, and foreign subsidiaries there held over \$83 billion. In California, foreign branches held over \$16 billion in assets, and foreign subsidiaries held over \$40 billion.

**Table 3.1: Location of Foreign Banks'
U.S. Branches and Subsidiaries (June
1989)**

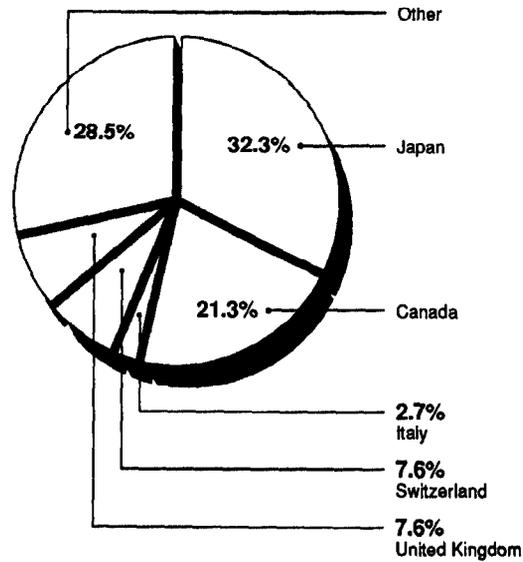
Location	Branches	Subsidiaries
New York	233	33
Los Angeles	30	13
Chicago	53	5
San Francisco	7	7
Miami	0	3
Washington, D.C.	3	0
Seattle	9	0
Subtotal	335	61
Total for all	364	101

Source: American Banker, February 27, 1990.

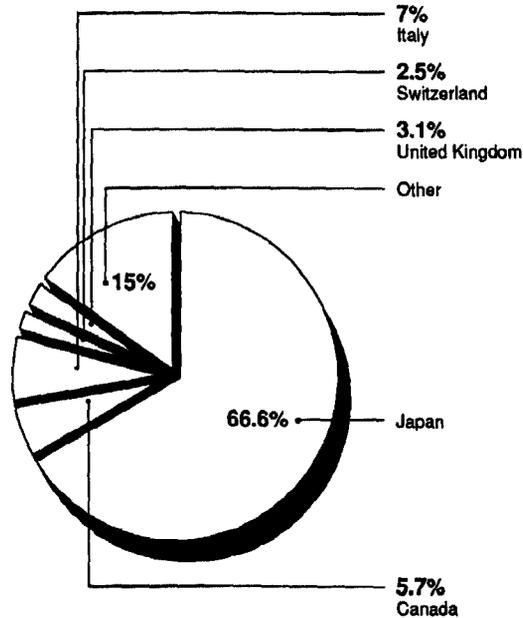
The Japanese as Global Bankers

Japan increased its share of foreign branch and agency C&I loans from 32.3 percent in 1980 to 66.6 percent in 1989. (See fig. 3.4.) The reasons for this large presence include Japan's emergence as the largest international banker as well as increased U.S.-Japan commercial activity, reflecting growth in both trade volume and Japanese firms' investments in the United States.

**Figure 3.4: Foreign Branch and Agency
 Loans to U.S. Commercial and Industrial
 Borrowers, 1980 and 1989**



1980 - Total loan value \$29.1 billion



1989 - Total loan value \$117.8 billion

Note: Other includes rest of Western Europe, Latin America, Asia/Middle East, Australia.

Source: Federal Reserve Board.

According to the Federal Reserve Board, Japanese banks' share of total international banking assets grew from 23 percent in 1984 to 38.2 percent in 1988 (from \$518.8 billion to almost \$1.8 trillion). Their assets were estimated to be more than 2 1/2 times as large as the international banking assets of U.S. banks (which were \$675 billion in 1988). Between 1984 and 1988, U.S. banks' share of total international banking assets decreased from 26.4 percent to 14.6 percent. In addition, the fact that the top 10 deposit-takers at year-end 1987 were all Japanese banks (as were 17 of the top 25) illustrates the strength of the Japanese banking system.

Another factor that helps explain the growth of the Japanese banking presence during the 1980s is the increase in U.S.-Japanese trade levels and in the numbers of Japanese multinational companies locating in the United States, both of which attracted accompanying Japanese banking services. According to U.S. banking officials, foreign banks that accompany their home country firms to the United States operate mainly in the wholesale market. For example, they arrange trade financing and provide letters of credit and guarantees to municipalities.

The Japanese have chosen the California and New York markets for several reasons, including favorable locations for international trade and strong economic factors. A majority of U.S. trade with Japan, for example, passes through California ports. The surge in trade with Japan in recent years has increased the need for overseas banking services—loans, payment facilities, and deposit-taking—on the part of Japanese firms doing business in California. In addition to having a trade-related California customer base in place, Japanese bankers have also found the domestic California economy attractive because of its size, diversity, and record of rapid growth and economic stability.

In California, where the Japanese are the most active foreign bankers, total foreign ownership of banking assets has remained about level since 1982, accounting for 30.8 percent of California banking assets in 1982 and 32.4 percent in 1988. The Japanese, however, have increased their subsidiaries, agencies, and branches, accounting for approximately 25 percent of all California banking assets in 1988, up from 10.7 percent in 1982. Much of this growth has been at the expense of British-owned banks, which have largely abandoned the California market. The Japanese have essentially replaced the British as the dominant foreign banking power in the California market.

Recent actions by Japanese bankers include entering the U.S. middle market of business borrowers. This market, which includes thousands of companies that have revenues above \$5 million but are not yet large enough to rank among the Fortune 500 list of the largest U.S. corporations, is considered one of the most profitable lending sectors in the United States. Japanese banks showed their desire to expand operations in the middle market by recent acquisitions such as the CIT Group, a unit of Manufacturers Hanover Corporation, by Dai-Ichi Kangyo Bank and the middle-market lending business of Lloyds Bank, PLC, by Daiwa Bank Ltd.

U.S. Activities in International Banking

Most larger U.S. banks have increased their international banking significantly during the past 2 decades, mainly through branches and subsidiaries, which, in 1987, accounted for over 70 percent of all U.S. international banking assets. U.S. branches overseas accounted for 49.6 percent of total U.S. international banking assets in 1987, and subsidiaries accounted for 21.8 percent.

In late 1965, only 13 U.S. members of the Federal Reserve System had foreign branches, and their combined branch assets were less than \$10 billion. By 1987, 153 banks, representing virtually every U.S. bank with assets of more than \$2 billion, had at least 1 foreign branch. According to Federal Reserve officials, the increase in foreign branches of U.S. banks reflects the level of these banks' relations with those countries, the development of various banking centers, and the regulatory environment in different countries.

Establishing foreign subsidiaries is generally a bank's second choice of market entry, and so the growth of subsidiaries has lagged behind that of foreign branches. U.S. banks have large commercial banking subsidiaries that focus on both wholesale and retail business. While most U.S. banks emphasize the wholesale business, a few—Citibank and Chase Manhattan, for example—operate retail banks. Overall, the activities of these subsidiaries tend to be similar within a given country and reflect local banking and tax laws and banking structures.

Analysis of Concerns

According to U.S. regulators, foreign-owned banks are generally well run. As of 1988, there were no foreign-owned banks that the Federal Deposit Insurance Corporation considered potential failures. State and federal regulators viewed foreign direct investment as positive, because the foreign owners are backed by the large size and assets of the foreign

parent. For example, many Japanese banks with California subsidiaries are among the largest in the world.

According to state and federal regulators, foreign-owned banks are generally subject to the same rules and regulations as U.S.-owned banks and thus are afforded "national treatment." Nevertheless, foreign-owned banks are perceived as having advantages over U.S.-owned banks or having an adverse effect on the industry.

Differences in Regulatory Treatment of Foreign Banks

Foreign banks, either with a national or state charter, are required to meet the same general standards of strength, experience, and reputation as U.S. banks. In applying this policy of national treatment, however, a Federal Reserve official stated that, because foreign banks operate under different regulatory regimes, they may not meet the same precise requirements as established for domestic banks.

For example, Japanese banks appear to be undercapitalized compared with the measurement used in the United States. However, according to a Federal Reserve official, this would not be a fair comparison, because the Japanese banks are healthier than this measure would indicate. For example, Japanese bank holdings of real estate or stocks may not be adequately accounted for in measuring the banks' current capital position. These types of differences are expected to disappear over the next few years as regulatory agencies in major developed countries implement common standards of capital adequacy.

Before 1978, foreign-owned banks had an advantage in the United States with respect to interstate banking. They could operate in more than one state at a time, whereas U.S. banks were restricted to operating in only one state. Because the International Banking Act of 1978 requires all banks to name one of the states as their principal location of operations, thereby making them subject to interstate banking regulations, foreign banks are now subject to the same laws that apply to domestic banks.

Nevertheless, some domestic banks have argued that they are at a competitive disadvantage because they cannot operate in another state until 1991, whereas foreign banks, located either overseas or operating in the state, are free to acquire institutions in that state. For example, in 1988, Union Bank in California was purchased by a Bank of Tokyo subsidiary. A U.S. bank based in New York had been interested in acquiring Union Bank but was prohibited by interstate banking restrictions. Banking

officials point out there was no favored treatment of the Bank of Tokyo because, having selected California as its home state, it cannot acquire a New York-based bank. Similarly, a foreign bank in New York cannot expand into California.

Lending Patterns of Foreign Banks

Another area of concern deals with the lending patterns of foreign-owned banks as compared with U.S.-owned banks. According to state officials from New York, California, and Georgia, foreign owners acquiring U.S. banks have maintained the same operations that existed under the previous owners, although there may have been some slight change in emphasis, such as more international business lending. In addition, bank regulators told us that foreign takeovers have not hurt the local communities.

In California, for example, the Japanese have acquired several banks previously owned by the British. The British banks had entered the California market in the early 1970s by buying existing, domestically owned banks. They did not focus on servicing British firms operating in the United States, but instead competed for loan business as any domestic bank would. On the other hand, as the Japanese banks have acquired British interests, they have sought out international clients in addition to competing for retail business.

Subsidiaries of foreign banks, in general, have a fairly large retail presence but continue to demonstrate a greater proclivity toward making business loans, compared with domestically owned banks. At the end of 1987, for example, 29.9 percent of Japanese banks' asset portfolios in California consisted of business loans, compared to 19.5 percent for domestic banks. Other foreign banks, usually branches and agencies, have a strong wholesale orientation and primarily serve business customers. (See figs. 3.2 and 3.4.)

Foreign-Owned Banks' Close Relationships With Foreign Nonbank Subsidiaries

Discussions with bank regulators, bankers, and other industry analysts did not reveal any evidence that U.S.-owned companies have been negatively affected by the tendency of foreign-owned banks, particularly the Japanese, to have close ties with their home country nonbank subsidiaries in the United States. One analyst, however, said that any bank has a limited amount of staff to solicit business, and the more attention this staff gives to their home country firms, the less time they have for U.S.

firms. He also stated that, during periods of tight money, such an orientation could favor foreign-owned firms in terms of the cost and amount of funds available for lending.

Foreign Banks' Control of Standby Letter of Credit Market

According to the Federal Reserve, foreign-owned banks have captured a particularly large market share in the issuance of standby letters of credit. Standby letters of credit guarantee the payment of a customer's drafts up to a stated amount for a specified period. These letters substitute the bank's credit for the buyer's and eliminate the seller's risks.

Market share data for September 1988 suggest that the foreign banking institutions accounted for more than 60 percent of the \$52.1 billion standby letters of credit outstanding. The Japanese-owned banking institutions, with 43.8 percent of the market, were especially active in providing these guarantees. The bulk of the standby letters of credit issued by foreign institutions are issued by the agencies of foreign banks. Many are likely to be related to the extension of trade credits, which is a major activity of foreign-owned agencies.

Overall, most regulators conclude that their regions have benefited from the opportunities for retail and wholesale banking services provided by foreign-controlled banks, from the trade financing provided by these banks, and from the presence of agency and branch offices.

Conclusions

Banking is a sector critical to the functioning of a country's economy. Because of its central role in channeling payment flows to sustain economic growth and transmitting government monetary policy, the banking sector is of special interest to the U.S. government. As foreign entities gain control over an increasing share of U.S. banking assets, concerns have arisen about potential effects on the growth and development of U.S. industry through changes in bank lending patterns.

From 1983 to 1989, foreign-owned banks in the United States increased their share of total lending to commercial and industrial borrowers from 21.4 percent to 28.5 percent. A large part of this share includes international trade-related credits and other credits to foreign-owned subsidiaries in the United States. In addition, the share of U.S. banking assets controlled by foreign-owned banks increased from 15.5 percent to 22.6 percent from 1983 to 1989. There has been no attempt, thus far, by foreign interests to acquire the large, money center banks.

It is not clear whether there is a threshold point at which foreign ownership of U.S. banking assets might be undesirable. We note, however, that detailed data on foreign investment trends and specific transactions are available from the Federal Reserve Board and other federal and state regulatory agencies. To the extent that concerns arise over changes in lending patterns by foreign-owned banks, assessments can be made of bank lending patterns and competitive behavior.

Petroleum: Concerns Over Producing-Country Investments

The economic and national security implications of U.S. dependence on Organization of Petroleum Exporting Countries (OPEC) oil have been a public policy issue since the 1973 oil embargo. With several recent acquisitions of U.S. oil company operations by oil-producing countries, questions have arisen about the implications of FDI in the U.S. petroleum sector.

Information about FDI in petroleum is more detailed than in many other sectors because the Department of Energy has a legislative requirement to collect and publish information on specific investments. With detailed data available from both the Energy Department and BEA, concerns about the effects of foreign investment in petroleum stem less from inadequacies in U.S. government data on foreign investment than from differing policy viewpoints in interpreting the consequences of this investment.

Many industry analysts (representing federal and state government agencies and a major industry association for the larger oil companies) view recent FDI as part of a global trend toward integrating the oil-producing (“upstream”) and the oil-refining and -marketing (“downstream”) portions of the oil industry. Generally, analysts see these recent developments as positive, believing that closer relations between foreign oil producers and U.S. refiners would encourage continued foreign oil supplies to U.S.-based refineries in the event of disruptions in the world oil supply.

Others, however, including some consumer groups and smaller U.S. independent oil firms, remain concerned about the effects of such integration on (1) U.S. dependence on foreign oil, (2) continued exploration for and production of domestic oil, and (3) U.S. vulnerability to actions taken by foreign government-owned oil companies. We note, however, that these concerns stem from U.S. dependence on imported oil and, therefore, should not be linked exclusively with downstream integration.

Restrictions on FDI in the U.S. Petroleum Industry

As with banking and some industries relating to national security, certain federal restrictions apply to FDI in two areas relating to the U.S. petroleum industry. First, all ships, including oil vessels, engaged in U.S. coastal trade must be registered under the laws of the United States, and individuals having interests in such vessels must hold U.S. citizenship. Second, under the provisions of the Mineral Leasing Act (30 U.S.C. 181), there are conditions on foreign investment involving mineral leases in,

or oil or gas pipelines through, the approximately one-third of U.S. onshore land owned by the federal government.

Data Sources and Trends

The Department of Commerce and the Department of Energy are the primary sources of information on FDI activity in the oil sector. The Commerce data were described in chapter 2. The Energy Department's Energy Information Administration summarizes foreign investment, operations, and financial performance and publishes lists of specific transactions.

Energy's annual report, Profiles of Foreign Direct Investment in U.S. Energy, uses information provided by BEA and public and industry sources to show trends and to identify specific investors. However, because BEA data on individual investments is suppressed for proprietary reasons, the Energy Information Administration has difficulty in developing data on the amount of investment a country may have made in any particular year. Also, differences in the way that BEA and the Energy Information Administration classify the data may result in some categories of investment being understated. For example, BEA may classify petroleum distribution as a "wholesale" category, whereas the Energy Department would consider it as a petroleum investment. Similarly, an OPEC member investment, made through a subsidiary in a European country, may not appear in BEA data as an OPEC investment.¹ The Energy Information Administration's annual report provides publicly available descriptions of OPEC investments that are more specific and complete than BEA's reports.²

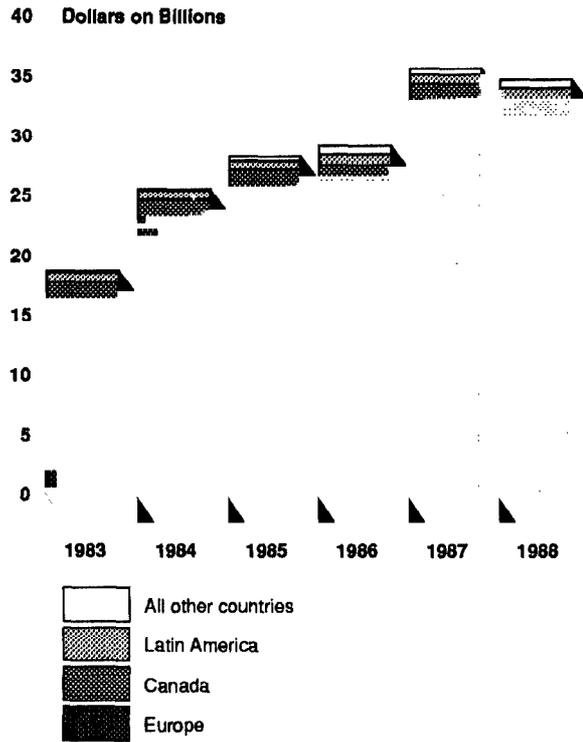
Europeans as Major Investors

Both BEA and Energy Department data show that the major investing countries are European. (See fig. 4.1.) The aggregate data show that although FDI in the oil sector has risen in absolute terms, it has actually declined as a share of total FDI (from 14.2 percent in 1982 to 10.5 percent in 1988).

¹For a more complete discussion, see Foreign Investment: Federal Data Collection on Foreign Investment in the United States, (GAO/NSIAD-90-25BR, Oct. 3, 1989).

²The Energy Information Administration obtains its information from the Commerce Department, publicly available information, and industry sources.

Figure 4.1: Sources of FDI in U.S. Petroleum (Based on Balance of Payments Statistics)

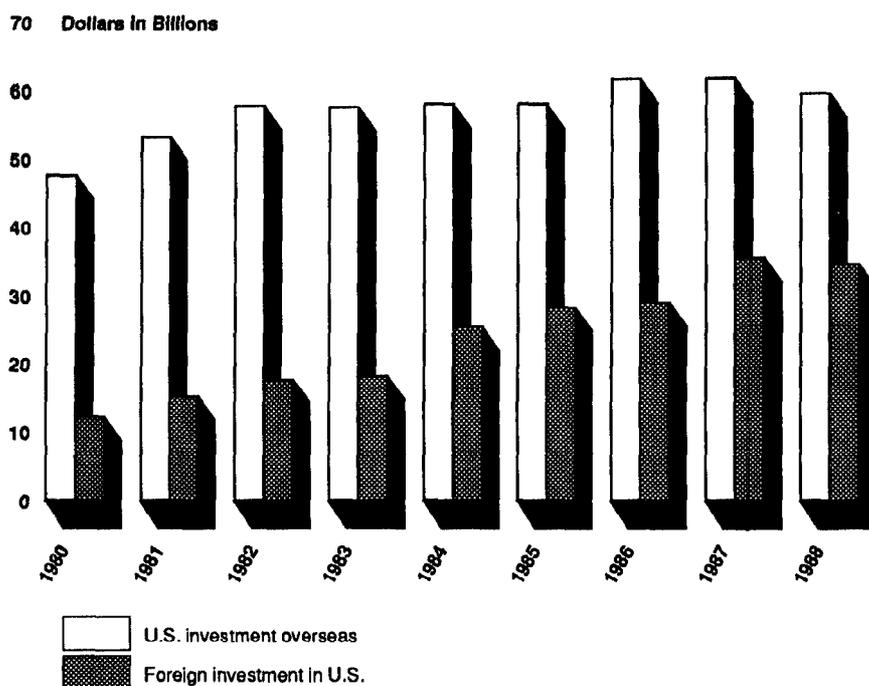


Source: Energy Department from Commerce Department data.

U.S. Investments in Foreign Petroleum Sectors

Because the U.S. petroleum industry has also been active in investing overseas, the United States remains in a net positive foreign investment position in this sector. (See fig. 4.2.) However, from 1980 to 1988, FDI in the U.S. petroleum sector grew by \$22.5 billion, while U.S. investments in foreign petroleum sectors grew by only \$12.1 billion.

Figure 4.2: Petroleum Industry, International Direct Investment (Based on Balance of Payments Statistics)



Source: Energy Department from Commerce Department data.

Predominance of Large Transactions

The more detailed, company-specific information published by the Energy Information Administration indicates that recent foreign acquisitions of U.S. petroleum assets have been mostly large and highly visible, with transactions over \$100 million accounting for more than 90 percent of known transactions.³

Oil-Producing Country Acquisitions of Refining and Marketing Operations

Recent instances of FDI in petroleum indicate that oil-producing countries have sought, through their government-owned companies, to secure global as well as U.S. markets for their refined petroleum products in order to create a more stable, secure relationship with their customers. For example, Kuwait has pursued 100-percent integration of its

³An Energy Department official said the Department is able to obtain dollar amounts for 80-90 percent of all petroleum transactions for a given year. Most of the transaction values listed as not available are below \$10 million.

oil industry, from exploration and production (both domestic and overseas) to shipping, refining, and retail sales by investing in both European and American petroleum industry assets. Venezuela's strategy is characterized by joint ventures with existing refiners and retailers in the United States; it acquired a 50 percent equity share in the CITGO Petroleum Corporation in 1986 and the Champlin Refining Company in 1987, enabling it to sell gasoline products at more than 6,000 retail outlets in 1987.

Saudi Arabia recently acquired U.S. refining capacity in cooperation with a U.S. multinational oil company. In 1988, the Arabian-American Oil Company (ARAMCO) purchased a 50-percent share of Texaco's refining assets and related marketing system for about \$812 million. The assets of the joint venture between Texaco and ARAMCO include 3 major refineries, 50 product distribution terminals, approximately 1,400 owned and leased service stations, and a branded distributor network of approximately 10,000 stations.

Concerns Over Integration of the Oil Industry

The rise of oil-producing country investments in downstream activities in the United States has generated concern among some industry analysts over its potential impact on U.S. economic and foreign policy. These concerns focus on (1) the possible effects of integration on U.S. oil imports and the acceptable level of U.S. dependence on foreign crude oil, (2) the potential of foreign investors to disrupt domestic production through pricing and refining policies, and (3) the desirability of foreign government ownership of U.S. petroleum assets.

Effects on U.S. Imports

A secure source of petroleum is considered a national security goal. While it is generally recognized that the United States will need to rely on continued oil imports, questions remain about the acceptable level of such dependence. A 1989 Commerce Department study found that U.S. access to petroleum is essential to U.S. economic security, foreign policy flexibility, and defense preparedness; it concluded that increased U.S. dependence on petroleum imports threatens to impair the national security.

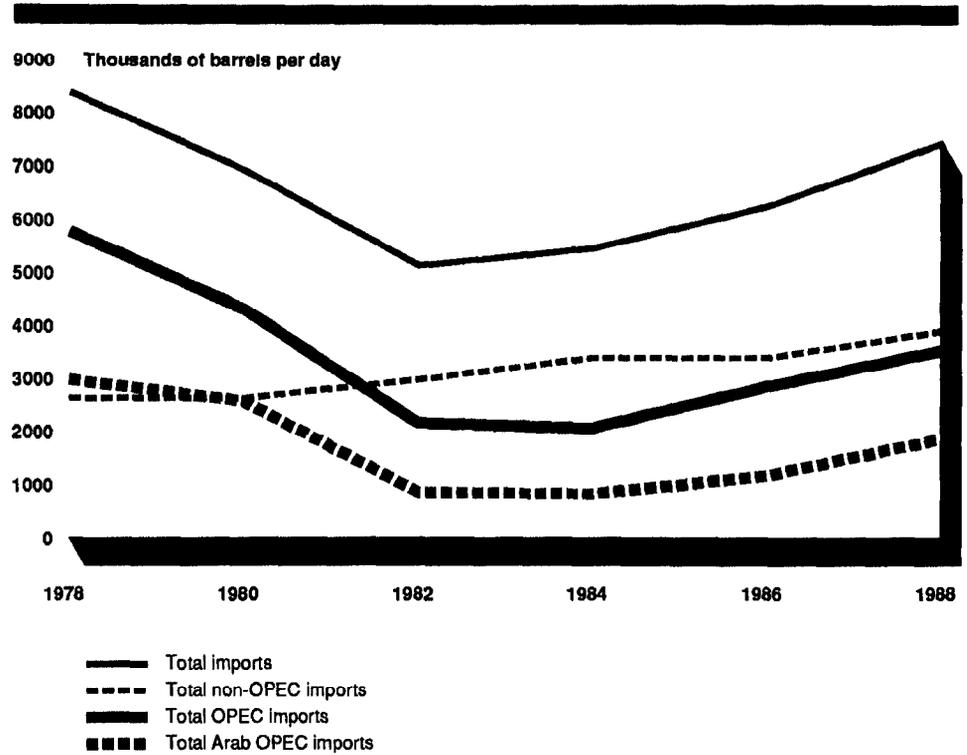
Some analysts are concerned that the recent foreign investments in U.S. refining and marketing operations may enable foreign suppliers to gain a larger market share in the United States than may be desirable. Foreign ownership of U.S. petroleum assets potentially encourages further U.S. dependence on foreign crude oil.

Energy Department officials noted that U.S. dependence on foreign oil was a public policy concern before the current trend toward integration of the petroleum industry and will continue to be an issue as long as U.S. oil consumption significantly exceeds domestic oil production. These officials agree that access to petroleum is essential to U.S. economic security and that increased dependence on petroleum can be a national security concern. However, they argue that the only way to decrease this dependence is to develop alternative sources of energy.

Energy Department officials view the integration of the oil industry as a means of obtaining a more secure source of oil as U.S. reserves decrease. The downstream investment in refineries and petroleum product distribution raises the cost to crude oil producers of their participation in a supply interruption. Potential losses would include not only lost revenue from reduced crude oil sales, but also losses from refiner and distribution channels.

Furthermore, Energy Department officials stated that the United States is less vulnerable to oil import disruptions now because as more producer countries invest in the U.S. economy, the source of oil becomes more diversified. (See fig. 4.3.)

Figure 4.3: Crude Oil/Petroleum Product Imports to the United States



Source: Department of Energy.

Effects of Pricing Policies on Domestic Production

Critics of oil-producing country investments in downstream activities argue that FDI in U.S. petroleum makes it difficult for U.S. independent drillers to compete against low-cost foreign producers, and that this foreign investment may result in the United States becoming vulnerable to price disruptions and reliance on foreign oil.

One industry organization, representing consumers and independent oil producers, contends that once foreign companies acquire major U.S. refining and marketing outlets, they will be able to discourage U.S. oil exploration and production. By increasing their own production, oil-producing countries can cause short-term crude oil prices to fall. Because U.S. production costs are high compared with OPEC producers', a price cut would make it unprofitable for U.S. firms to produce domestic oil. This organization also believes that if U.S. producers were forced out of the market, foreign companies would be in a position to raise oil prices by decreasing their production.

According to industry analysts, there are a large number of small and modest-sized oil fields in the United States, and small U.S. drillers with their low overhead costs are most likely to profit from developing these fields. Domestic production of crude oil from these fields, therefore, depends on the small, independent oil producer. But, if more independents were forced out, domestic production would decrease, and there would be an even further reliance on foreign crude oil.

A consumer group argues that, as foreign companies initiate more joint ventures with U.S. oil companies, domestic independent drillers may be forced out of business because they cannot get their crude oil refined. Furthermore, most major refineries are now controlled by large international oil companies. As more major companies retool their refining process to handle foreign crude oil, domestic drillers may find it difficult and expensive to get their crude refined. Should this occur, the U.S. production of crude oil could diminish; this could potentially lead to price increases for U.S. consumers.

Energy Department officials argue that oil-producing countries do not need to invest in U.S. downstream activities in order to cause short-term crude oil prices to fall. These officials believe that FDI does not significantly affect the independent drillers' production costs because they would have the same production costs without foreign acquisitions of downstream assets.

Furthermore, Energy Department officials state that while foreign interests control approximately 27 percent of U.S. refining capacity, OPEC countries control roughly 6 percent of U.S. refining capacity. Department officials also point out that the large Saudi Arabian joint venture with Texaco involved only 4 percent of total U.S. refining capacity, and this level should not limit independent drillers' access to refineries.

Concerns Over Foreign Government Ownership

Because most foreign oil companies are state owned, there is also concern that these companies may be guided more by political motivations than by purely economic considerations. As one consumer group argues, foreign government corporations may act differently from foreign, privately owned corporations because government corporations are responsible to their governments, can operate to gain market dominance or political aims rather than to maximize profits, and cannot be acquired by U.S. firms.

One analyst believes that changes in foreign governments or politics may also mean changes in oil prices. Production and price fluctuations in the petroleum industry may be subject to social and political forces, not market forces. The 1973 oil embargo and recent regional conflicts in the Middle East illustrate this point.

Energy Department officials acknowledge that foreign government ownership of U.S. petroleum assets has increased but believe that any decision about those assets will be based upon economic rather than social or political decisions. They believe that most oil-producing countries that invest in the United States need the revenue to fund domestic development programs and would not jeopardize their oil revenues and foreign investments.

Critics also raise other questions about foreign government ownership, such as whether the oil companies, in case of a regional conflict, would act in the best interests of the United States or whether they would pursue their own interests and those of their partners.

According to Energy Department officials, issues concerning the protection of U.S. petroleum interests have existed prior to recent foreign investments in downstream activities and, therefore, should not be linked solely with FDI. In the event of conflict with an investing country, the U.S. government has the means of protecting its petroleum interests through the Defense Production Act and the International Emergency Economic Powers Act. Both of these acts give the President broad authority to take appropriate economic measures to protect U.S. interests.⁴

Another concern relates to the potential antitrust problems that may exist regarding government-owned entities operating in the United States. If there were a need to investigate a foreign government's commercial activity under the antitrust laws, it would be necessary to obtain information on the price, quantity, and quality of the imported crude. One industry group contends that a foreign government might refuse to cooperate with an investigation by claiming sovereign immunity under the Foreign Sovereign Immunities Act.

⁴The former act authorizes the President to establish priorities or allocations in order to maximize domestic energy supplies. The latter act authorizes the President, upon declaration of a national emergency, to regulate the acquisition or holding of any property interest of a foreign country.

The Department of Justice believes that exceptions to the act enable it to obtain adequate information on the commercial activities of foreign government-owned enterprises.

Arguments in Favor of Foreign Refining and Marketing Operations

While there is some public concern about foreign-owned downstream activities, federal and state officials and industry analysts told us that the benefits of such ownership outweigh any negatives. The officials and analysts said that continued integration provides increased stability in the world oil market. Because of expanded economic exposure, OPEC countries with significant overseas petroleum investments will be less likely to risk serious financial losses and reduced market share by destabilizing these markets through actions such as production cutbacks. Investing countries have a stake in the economic health of the United States. In addition, with increased stability, efficient U.S. and Western refiners will be able to compete with OPEC export refiners and will be in a position to profit from the increased stability that these refineries bring.

Case Study: Interagency Review of the Texaco/Saudi Arabia Joint Venture

In late 1988, the interagency Committee on Foreign Investment in the United States (CFIUS) reviewed the proposed joint venture between Texaco, Inc., and the Saudi Arabian oil company (ARAMCO). This review, as authorized by the 1988 Exon-Florio Amendment to the Defense Production Act, illustrates how differing policy perspectives, rather than FDI data problems, were the subject of debate concerning downstream FDI. The review clearly shows the U.S. government position on FDI in petroleum and its arguments on the benefits of such activities.

In spring 1988, CFIUS and the Energy Department were initially advised about the pending joint venture and, in June 1988, decided not to initiate an investigation. In response to requests from third parties for an investigation, CFIUS, in December 1988, again considered the investment and decided against an investigation.

The Justice Department also reviewed the transaction and raised no objections on antitrust grounds. The Department concluded that the proposed joint venture would not raise barriers to entry or allow the Saudi government to engage in a "price squeeze" in the affected markets, because the markets are sufficiently large and diverse, and Texaco's share of the market is relatively small.

Chemicals: A Global Industry

As foreign investors have entered the U.S. economy over the past decade, few industries have been as heavily invested in by foreign interests as chemicals. A 1988 Commerce Department report¹ states that foreign-owned companies account for about 30 percent of total chemical industry assets. Despite this high level of foreign ownership, most industry experts had few concerns over this share. Because the United States accounts for approximately 30 percent of the world demand for chemical products, most analysts expect foreign companies to compete for this market share through FDI. U.S. chemical firms are active investors overseas, and the industry is generally considered global.

Foreign acquisitions of U.S. chemical companies, as with petroleum companies, have often been large and highly visible, and the quality and quantity of data collected by the Commerce Department was not of major concern to industry analysts.

Data Availability and Trends

According to most experts, information collected by BEA, Census, and other federal and private sources is adequate for analyzing the extent and origin of FDI in chemicals.

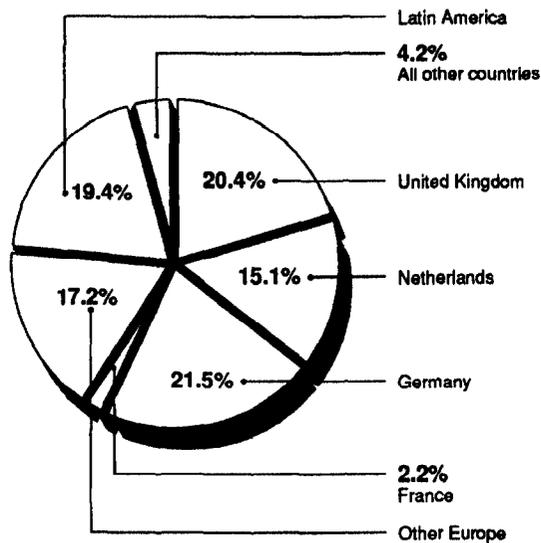
Growth of FDI

Commerce Department statistics show that FDI in the U.S. chemical industry, measured as balance of payments flows, more than tripled between 1980 and 1988, growing from \$9.3 billion to \$34.1 billion. The other Commerce data series, describing affiliates' assets, also shows that U.S. affiliates of foreign companies nearly tripled their ownership of U.S. chemical assets between 1980 and 1987. In addition, these data show that such affiliates more than doubled their sales and increased their net incomes more than tenfold.

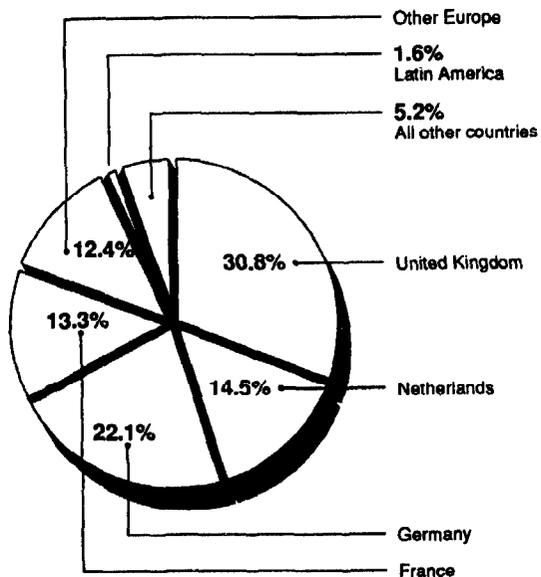
Commerce Department statistics also show the continued dominance by the United Kingdom, the Netherlands, West Germany, and France, whose total FDI share in the U.S. chemical industry increased from 59.2 percent in 1982 to 80.7 percent in 1988. (See fig. 5.1.) The Japanese, though minor investors overall, have recently tended to acquire small U.S. firms with either unique technology or a nationwide distribution network.

¹1988 U.S. Industrial Outlook, U.S. Department of Commerce, International Trade Administration, (Washington, D.C.: U.S. Government Printing Office, 1988).

Figure 5.1: Sources of FDI in the U.S. Chemical Industry, 1982 and 1988 (Based on Balance of Payments Statistics)



1982 - Total FDI \$9.3 billion

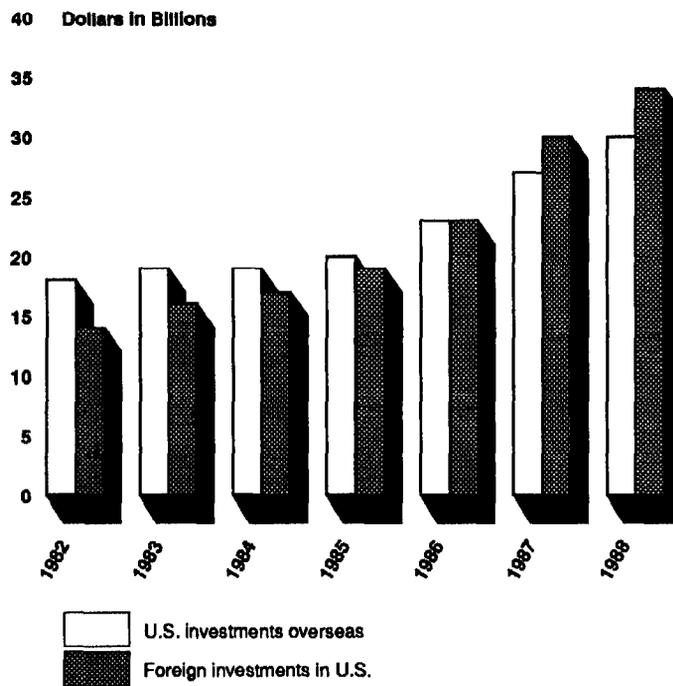


1988 - Total FDI \$34.1 billion

Source: Survey of Current Business, August 1983 and August 1989.

Statistics also indicate that the accumulated value of FDI in the U.S. chemical industry began in 1987 to exceed the value of similar U.S. investments overseas (see figure 5.2). As noted in chapter 2, however, U.S. investments overseas tend to be much older than foreign investments here, and the use of "book value" of the original investment results in undervaluing U.S. direct investments overseas.

Figure 5.2: Chemical Industry, International Direct Investment (Based on Balance of Payments Statistics)



Source: Chemical Manufacturing Association from Commerce Department statistics.

Structure of the Industry

The manner in which chemical firms have internationalized their activities largely reflects the industry structure and the global marketplace in which firms compete. Three segments constitute the industry, each having a one-third share: bulk chemicals; differentiated products derived from basic chemicals; and smaller volume products, divided into fine and specialty chemicals.

Industry characteristics include intra-industry dependence and large amounts of capital allocated to research and development (R&D). Many

of the bulk chemicals produced are useful only for further chemical conversion. From these basic chemicals other groups of chemicals are produced. For example, ethylene, which is the largest volume petrochemical product, is used solely in the production of other petrochemical products. Ethylene can be shipped only short distances, and so ethylene plants act as magnets in attracting ethylene users. Therefore, if a foreign producer wants to sell ethylene-based petrochemicals in the United States, its operations must be located near ethylene plants.

The industry is also R&D-intensive, with specialty chemicals receiving the largest share of R&D allocations. R&D allocations by foreign affiliates in the chemical industry increased at a faster rate between 1980 and 1987 than did foreign ownership of chemical assets. In addition, these allocations have consistently accounted for more than half the R&D spent by all affiliate manufacturers.

Reasons for Investing in the United States

According to industry analysts, foreign firms invest in the U.S. chemical sector for the same reasons U.S. chemical firms invest overseas—to gain access to large markets, to spread R&D costs, and to lower overall costs.

The U.S. chemical market is the largest single national market in the world. This large size is attractive in an industry for which economies of scale and transportation costs are important, especially for specialty chemicals. The ability to provide service and to meet delivery schedules are further incentives for production in this country.

According to industry analysts, as research costs become larger, access to world markets becomes more important. FDI, therefore, allows for spreading R&D costs across wider sales.

Also, taking advantage of exchange rate differentials is a means of lowering production costs. The weak U.S. dollar (relative to other major currencies), depressed stock prices, and continued projections of a healthy chemicals market have been cited as reasons for FDI in the United States over the past several years. By acquiring existing domestic companies, foreign firms, in effect, have been able to purchase new market shares with the investment. Further, buying a going concern provides instant production capacity.

Other factors, such as U.S. chemical manufacturers' need for cash and willingness to restructure and divest themselves of unprofitable units, have created an environment for continued FDI. Most experts believe

that, as the chemical industry continues to grow and industrial countries' economies remain healthy, the ongoing globalization of the industry is not of concern.

Conclusions

Foreign investment mirrors the diversity of the industry, with new investments spread out over the three segments that constitute the chemical sector. While some segments traditionally have had a foreign presence, other segments, such as specialty chemicals, are attracting new investments.

The chemical industry is R&D-intensive, and most analysts believe that FDI will bring a flow of new technology to the United States. Industry analysts agree that technology flows in the chemical industry generally benefit both the investor and the country where the investment occurs.

The diversity of the industry, its products and producers, the large U.S. market, and the extent to which U.S. chemical companies invest abroad create a situation where continued FDI in the U.S. chemical industry is to be expected.

Biotechnology: Growing Foreign Activity in New U.S. Technologies

Biotechnology is an emerging sector of potentially great commercial importance. Foreign participation in U.S. biotechnology activities has sparked concern about whether the United States can translate its lead in basic biological science into a maintainable lead in the commercialization of biotechnology-based products. Major foreign competitors have designated biotechnology as a key element in their national economic strategies. At the same time, they have increased their activities with primarily small, innovative, U.S. biotechnology firms. These activities have raised questions about the direction of technology flows.

Because of its potential impact, biotechnology has been called the third technological revolution of the 20th century, after nuclear energy and information technology. It is not an industry per se, but a collection of technologies that can enable product development by living cells. Developments in biotechnology can affect a broad range of industries, from pharmaceuticals and health care to petroleum and agriculture. As a result, biotechnology may become crucial to maintaining a nation's competitive edge.

In the U.S. biotechnology sector, most foreign activity has taken place through business alliances, such as manufacturing, marketing and distribution agreements, licensing and research contracts, and joint ventures. Such alliances have increased markedly during the 1980s, while foreign direct investments have remained relatively few. Direct investment is considered a relatively minor part of overall foreign activity in this sector and is not the focus of most concern.

The central concern is that commercially strategic U.S. technologies are being transferred overseas, particularly to Japan. Most government and industry analysts believe that the United States may be forfeiting long-term commercial benefits and control over core technologies developed in the United States. However, the industry representatives we spoke to considered such concerns secondary to the issue of corporate survival for small U.S. biotechnology firms in need of capital.

The government has little data about foreign investment in U.S. biotechnology and has not analyzed concerns about the transfer of these technologies overseas and the broader implications of such investment. However, some private sector sources can provide information showing trends in foreign participation in the U.S. biotechnology sector.

Characteristics of Biotechnology

Biotechnology is not a separate industry, but a group of sciences and technologies based on living matter. Biotechnology is not new, since microorganisms have been used for centuries in the production of foods, beverages, and other fermented substances. However, breakthrough techniques in molecular biotechnology and genetic engineering were developed during the mid-1970s in U.S. research centers and academic institutions. These revolutionary technological advances became known as “new” biotechnology.

Through integration with existing products, emerging biotechnologies may fundamentally transform existing industrial sectors. Biotechnology can be applied to various products in many different industries, including pharmaceuticals, agriculture, specialty chemicals and food additives, environmental applications, commodity chemicals, energy production, and electronics.

U.S. Industry

The U.S. biotechnology sector consists of two distinct groups: approximately 660 small firms, and about 90 major U.S. corporations working in biotechnology-related areas. The two groups have common interests and concerns about regulation, R&D needs, safety, and patenting.

Small U.S. biotechnology firms have been the dominant source of innovation. However, small, research-oriented firms can require significant capital inflows. They lack the marketing skills and established reputations of larger firms and often lack the resources or desire to mass produce commercial products.

As a result, many small U.S. biotechnology firms have formed worldwide business alliances with other companies, usually large corporations. Whether as licensing or marketing agreements, research contracts, or other joint ventures, these alliances provide the smaller firms with needed capital, mass-production capabilities, marketing skills, and/or distribution channels for developed products. In return, business alliances generally transfer biotechnological R&D to the larger corporations seeking to build in-house expertise.

About 90 major U.S. corporations entered the biotechnology industry during the 1980s, mainly through such business alliances with small firms. These included the largest U.S. pharmaceutical, chemical, energy, and food companies. For large corporations, biotechnology can provide a means of improving or consolidating their competitive position, though biotechnological techniques remain but one aspect of overall production.

Foreign Industries

The major foreign competitors in the commercialization of biotechnology are Japan and four European countries—West Germany, England, Switzerland, and France. In contrast to the United States, the biotechnology sectors in these countries, especially Japan and Switzerland, tend to consist mainly of large, established corporations.

Large foreign firms entered the U.S. biotechnology sector in much the same manner as did large U.S. corporations—through business alliances during the 1980s with small U.S. biotechnology firms. Similarly, the large foreign corporation may gain access to technology while building in-house expertise, and the smaller U.S. firm may generate needed revenues by selling its technological know-how.

Data Difficulties

The Commerce Department is not able to separate biotechnology investments from its databases because the government's classification system is based on product and industry groups rather than on the technology used in production. Under this system, biotechnology products are contained in larger industrial groups such as plant and animal agriculture, chemicals, or pharmaceuticals. The International Trade Administration of the Commerce Department collects public information on foreign investments in the sector but acknowledges that the data are not complete or reliable.

Industry analysts in the government, trade associations, and academia generally rely on private sector data regarding overall foreign investments in U.S. biotechnology. We used data from the Biotechnology Information Program at the North Carolina Biotechnology Center, which collects information from industry surveys and public sources, including newsletters, periodicals, and other related publications. These data treat a firm as foreign only if the majority of the firm's equity is foreign held.

Trends in Foreign Activity

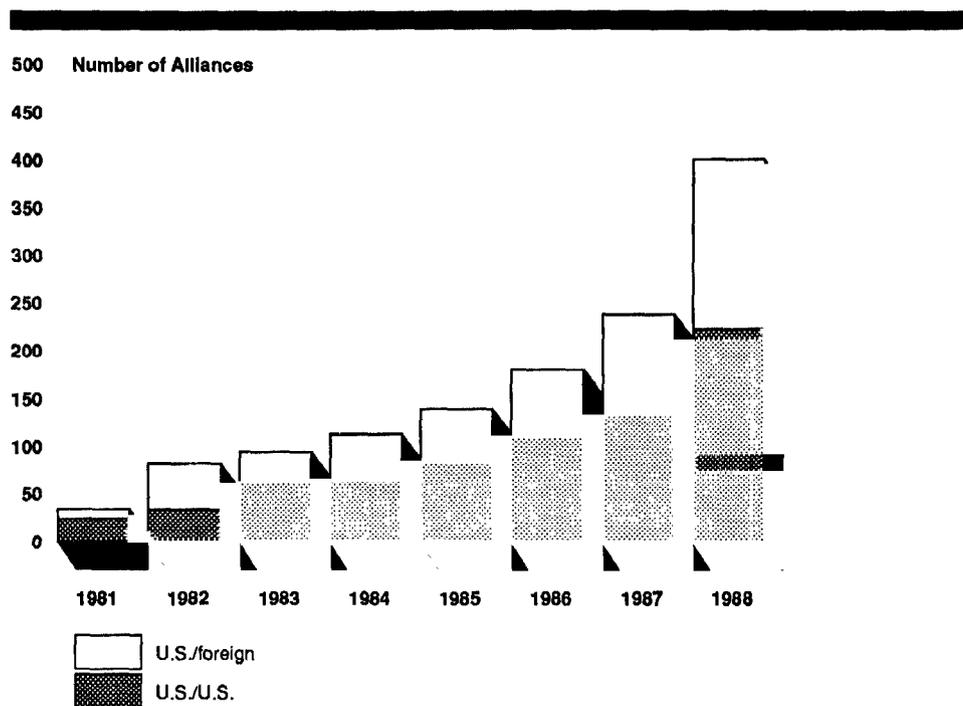
Although government and private sector data cannot provide a precise picture of foreign activity in the U.S. biotechnology sector, it is possible to identify overall trends. Private sector information, as shown in figures 6.1 and 6.2, indicates (1) growing foreign participation through business alliances with U.S. firms, (2) few acquisitions or foreign direct investments, and (3) the most active foreign players to be Japanese firms during the 1980s.

Growth in Foreign Participation Through Business Alliances

The bulk of foreign activity in the U.S. biotechnology sector has been in the form of business alliances with U.S. firms. These alliances include manufacturing, marketing and distribution agreements, licensing and research contracts, and various other types of joint activities. In contrast to foreign direct investment, business alliances are not investments solely in company assets or in U.S. firms themselves. These alliances are, in effect, investments in the intellectual properties of the biotechnology sector, which can flow easily across national borders.

Foreign alliances with U.S. biotechnology firms rose dramatically during the 1980s, from 10 alliances formed in 1981 to 178 formed in 1988 (see fig. 6.1). Most recent data show a surge in such alliances during 1987 and 1988. A similar upward trend appears in the first half of 1989.

Figure 6.1: U.S. Company Strategic Alliances in Biotechnology



Source: North Carolina Biotechnology Center.

Foreign firms represent a growing portion of total business alliances formed in the U.S. biotechnology sector during the 1980s. In 1981, 30 percent of all business alliances formed in the U.S. biotechnology sector involved a foreign partner. By 1988, however, 45 percent of the 400

business alliances formed were between a U.S. firm and a foreign partner.

Few Acquisitions and Direct Investments

There have been relatively few foreign acquisitions or direct equity investments in the U.S. However, industry officials expect a trend toward more mergers and acquisitions in the future as the industry matures and moves beyond the research phase. Some consider the recent acquisition of a major U.S. biotechnology firm by a large Swiss pharmaceutical company as indicative of such a trend. Others maintain that foreign acquisitions and direct investments will remain a relatively minor part of overall foreign participation in the sector.

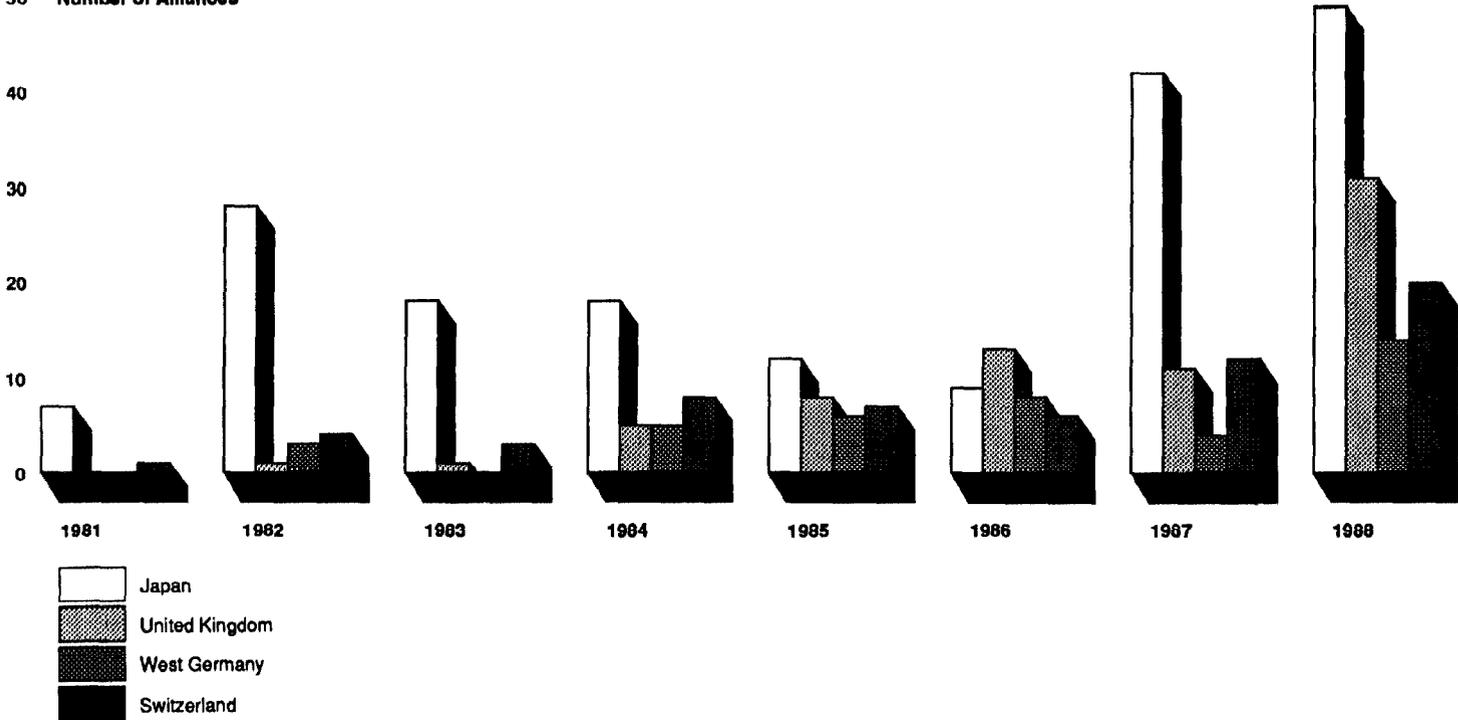
Active Japanese Participation

Industry information also reveals trends by country of the foreign partner (see fig. 6.2). This information shows that

- Japan has been by far the most active foreign player in the U.S. biotechnology industry during the 1980s; and
- Japanese alliances with U.S. biotechnology firms have dramatically increased since 1986.

Figure 6.2: U.S. Biotechnology Strategic Alliances by Major Foreign Partners

50 Number of Alliances



Source: North Carolina Biotechnology Center.

Focus of Concern: The Transfer of Technologies Overseas

Industry analysts' concerns focused on the possibility that U.S./foreign business alliances in biotechnology would transfer commercially strategic U.S. technologies overseas. These analysts noted that, while such alliances can be mutually beneficial in the short run to the firms involved, in the long run the United States overall may potentially

- lose the competitive edge in a critical new technology that can affect a broad range of U.S. industries and, thus, the nation's industrial strength; and
- forfeit future export potential and downstream revenues from commercializing biotechnology-related products.

In short, there is concern that the United States faces the same danger in the emerging biotechnology sector as it experienced in consumer electronics—where the United States made the basic scientific discoveries but failed to successfully commercialize many of them.

Government and industry analysts expressed particular concern about alliances between small U.S. biotechnology firms and large foreign corporations. For example, a small U.S. firm might license its technology to a foreign firm capable of manufacturing and marketing the technology-based product in an overseas market. In the short run, the benefits are clear. The small U.S. biotechnology firm gains much-needed capital and the opportunity to demonstrate in overseas markets the commercial feasibility of its technologies. The foreign firm gains access to breakthrough production technologies as it builds in-house expertise. In the long run, however, with access to the technological know-how, the foreign firm may eventually develop a better commercial product using the technologies it licensed from the small U.S. firm, thus making the original product obsolete.

Industry representatives, on the other hand, did not express concern about the long-run implications of such business alliances. They considered business alliances with large foreign corporations as an indispensable means for small U.S. biotechnology firms to obtain needed financing and international market access. They noted that many biotechnology firms are immersed in research, testing, and/or production phases and are seeking investments to help sustain these operations. Whether the capital is foreign or domestic is considered secondary to the matter of corporate survival.

Industry representatives expressed more concern about technologies being transferred overseas through means other than foreign alliances with U.S. biotechnology firms. Some cited foreign competitors' use of U.S. research centers and academic institutions as a means to circumvent domestic firms and obtain access to commercially strategic technologies. This circumvention may occur through foreign funding of U.S. research centers or through foreign scientists participating in U.S.-sponsored research projects.

Other industry representatives noted that the United States may be losing innovative technologies in the biotechnology sector due to differences in international patenting systems. Some industry representatives felt that small U.S. biotechnology firms may be forced into working with foreign partners to protect innovations from being dispersed or stolen in

unfamiliar patenting systems. Industry analysts agreed that more rigorous protection and enforcement of intellectual property rights at home and abroad are needed for small U.S. biotechnology firms to fully realize revenues when they license technology to large, established firms.

Evaluation of Concerns

Because there are relatively few commercial biotechnology products currently on the market, it is too early to assess whether foreign competitors will reap substantial economic benefits from commercializing basic U.S. biotechnologies. However, present trends suggest a net outward flow of biotechnologies, particularly to Japan. In addition, major foreign governments, in contrast to the United States, have instituted policies to promote the commercial development of biotechnology.

Indications of Asymmetrical Technology Flows

Most government, industry, and academic officials we contacted agreed that there are indications of an asymmetrical flow of biotechnologies between the United States and Japan. While there are little hard data available to substantiate or refute this claim, the nature of U.S./Japanese business alliances in biotechnology is used as an indicative measure. According to one academic expert, there are far more U.S.-developed biotechnologies licensed to Japanese firms than Japanese-developed biotechnologies licensed to U.S. firms.

Additionally, the majority of U.S./Japanese business alliances in biotechnology are between small, innovative U.S. biotechnology firms and large, diversified Japanese firms. Small U.S. biotechnology firms are typically technologically rich but capital poor, whereas the participating Japanese firms are typically cash rich and actively seeking access to innovative biotechnologies. Thus, as such alliances increase, it appears likely that large Japanese corporations will acquire access to intellectual properties in the U.S. biotechnology sector.

A commanding lead in basic science does not ensure a commanding lead in the commercialization of or return on that science. While small, entrepreneurial U.S. biotechnology firms have been the dominant source of innovation, many encounter significant hurdles in getting research out of the laboratories and products onto the market. The majority of biotechnology-based products remain in development and testing and are, therefore, not generating substantial revenues. One industry association recently estimated that only 9 biotechnology-based drugs and vaccines have reached the market, while approximately 97 such products are in various stages of clinical testing. In the meantime, most small U.S.

biotechnology firms must maintain high operational and R&D costs. As a result, they have increasingly turned to alternate sources of capital—namely business alliances with larger corporations, whether domestic or foreign.

U.S. and Foreign Commercialization Efforts

Compared to foreign governments, the United States has not focused on the long-term commercial importance of biotechnology or on the desirability of tracking the direction of technology transfers. Although the U.S. government spends significantly more than foreign competitors in biotechnology-related research, the majority of these funds support basic research.

In contrast, major foreign governments have focused funding on developing applications and commercial products and have instituted policies to promote the commercial development of biotechnology. The Japanese government, for example, has specified biotechnology in addition to next-generation microelectronics and new materials as “basic technologies for future industries.” Through a coordinated national program to promote these “key” technologies, the Japanese government is implementing long-term policies directed towards collaborative research and coordinated industry activities.

The governments of Germany, France, and the United Kingdom have also targeted biotechnology as essential to national economic development and have implemented programs to encourage industrial innovation in biotechnology. Additionally, South Korea, Taiwan, and Singapore have established national biotechnology programs.

Conclusions

Biotechnology appears to have tremendous potential for commercial development and applications to other industries. The United States currently has a strong competitive position, particularly in research, but maintaining this position is not assured. Given the increasing level of foreign participation in the U.S. biotechnology sector, the apparent asymmetry of technology flows, and other countries’ targeted policies to promote their biotechnology sectors, the U.S. competitive edge in commercializing biotechnological innovation is in question.

Inadequacies in foreign investment data do not yet present a particular problem in this sector, because direct investment is a relatively minor part of overall foreign activity in this sector and is not the focus of most concern. Rather, foreign participation in the U.S. biotechnology sector is

mainly in the form of business alliances with small U.S. biotechnology firms.

From a U.S. public policy perspective, business alliances that transfer technology from entrepreneurial U.S. biotechnology firms to foreign corporations create a paradoxical problem. While meeting the short-term objectives of small U.S. biotechnology firms, these alliances also increase the likelihood that foreign competitors may reap the rewards from commercializing breakthrough biotechnologies developed in the United States. No government agency systematically follows the implications of foreign participation in the U.S. biotechnology sector for future U.S. commercial competitiveness.

Observations

Concern about increased levels of FDI in the U.S. economy reflects basic questions about how the United States benefits from what is generally described as a trend toward global interdependence.

At the heart of public uncertainty about FDI are questions about how FDI affects the U.S. economy and the commercial competitiveness of some sectors. Foreign ownership inherently means that key business decisions can be made overseas on such matters as investment, research, employment, and location; and questions necessarily arise about how foreign investors' economic interests converge with the economic interests of particular U.S. industry sectors and the nation as a whole. The U.S. government's position is that FDI links foreign investors' interests with continued U.S. economic strength. Some analysts are not so confident that FDI leads to a mutually beneficial interdependence in all industry sectors.

Resolving these uncertainties is not principally a matter of improving FDI data. Federal government data, supplemented by private sector information, are adequate in the four sectors we studied to identify trends in foreign activity that might pose concerns. The kinds of information needed to analyze concerns about particular FDI trends, however, are not the type to come from improved foreign investment data collection.

In the petroleum sector, for example, it is known that OPEC countries have invested in U.S. refining and marketing facilities. The difficult policy question is whether such a link enhances security of petroleum supplies or raises the risk of greater U.S. vulnerability to political changes in the Middle East. Analysis of this question, really, should be focused on finding ways to reduce the likelihood that OPEC countries would choose to exploit any perceived vulnerability and on reducing vulnerability by developing alternate energy sources. Indeed, for petroleum, it should be recognized that the basic issue is U.S. oil import dependence and that the potential for disruption exists regardless of FDI levels.

In banking, foreign investment trends and specific transactions can be identified, showing increased Japanese activity. What is not clear, however, is whether there is some future threshold of foreign ownership at which foreign-controlled banks could make basic lending decisions affecting the growth and direction of U.S. industry. The type of data needed for this analysis would be information relating, for example, to bank lending patterns and competitive behavior. In this sector, it should

be remembered, detailed data are available, and a regulatory and supervisory network is in place that can monitor and assess FDI developments.

Addressing public uncertainties about how the United States benefits from the trend toward an interdependent global economy, as illustrated by increasing FDI levels, requires more than improved FDI data. For some sectors, demonstrating the long-term benefits of foreign participation in the U.S. economy would involve close government attention to competitive conditions and technology transfers in certain sectors.

In the chemicals sector, the lack of concern about FDI appears to be associated with the U.S. industry's confidence that an open, global economy functions to the benefit of both the United States and foreign countries.

In the biotechnology sector, however, views differ on the consequences of increasing levels of foreign participation, particularly by Japanese firms. The basic concern is the possible transfer overseas of commercially strategic technologies and the implications for the U.S. industry's commercial competitiveness. Biotechnology industry representatives consider foreign capital an indispensable resource for small U.S. biotechnology firms. But government and industry analysts question whether short-term benefits from such investment will match the possible future costs resulting from transfers of core technologies and the profits associated with commercializing them. Answers to these questions would have to come from a close government focus on the direction of technology transfers and other competitive developments in sectors such as biotechnology. They would also have to include analysis of how U.S. industries are faring in their efforts to participate in other countries' economies.

The United States is experiencing the trend toward global interdependence in part because U.S. budget and trade deficits require foreign capital to finance them. As long as U.S. domestic savings fail to match federal budget deficits and private sector investment needs, foreign financing will be needed, and FDI will remain one element of foreign participation in the U.S. economy. To some extent, congressional and administration attention to the budget deficit can alleviate U.S. dependence on foreign capital. However, with a stronger U.S. economy, foreign firms are likely to continue to want to invest here, and a decline in the need for additional foreign capital in general may not necessarily affect FDI levels.

Policymakers seeking to increase public understanding of this trend toward increased FDI need to demonstrate that they are focusing on the

key concern—ensuring that U.S. industries and the nation overall will benefit from the global interdependence that FDI represents. Addressing this concern requires government attention to much more difficult issues than inadequacies in FDI data.

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