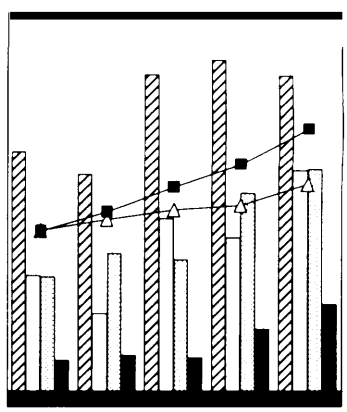
Globalization in Perspective 1

Many analysts and business executives talk about the globalization of commerce and technology as if it were an accomplished fact. And from the perspective of some companies, it may indeed appear to be so. Many multinational enterprises (MNEs) now deploy multiregional or even global marketing strategies. Some sell more abroad than they do at home. More and more MNEs source a significant share of their parts through international channels, and many have located major production facilities in foreign countries. A growing number of firms from different nations enter into strategic alliances to pool financial and technological resources, and to gain access to foreign markets. Foreign affiliates loom ever larger in host country economies, and are important to international trade as well.

Successful companies know that product design must follow consumer preference, and both vary from market to market around the world. These firms recognize that local markets require a local presence, which has led to wider distribution of the assets of many MNEs. But local presence, even manufacturing, does not often translate into local technology development, which has remained—with a few important exceptions—stubbornly resistant to the globalization phenomenon. Clearly, the realities of doing business at the level of the firm tell only part of the globalization story.



Multinational firms have developed their foreign operations at very different rates and in varying degrees. This is evident in both historical and functional terms. After WWII U.S. firms were the first to venture abroad in large numbers, followed a decade later by their European counterparts. Japanese and other East Asian companies are, by comparison, relative newcomers to multinational commerce.

BOX 1-1: Types of Multinational Enterprises (MNEs)

For purposes of this assessment, OTA has identified and analyzed six principal types of MNEs. They are not to intended be rigid or mutually exclusive, but instead to capture the major differences relevant to the development of public policy. The six types of MNEs listed below are described in greater detail in chapter 2 of the first report of this assessment.

Resource-based MNEs organize around the extraction of natural resources, or agricultural products, and their processing for sale in the industrialized countries.

Export-oriented MNEs maintain the preponderance of their production and R&D base in their domestic market. They export high value-added products to other national markets, often through intrafirm trade. Typically, they establish final assembly, service, support, sales, and marketing operations abroad.

Regional MNEs optimize their activities, including production, around a regional market but have not yet achieved significant sales and operations outside their region of origin.

Transnational MNEs have begun to locate production facilities globally, but still depend heavily on their domestic market and operations for their competitive position, economies of scale and scope, key production operations, and R&D.

Global MNEs replicate much of the full value-added chain, including substantial product development and research operations, in more than one national or regional market.

Distributed MNEs optimize the location of their sourcing, production, and R&D on a global basis.

SOURCE: Office of Technology Assessment, 1993.

In addition, multinational firms can take many different forms and are highly flexible business organizations. In the first report of this assessment, OTA identified six principal types of MNEs (see box 1-1).[1] Because of these characteristics, multinationals are sensitive both to market factors and government influence.

Throughout this report, the term MNE is used in a generic sense, that is, the word "enterprise" does not imply that companies have grown beyond the formal and legal structures of the national jurisdictions in which they are incorporated. In addition, this report does not deal directly with labor and wage questions related to the investments or disinvestments of multinationals from one country to another. OTA has addressed these issues in its report on U.S. trade with Mexico.*

FINDING 1: MULTINATIONALS DEVELOP CORE TECHNOLOGY AT HOME[3]

World economic integration is occurring at uneven rates, both in relation to the core technology operations of MNEs and with respect to overall investment and trade relations among nations. Unlike other principal activities of multinational firms, research and technology development tends to stay at home; it remains largely centralized, even in the most internationalized industries. One implication of this finding is that the United

[1] U.S. Congress, Office of Technology Assessment, *Multinationals and the National Interest: Playing by Different* Rules, OTA-ITE-569 (Washington, DC: U.S. Government Printing Office, September 1993). The report is summarized in appendix B.

[2] U.S. Congress, Office of Technology Assessment, U. S.- *Mexico Trade: Pulling Together or Pulling Apart?,* OTA-ITE-545 (Washington, DC: U.S. Government Printing Office, October 1992), passim.

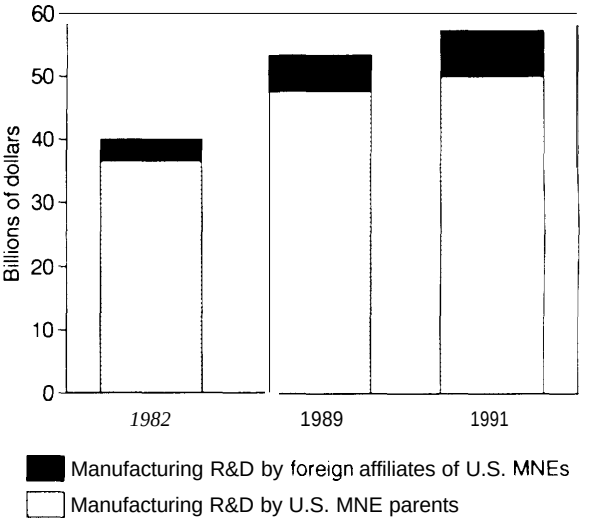
[3] This tinding is based on the analysis in Part II.

States has a clear interest in the success of U. S.-based firms, both at home and abroad, in proportion to the commitment that these firms make to the U.S. technology base. More technology innovation and development in the United States can translate into jobs for Americans, and it is in the technology-intensive industrial sectors where the higher-skill, higher-wage jobs of the future are likely to reside. To the extent that foreign-based companies contribute to U.S. technology development, the United States has a direct interest in their success as well.

Overseas research and technology development by foreign affiliates has increased significantly in the past decade, and in some sectors, such as chemicals, pharmaceuticals, and electronics, contributes substantially to the local technology base. It is, however, still concentrated in product design and customization, and pales in comparison to the home-base R&D activities of MNEs. As chapter 3 of this report shows, even though U.S.-based firms trade more technology with their foreign affiliates than do Japanese or European companies, R&D conducted by foreign affiliates of U.S.-based firms is still quite limited compared to technology development at home.

In the critical area of manufacturing technology,[4] for example, U.S.-based MNEs have consistently conducted most of their research and technology development in the United States. As figure 1-1 shows, in the decade 1982-91, total manufacturing R&D of U.S.-based MNEs increased by 43.2 percent. In 1991, the last year for which these figures are available, R&D conducted by majority-owned foreign affiliates of U.S. MNEs reached only 12.7 percent of the total, up from 8.7 percent in 1982.5 In addition, the

FIGURE 1-1: Manufacturing R&D of U.S.-Based MNEs (constant 1987 dollars)



SOURCE: OTA based on data in U S Department of Commerce Bureau of Economic Analysis Survey of *Current Business* 73(7) 44, table 5, July 1993 (hereafter cited as BEA SCB)

manufacturing R&D intensity of U.S.-based parent groups—that is, R&D expenditures as a percentage of total sales—is substantially higher than that of their foreign subsidiaries. In 1991, for example, it was 2.1 percent for U.S. parents, compared to 0.8 percent for their majority-owned foreign affiliates.[6]

R&D spending in the United States by affiliates of foreign-based MNEs has accounted for a small but rapidly rising share of all U.S. R&D. Between 1982 and 1992, total business R&D spending in the United States grew by 38 percent in real terms, from $48.6 to $67.0 bill ion.[7] During the same pe-

[4] For a comprehensive assessment of U.S. manufacturing technology, see U.S. Congress, Office of Technology Assessment, *Making Things Better: Competing in Manufacturing*, OTA-ITE-443 (Washington, DC: U.S. Government Printing Office, February 1990).

[5] A majority-owned foreign affiliate is a subsidiary company of which the foreign parent company owns more than 50 percent.

[6] U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington DC: July1993), table 5, p. 44 and table 7, p. 46.

[7] In constant 1987 dollars. National Science Board, *Science and Engineering Indicators—1993*, (Washington, DC: U.S. Government Printing office, 1993), NSB 93-1, appendix table 4-4, p. 333.

riod, R&D expenditures by foreign affiliates in the United States grew by 138 percent, from $4.5 to $10.7 billion.[8] Much of this $6.2 billion increase, however, resulted from unusually heavy foreign acquisitions of U.S. firms in the late 1980s, as opposed to higher spending levels by existing foreign-owned companies in the United States.[9] Because much of the surge of FDI in the late 1980s was concentrated in high-technology industries, the manufacturing R&D intensity of foreign affiliates in the United States approaches that of the national average, 2.5 and 2.8, respectively. 10

Multinationals account for a large share of all U.S. technology trade: on average, 79 percent of exports and 67 percent of imports between 1986 and 1992. Moreover, 97 percent of all technology exported by MNEs flows from U.S. parents to their affiliates overseas, and 91 percent of all technology imported by MNEs flows from overseas parents to their U.S. subsidiaries (see figures 1-2 and 1-3[11]). These figures indicate that, in the U.S. case, the majority of international technology trade is contained within multinational networks of affiliated companies. Foreign affiliates may contribute to the technology base of host nations in selected sectors, but across the Triad they are still a small part of it. [12] This finding was confirmed in numerous interviews conducted by OTA in Europe, Japan, and the United States.

In addition, distinct patterns of technology investment are associated with firms of different nations. Since 1989, Japanese spending on business R&D has exceeded that of the United States and Europe as a percentage of gross domestic product. Over the past decade, Japanese firms increased their R&D spending by an average of 8.0 percent each year, as compared to 3.9 percent for the United States and 1.6,3.9, and 4.6 percent respectively for the United Kingdom, Germany, and France. Firms across the Triad decreased their R&D spending in response to the recession of the early 1990s. [13]

These patterns, however, do not hold for the affiliates of foreign-based firms in the United States. European affiliates tend to spend more on R&D in the United States and exhibit higher levels of R&D spending as a percentage of their sales than do their Japanese counterparts. As figure 1-4 shows, R&D intensity for German affiliates is very high, probably reflecting the concentration of German investments in R&D-intensive industries such as chemicals and pharmaceuticals. At the other end of the spectrum, the very low R&D in-

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* In constant 1987 dollars. Data from U.S. Department of Commerce, BEA, *Survey of Current Business* (Washington, DC: May 1993), table 1, p. 89; and U.S. Department of Commerce, BEA, *Foreign Direct Investment in the United States: Preliminary 1992 Estimates* (Washington, DC: forthcoming, 1994); table H-3A.

9 U.S. Department of Commerce, BEA, *Foreign Direct Investment in the United States: An Update* (Washington, DC: U.S. Dept. of Commerce, June 1993), p. 70.

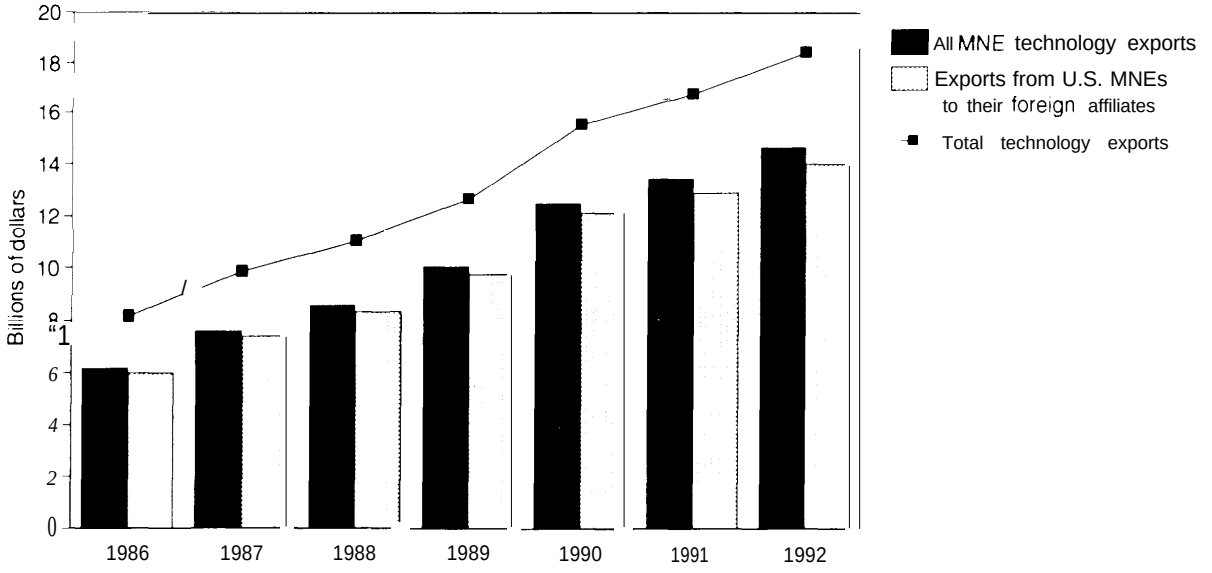
10 Ibid., p. 72. Across the advanced industrial nations, the R&D intensity of foreign affiliates tends to be much lower than the average for all manufacturing industries in the host country. One of the few exceptions is the United States, where the average R&D intensity of foreign manufacturing affiliates is driven up by the concentration of foreign investment in industries with high R&D intensity, such as pharmaceuticals, chemicals, and mechanical engineering. For a comparison of tbe R&D intensity of foreign affiliates in all sectors, see fig. 1-4. For an expanded discussion of R&D conducted by foreign affiliates in the United States, see ch. 4.

11 These figures are based on the $tech_{nol}O_{gy}$ balance of payments indicator, which measures international transactions in royalties and license fees. This indicator only approximates technology transfer for three reasons. First, the available U.S. data for royalties and license fees combines transactions of all forms of intellectual property, including industrial process technology, copyrights, trademarks, franchises, and rights to broadcast live events. Second, it is difficult to measure intellectual property traded between affiliated firms, since the value of affiliated transactions is not always determined on the open market. Tb ird, technology also can be transferred through a variety of channels that are not captured by this or any other reliable measure.

12 Throughout this report, the term "Triad" is used to denote the United States, Japan and the advanced industrial economies of Europe.

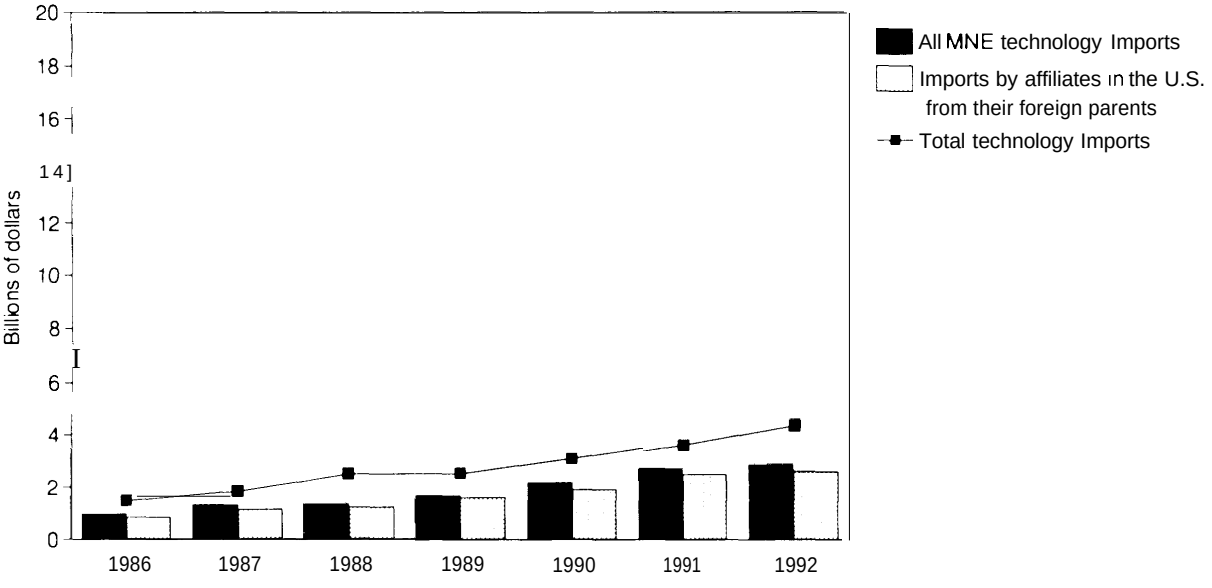
13 See figure 3-13 and accompany ing text in ch. 3.

FIGURE 1-2: MNEs and U.S. Technology Exports, 1986-1992 (constant 1987 dollars)



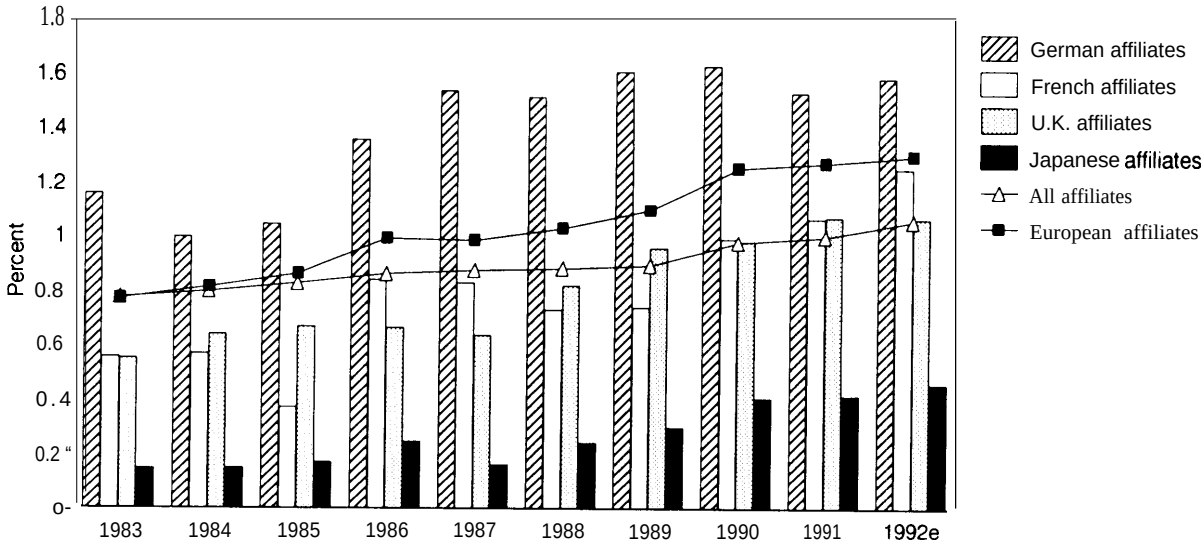
SOURCE OTA based on data in BEA *SCB* 73(9) 122 table 7, September 1993

FIGURE 1-3: MNEs and U.S. Technology Imports, 1986-1992 (constant 1987 dollars)



SOURCE OTA based on data in BEA *SCB* 73(9) 122, table 7 September 1993

FIGURE 1-4: R&D Intensity of Foreign Affiliates in the U.S. by Nationality of Ownership, 1983-1992



NOTES: R&D intensity measures total affiliate R&D expenditures as a percent of total sales, 1992 data are preliminary

SOURCE: OTA, based on data in U.S. Department of Commerce, Bureau of Economic Analysis, Foreign Direct investment in the United States Operations of U.S. Affiliates of Foreign Companies revised 1983-1991 estimates and preliminary 1992 estimates, (Washington, DC U S Government Printing Office, 1986-1994), tables E-4 and H-3B from 1992, tables A-6 and H-2 from 1987-1991, and tables 8 and H-6 from 1980-1986 (hereafter cited as BEA, *FDIUS)*

tensity of Japanese affiliates may reflect their propensity to invest less in manufacturing and more in wholesale trade (compare figures 1-8 and 1 -10).[14]

Multinational firms are critical to ensuring the health of the U.S. technology base. The most technologically sophisticated and economically significant sectors of the U.S. economy are now characterized by high degrees of international production, foreign direct investment, trade among affiliated companies, and complex forms of international financial and technological collaboration. Many of these sectors, such as semiconductors, electronics, chemicals, pharmaceuticals, aerospace, telecommunications, and autos, are also marked by increasingly high R&D costs. The location and character of innovative activity by MNEs significantly shapes the basic structure of competition and competitive advantage in these and related sectors.

While it is not wrong to speak of the global research and technology base of MNEs, it is certainly misleading. The data presented above and in Part II of this report suggest that technology is deeply rooted in national (or in the case of Europe, regional) concentrations or bases, with partial and company-specific interconnections. Although many fundamental technological innovations are pursued in several countries at the same time, or may be licensed from one region to another, it is not uncommon for a nation or even a firm to hold a leadership position or even control an important technology. Moreover, the cost of retrieving innovation leadership may be prohibitive once it is lost. The implication for public policy is that the national technology base must be well-main-

14 See the section on R&D by foreign affiliates in the United States in part II, ch. 4.

tained on a continuous basis. In this view, U.S. technology programs, such as the Partnership for a New Generation of Vehicles (PNGV) and the Advanced Technology Program (ATP), may be necessary to ensure that critical capabilities continue to reside in the U.S. technology base.

Some analysts take a different view. They argue that programs like the ATP and PNGV are subsidies to U.S.-based firms, subsidies that put government managers in position to pick winners and losers. They are further concerned that, if successful, such programs might cause foreign governments to increase their support of R&D, leading to a cycle of increasing government involvement in technology innovation, a process that they believe will ultimately make American firms less competitive than they might otherwise have been.

Advocates of this perspective assert that some technology programs discriminate against the U.S. affiliates of foreign-based MNEs, and that they might undermine U.S. negotiators who seek to convince other countries to open their markets to U.S. exports and direct investment (see box 1-2). On the other hand, there is no reason that U.S. technology programs cannot be conducted so that they are consistent with the principle of national treatment and the GAIT Treaty of December 1993.[15] (This issue is discussed in the section on Policy Issues and Options in chapter 2.)

While it is possible to conceive of a more cohesive and global technology base in the future, its development would require far more international economic integration and more extensive political cooperation. At a minimum, substantial reduction in or removal of the asymmetries in national patterns of direct investment, trade, finance, and corporate governance would be a prerequisite. [16] In the absence of rapid convergence in these areas, it is likely that nations will continue working to enhance the national technology assets on which industrial competitiveness rests. In the United States, such steps include the proliferation of government-industry cooperative technology development programs such as the ATP, the PNGV, the Technology Reinvestment Project, the Department of Energy cooperative R&D agreements (CRADAS), and the Manufacturing Extension Partnerships, among others. (These developments are discussed in chapter 2 in the section on Policy Issues and Options.)

U.S. government support for technology development has favored participation by U.S.-based companies over the affiliates of foreign-based firms. Some U.S. technology programs exclude foreign companies, such as the PNGV, which is a partnership between Ford, Chrysler, General Motors, and the U.S. government. [17] More often, the principle of conditional national treatment (CNT) has been applied in legislative language that permits participation by U.S. affiliates of foreign firms only on the condition that their countries of origin extend reciprocal access for U.S. MNEs. [18] In Europe, CNT has taken the form of requiring firms to establish local R&D operations. This has, in effect, largely limited participation in EU programs to European-based companies and a few foreign firms with R&D operations in Europe.

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15 Under the new terns established by the GATT Agreement on Subsidies and Countervailing Measures negotiated during the Uruguay Round, government research subsidies are permitted for up to 75 percent of the costs of industrial research (defined as new knowledge for developing new or substantially improved products, processes, or services), and up to 50 percent of the costs of precompetitive development activity (defined as applied research up the point of a first, noncommercial prototype).

16 These differences are described in detail in the first report of this assessment, *Multinationals and the National Interest*, op.cit., footnote 1.

17 The White House, Office of the Press Secretary, "A New Partnership for Cars of the Future, Ensuring L'. S. Leadership, Expanding Economic Opportunity, Preserving Jobs, Protecting the Environment," Sept. 29, 1993, p. 1.

18 Such provisions are included in the U.S. Federal Technology Transfer Act of] 986, Omnibus Trade and Competitiveness Act of 1988, Technology Preeminence Act of 1991 (Advanced Technology Program), and others.

BOX 1-2: The Technology Policy Debate

Although technology policy encompasses a number of relatively noncontroversial missions, such as federal support for basic science research, the Clinton Administration's effort to focus federal technology policy on commercial technology development has sparked considerable debate.

Critics of the new technology policy argue that market forces—not governments—should determine the location and rate of innovation in the economy. This position is based on mainstream economic theory, which holds that market mechanisms assure the most efficient allocation of resources throughout the economy. Deviations from the market—such as R&D subsidies—distort investment and consumption incentives, and consequently allocate resources to less productive sectors of the economy. In addition, government intervention introduces interest group pressures and other political factors that can obscure market signals and redirect national resources along the lines of political influence.

Critics maintain that R&D subsidies tend to violate the spirit of U.S. economic policy, which has long sought to extend the principle of national treatment throughout the international economy. According to this view, governments typically use subsidies to favor domestic over foreign firms, which creates unfair terms of competition. If the United States makes technology policy an important component of national economic strategy, other nations might follow suit, which could introduce an alternative channel for industrial policy and perhaps even ignite an international R&D subsidies war.

Advocates of the new technology policy argue that markets sometimes fail to allocate resources optimally, and in particular that market failures in innovation can lead to underinvestment in critical technologies. In addition, other governments frequently intervene in markets, which has led to the development of serious foreign competition in industries where the United States formerly held a dominant position, such as commercial aircraft, communications satellites, computers, semiconductors, and automobiles.

Those who favor a commercial technology strategy assert that government policy can and should be used to correct market failures that affect national technology development. From this perspective, markets typically do not account for technological spillovers from new and/or technology-intensive industries. Innovators often lose part of the returns from their investments in new technology, because some of the benefits accrue to imitators and/or society at large. Under these circumstances, selective government subsidies can be used to offset the appropriation problem and provide a stronger incentive to innovate, which is most desirable when the technological spillovers constitute a distinct public good. Moreover, advocates suggest that firms, not governments, can take the lead role in steering the innovation process, especially in projects where industry puts up at least 50 percent of the funds.

These competing positions are well illustrated by the recent debate over the Clinton Administration's Partnership for a New Generation of Vehicles (PNGV), sometimes called the Clean Car Initiative. Critics maintain that the government cannot predict the future course of automotive technology, and that the program merely subsidizes the Big Three automotive producers at the expense of other potential innovators. Moreover, because it excludes foreign automotive producers, the PNGV violates the principle of national treatment and encourages other nations to do the same.

Proponents of the PNGV maintain that the program uses taxpayer revenues to generate a public good that would not be provided by the market alone. They argue that, because the market does not adequately value or price the public's interest in clean air and reduced dependence on fossil fuels, innovators will not have sufficient incentive to make the enormous investments associated with clean automotive technologies. Consequently they contend that the government must push the market and provide additional incentives for firms to invest in these technologies.

(CNT is discussed at the end of the first policy section in chapter 2.)

FINDING 2: TRADE FOLLOWS INVESTMENT IN THE 1990s[19]

Governments understand that the health of the national technology base is related not just to R&D spending, but also to the strategic investment behavior of companies, especially MNEs. Such investment increasingly crosses national borders. Since 1980, the world stock of foreign direct investment (FDI) has grown by over a factor of four, accelerating dramatically after the Plaza Accord in 1985.20 By 1992, the global stock of foreign direct investment reached approximately $2.0 trillion.[21] This surge of investment transformed the world economy and assisted exports in many sectors. Rather than substituting locally produced goods and services for imports, investment augmented and created trade, often through international transfers of merchandise within networks of foreign affiliates and their parent groups, i.e., intrafirm trade (IFT). The flow of FDI to the United States decreased significantly in the 1990s, but the existing stock of foreign investment continues to grow.

U.S. affiliates of foreign-based companies account for a substantial portion of U.S. merchandise trade and the greatest share of the U.S. merchandise trade deficit (see figure 1-5).22 In 1982, the total merchandise trade deficit was $30.2 billion; of that, U.S.-based firms accounted for $6.1 billion, compared to $24.1 billion for U.S. affiliates of foreign-based MNEs. In 1986, both U.S.-based firms and foreign affiliates in the United States ran substantial deficits, $73.0 and $83.2 billion respectively. Since that time, the trade balance of U.S.-based firms improved steadily to reach a surplus of $11.9 billion in 1991 and a deficit of $6.1 billion in 1992. The trade deficit of foreign affiliates in the United States, however, remained substantial, at $72.1 and $70.7 billion in 1991 and 1992 respectively.[23]

This pattern does not mean that foreign affiliates are themselves responsible for the U.S. merchandise trade deficit. That deficit is affected by a range of factors, including exchange rates, variations in national growth and productivity rates, and different rates of domestic savings and investment. Moreover, a portion of what foreign affiliates import is used for the production of goods that might otherwise have been produced entirely

19 This finding is based on the analysis in Part 111.

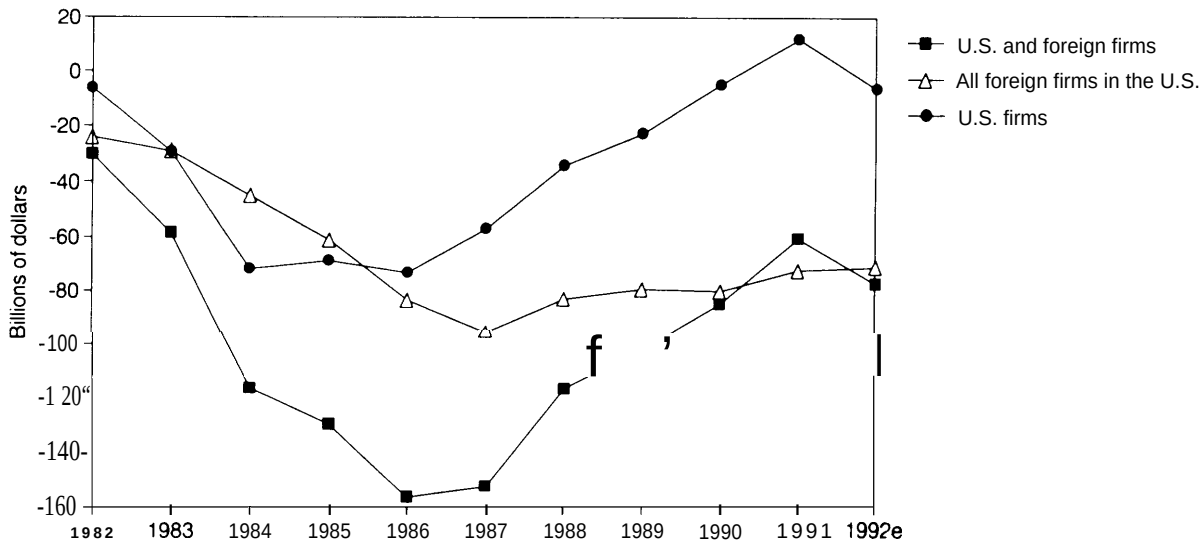
20 The Plaza Accord refers to an agreement reached at the Plaza Hotel in New York in 1985, in which the finance ministers of the major industrial nations agreed to corrdinate a devaluation of the dollar against other major currencies.

21 United Nations, *World Investment Report 1993: Translational Corporations and Integrated International Production (NY:* United Nations, 1993), p.1.

22 Part of the discussion and several of the figures in this chapter concentrate on merchandise trade as a relevant measure of multinational activity. Merchandise tradecovers manufacturedgoods, wholesale trade, agricultural products, and raw materials. It does not include services, a fast-growing sector of international trade where the United States ran a trade surplus of $61 billion in 1992. OTA is currently conducting a separate assessment of the service sector in the U.S. economy. See also U.S. Congress, Office of Technology Assessment, *Trade in Services: Exports and ForeignRevenues*, OTA-ITE-316 (Washington, DC: U.S. Government Printing Office, September 1986), and U.S. Congress, Office of Technology Assessment, *International Competition in Services: Banking, Building, Software, Know-How*, OTA-ITE-328 (Washington, DC: U.S. Government Printing Office, July 1987). Other measures, such as the current account and the capital account, provide a more comprehensive picture of international flows of goods, services, and capital, but they are less directly tied to the health of the U.S. technology base and MNE activity, the principal subjects of this assessment.

23 These trade data are expressed in constant 1987 dollars, based on data provided in Department of Commerce, BEA, *Survey of Current Business*, (Washington, DC: October 1993), p. 53, table 1.

FIGURE 1-5: U.S. Merchandise Trade Balance, 1982-1992 (constant 1987 dollars)



NOTE: 1992 data are preliminary

SOURCE: Adapted from BEA, SCB 73(10) 54, table 1, October 1993, BEA, SCB 73(3) 90-91, table 2, March 1993, BEA, SC/3 74(3) 68-69, table 2, March 1994, BEA *FD/US,* table G-3 (1982-1986), and table G-1 (1987-1992)

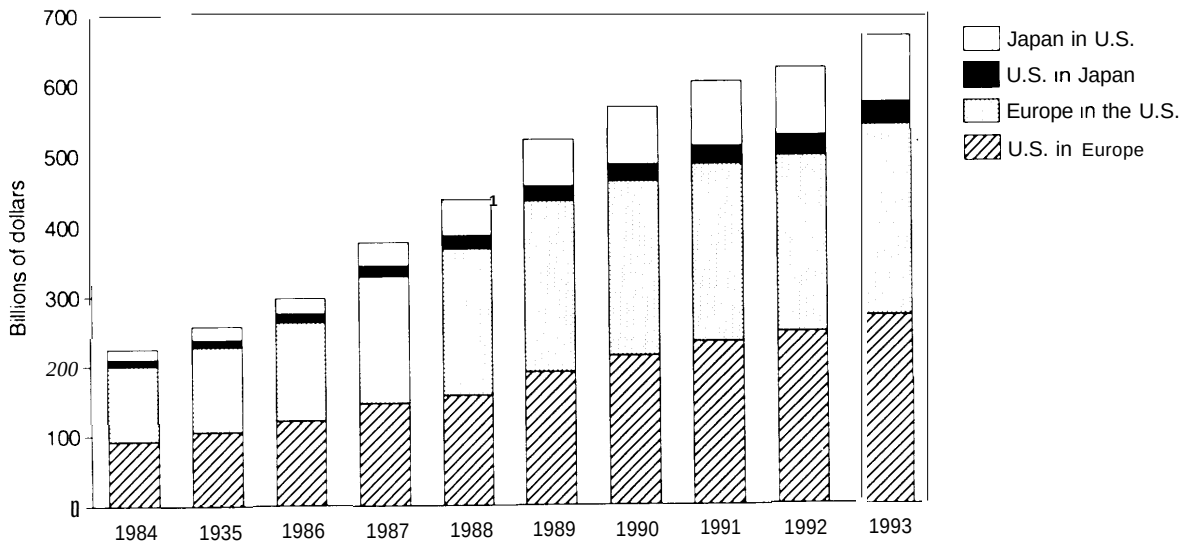
abroad. Nevertheless, the data indicate that foreign affiliates have afar stronger propensity to import than do U.S. businesses.[24] Further analysis indicates that much of the trade by affiliates is conducted as intrafirm trade within their own MNE networks, and that most intrafirm trade flows from parent groups to their overseas affiliates.

As international trade and investment expanded throughout the 1970s and 1980s, intrafirm trade increased in tandem, but it did not do so evenly across the Triad. International trade among affiliated firms has tended to reflect the balance of investment between the United States and its respective trading partners (see figure 1-6). Where investment is relatively well-balanced, as in the U.S.-Europe case, IFT has tended to follow suit. U.S.-based MNEs have transferred roughly the same amount of merchandise to their European affiliates as European-based MNEs have to their affiliates in the United States. Similarly, although the volume is much smaller, affiliates in Europe and in the United States transfer about the same amount of merchandise to their foreign-based parents (see figure 1 -7). U.S.-European intrafirm trade has been relatively symmetrical over the past decade, even as it has grown as a percentage of all trade. Between 1983 and 1992, IFT accounted for an average of 43 percent of U.S.-Europe merchandise trade.[25] Of that IFT, 43 percent was con-

[24] Since 1988, the ratio of imports to exports for foreign affiliates in the United States has been about double that of U.S. businesses. In 1991, affiliates' imports exceeded their exports by *80* percent. See Ibid., p. 54.

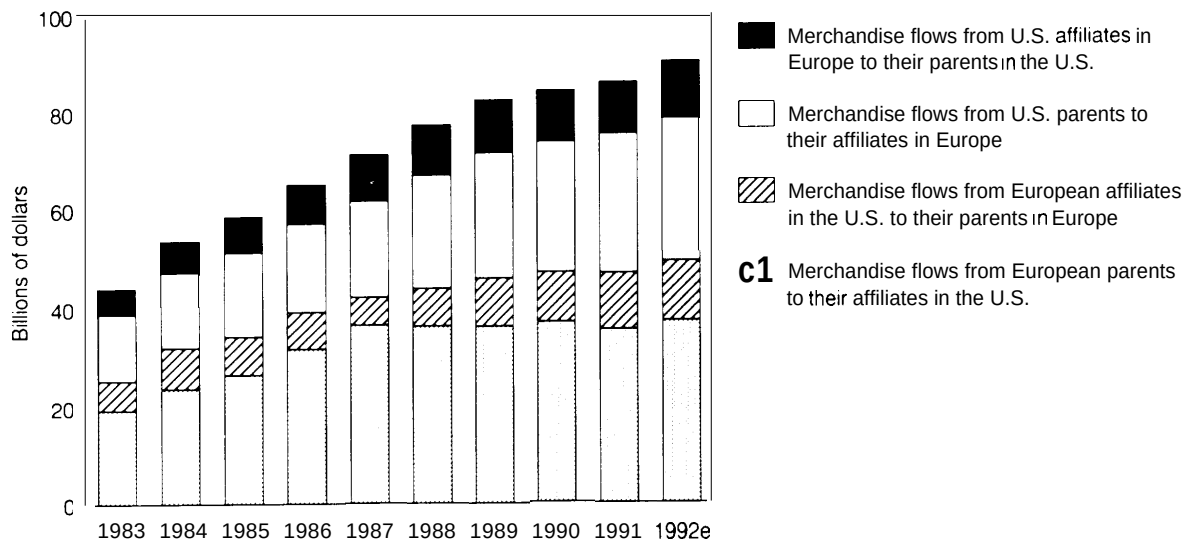
[25] Department of Commerce, BEA, *U.S. Direct Investment Abroad* (Washington, DC: 1983-1991 issues); Department of Commerce, BEA, *Foreign Direct Investment in the United States* (Washington, DC: 1983-1991 issues); Department of Commerce, BEA, *Survey of Current Business*, (Washington, DC: June 1993), table 2, p. 78.

FIGURE 1-6: Total Direct Investment Positions: U.S.-Europe and U.S.-Japan, 1984-1993 (historical cost)



SOURCE OTA. based on data in BEA, *SCB* 73(7) 65-6797-100, July 1993, 71 (8) 51-54,86-88, August 1991 69(8) 52-53,67-69 August 1989 and 77(8) 63-65 90, August 1987 and U S Department of Commerce News, " press release, June 28, 1994, tables 2 and 3 (hereafter cited as USDOC press release)

FIGURE 1-7: Volume and Direction of U.S.-European Intrafirm Trade, 1983-1992 (constant 1987 dollars)



NOTE: 1992 data are preliminary

SOURCE: OTA based on data in BEA *FDIUS* table G-4(1983-1986) and table G-2 (1987-1992), U S Department of Commerce, Bureau of Economic Analysis *U.S. Direct Investment Abroad Operations of U S Parent Companies and their Foreign Affiliates* revised 1983-1991 estimates (Washington DC U S Government Printing Office 1986-1994) tables 50 in 1983-1988 and Ill H 1 m 1989-1991 (hereafter cited as BEA *USDIA)* BEA, SCB 73(6): 78 table 2 June 1993

ducted by U.S.-based MNEs and 57 percent by European-based MNEs

In the 1980s, the U.S.-European investment relationship was also relatively well balanced in scale and composition, and in recent years has stabilized at nearly equal levels for total investment. As figures 1-8 and 1-9 indicate, the largest share of investment has been in manufacturing, both for Europe in the United States and for the United States in Europe. Moreover, in both cases, manufacturing and wholesale trade together account for about half of all direct investment.

With respect to the U.S.-Japan relationship, however, broad differences persist in the scale and composition of Japanese investment in the United States as compared to U.S. direct investment in Japan. Japanese investment in the United States exceeds U.S. investment in Japan by a factor of 3.1 to 1 and it is far more concentrated in wholesale operations (and less concentrated in manufacturing) than is direct investment between the United States and Europe (see figures 1-8 through 1-1 1). As U.S. FDI grew in the 1980s, U.S. direct investment in Japan remained disproportionately small (see figure 1-6).

Compared to Europe, U.S. intrafirm trade with Japan displays anomalies. First, it comprises a much larger part, 71 percent on average between 1983-1992, of all U.S.-Japan merchandise trade.[26] Second, over the same period Japanese MNEs and their affiliates conducted an average of 92 percent of all U.S.-Japan intrafirm trade (compare figures 1-12 and 1-7). This asymmetry is even more pronounced than that associated with the bilateral U.S.-Japan imbalances in direct investment and merchandise trade, Taken together, these two statistics indicate that most U.S. trade with Japan takes place within and is dominated by affiliated networks of Japanese MNEs.

In this context, the U.S. trade deficit with Japan is linked with the bilateral imbalance in direct investment. As figure 1-13 shows, on average the U.S. intrafirm trade balance with Japan closely tracks the total MNE trade balance and, in most years, the overall merchandise trade balance. In part, the large-scale U.S. trade deficit with Japan in the 1980s can be explained by the high dollar-yen exchange rate, a decline in the growth rate of U.S. productivity, and higher Japanese rates of savings and investment. But its persistence into the 1990s, especially in light of the Plaza Accord and the prominent role of U.S.-Japan IFT, suggests that the relatively low level of direct investment in Japan is important. It is unlikely that the U.S. merchandise trade deficit with Japan will be corrected in the absence of substantial investment by U.S.-based firms in Japan.

Some analysts argue that Japanese investment in the United States looks very different from European investment because Japanese affiliates are relative newcomers to the American business community. They believe that, over time, the volume of Japanese intrafirm trade will diminish, reflecting an increase in the local sourcing of Japanese affiliates, as predicted by the FDI life cycle theory.[27] The data on this point are mixed. For example, Japanese auto transplants—which produce cars in the United States—report that their percentage of locally sourced parts has increased significantly in recent years (see figure 6-13 in chapter 6). On the other hand, a U.S. Customs Service audit of the Honda Corp. in 1990 concluded that the domestic content was considerably less than the company reported.[28] A further complicating factor is that 43 percent of all U.S. suppliers to the three largest automobile transplant producers (Toyota, Honda, and Nissan) are

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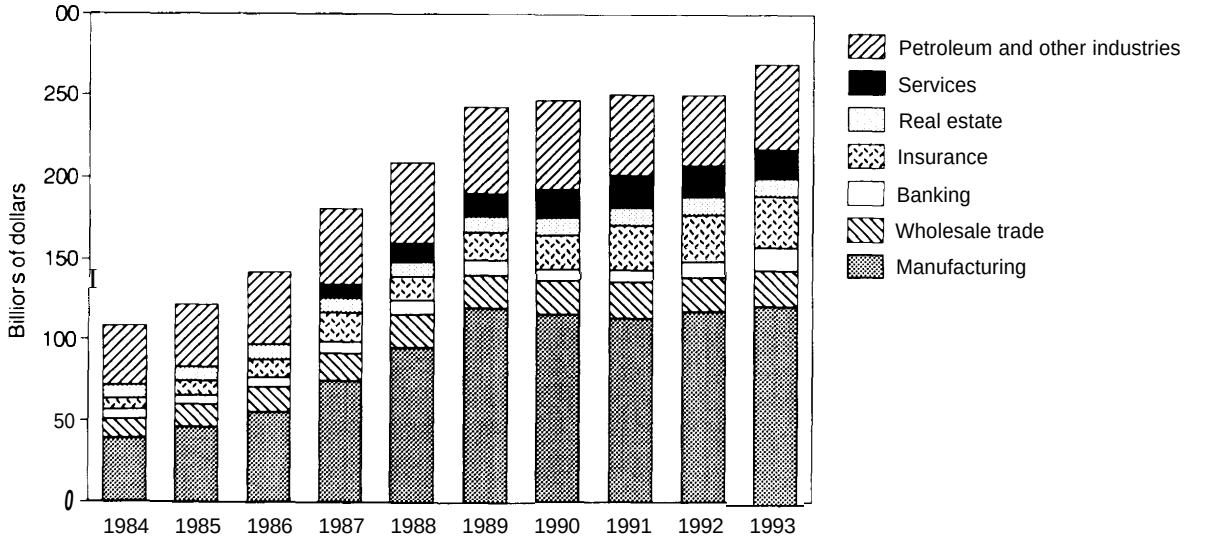
[26] Ibid.

[27] The life cycle theory of FDI is discussed in ch.6.

[28] U.S. Congress, OTA, *Multinational and the National Interest*, op. cit., footnote 1, pp. 96-97.

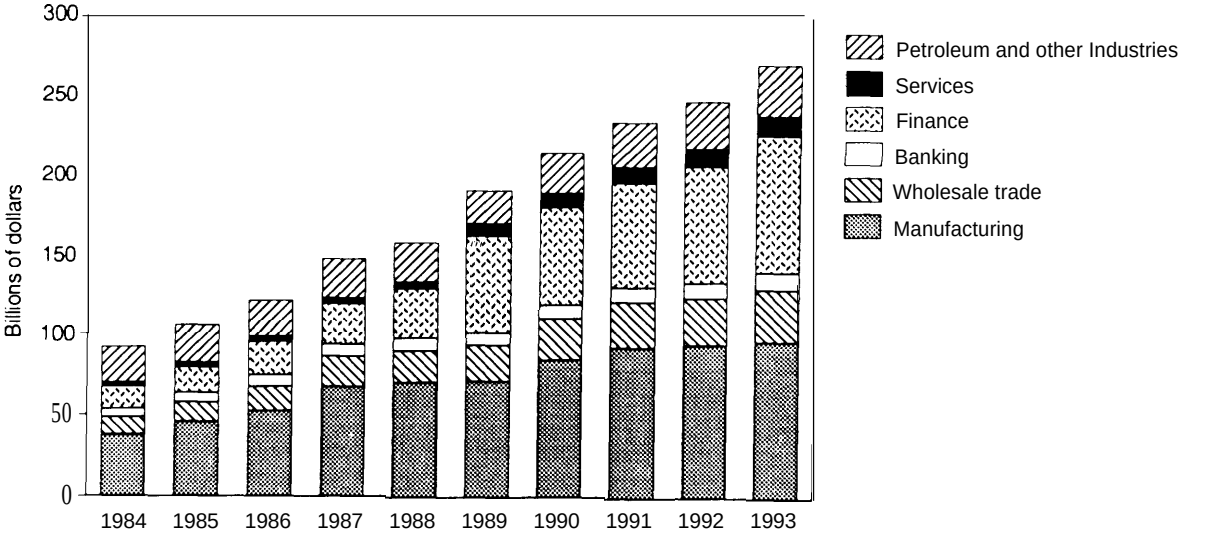
FIGURE 1-8: Europe's Direct Investment Position in the United States by Sector, 1984-1993 (historical cost)



NOTE BEA statistics on FDI Include data on services only since 1987

SOURCE OTA, based on data InBEASCf373(7) 65-67, July 1993, 71 (8) 51-54, August 1991, 69(8) 52-53, August 1989, and 77(8) 90, August 1987, USDOC press release, June 28, 1994, table 3

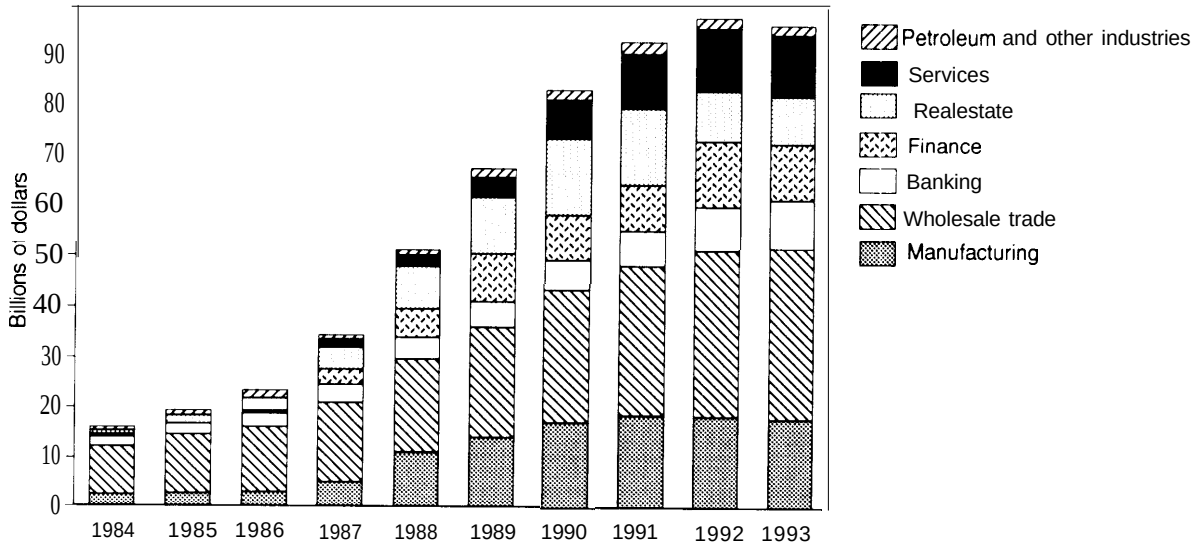
FIGURE 1-9: U.S. Direct Investment Position in Europe by Sector, 1984-1993 (historical cost)



NOTE BEA statistics on FDIposition include figures for services only since 1987

SOURCE OTA, based on data inBEA, *SCB* 73(7) 97-100, July 1993, 71 (8) 86-88, August 1991, 69(8) 67-69, August 1989, and 77(8) 63-65, August 1987, USDOC press release, June 28, 1994, table 2

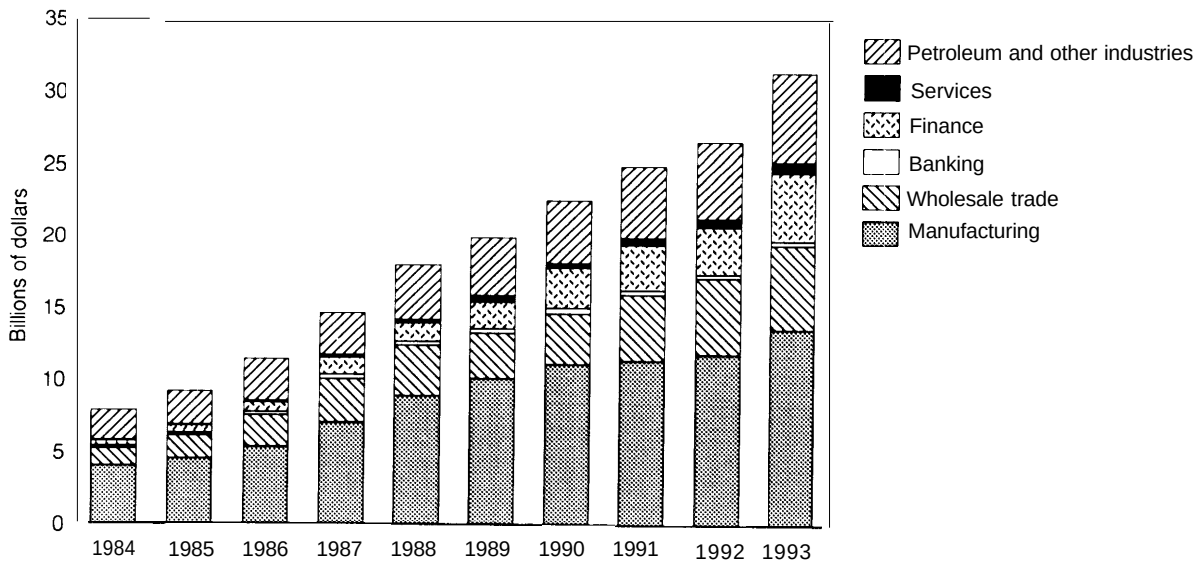
FIGURE 1-10: Japan's Direct Investment Position in the United States by Sector, 1984-1993 (historical cost)



NOTE BEA statistics on FDI include data on services only since 1987

SOURCE OTA based on data wBEA,SCf373(7) 65-67 July 1993,71 (8) 51-54, August 1991, 69(8) 52-53, August 1989, and 77(8) 90, August 1987, USDOC press release, June 28, 1994, table 3

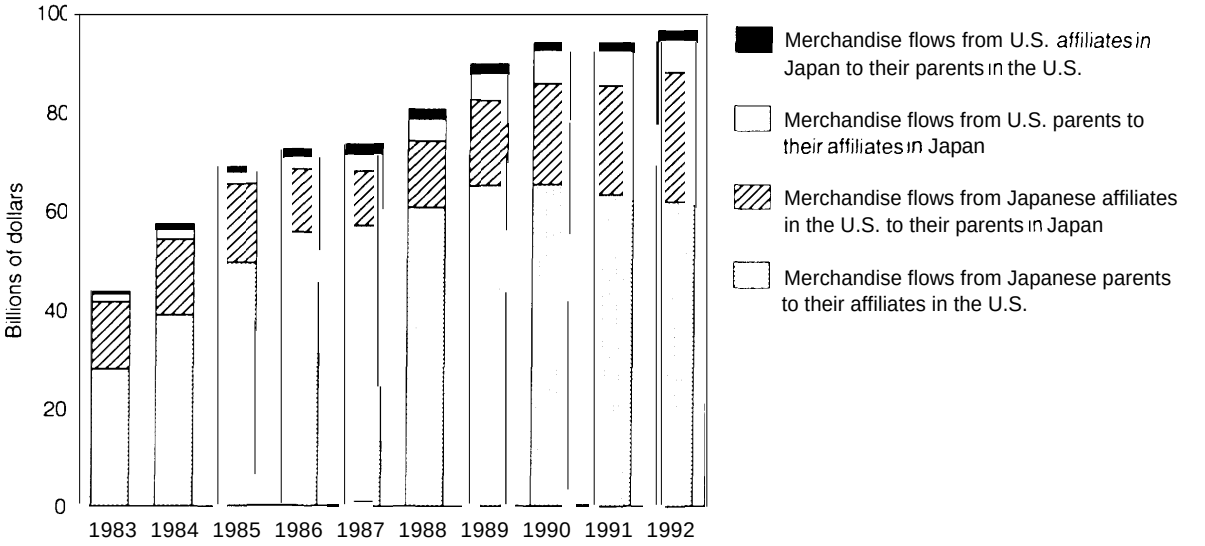
FIGURE 1-11: U.S. Direct Investment Position in Japan by Sector, 1984-1993 (historical cost)



NOTE BEA statistics on FDI position include figures for services only since 1987

SOURCE OTA, based on data in BEA *SCB* 73(7) 97-100 July 1993, 71 (8) 86-88, August 1991, 69(8) 67-69 August 1989, and 77(8) 63-65, August 1987 USDOC press release June 28, 1994 table 2

FIGURE 1-12: Volume and Direction of U.S.-Japanese Intrafirm Trade, 1983-1992 (constant 1987 dollars)



NOTE: 1992 data are preliminary

SOURCE: OTA based on data in BEA, *FDIUS,* tables G-4 (1983-1986), and G-2 (1987-1992), BEA *USDIA* tables 50 (1983-1988) and III H 1 (1989-1992) BEA, SCB 73(6) 78, table 2 June 1993

themselves affiliates of Japanese-based MNEs (see figure 1-14).

FINDING 3: CORPORATE GOVERNANCE AND FINANCE DIVERGE ACROSS THE TRIAD[29]

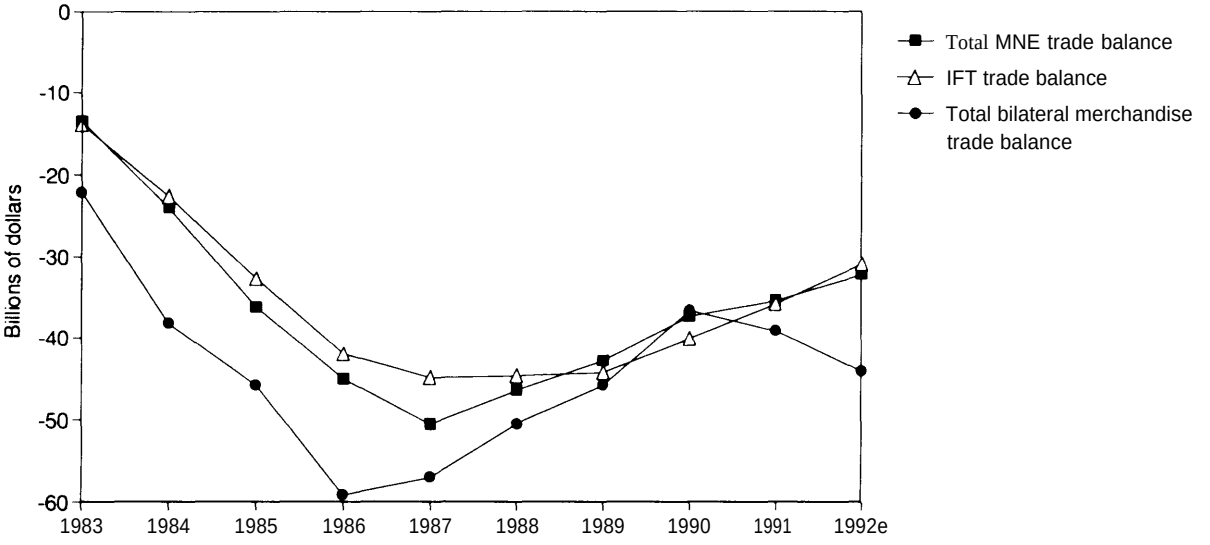
The strategic behavior of individual MNEs continues to be shaped by systems of corporate governance and long-term corporate financing that prevail in their home countries. Sometimes these systems provide firms with distinct advantages. Such advantages influence the investment decisions of MNEs, especially in long-term investments in plant, equipment, research, and technology development. Such decisions, in turn, are often the wellsprings of future technological innovation.

Both Japan and Germany, for example, employ systems of corporate governance and corporate finance that can create advantages for their firms in ways not entirely consistent with the principle of comparable market access. In both countries, nontransparent systems of corporate governance permit business behavior that would be questionable in the United States. Cartel-1ike arrangements legitimated by such systems, for example, are not uncommon. Such arrangements can undercut equality of competitive opportunity, especially for foreign firms.

In both Germany and Japan, cross-shareholding arrangements among companies and banks are more extensive than in the United States, and are particularly pronounced in Japan's major industrial groups (see table 1- 1). This can discourage direct investment by foreign-based firms and influence their market access, although it should be noted that Germany is far more receptive to foreign investment than is Japan. Such arrange-

[29] This finding is based on the analysis in Part IV

FIGURE 1-13: U.S. Merchandise Trade Balance with Japan, 1983-1992 (constant 1987 dollars)



NOTE: 1992 data are preliminary

SOURCE: OTA, based on data in BEA, *FDIUS,* tables G-4 (1983-1986) and G-2 (1987-1992), BEA, *USDIA,* tables 50 (1983-1988) and Ill H 1 (1989-1992), BEA, *SCB* 72(6) 88-90 table 2, June 1992, BEA, SCB 73(3) 90-91, table 2, March 1993, BEA, SCB 74(3) 68-69, table 2, March 1994

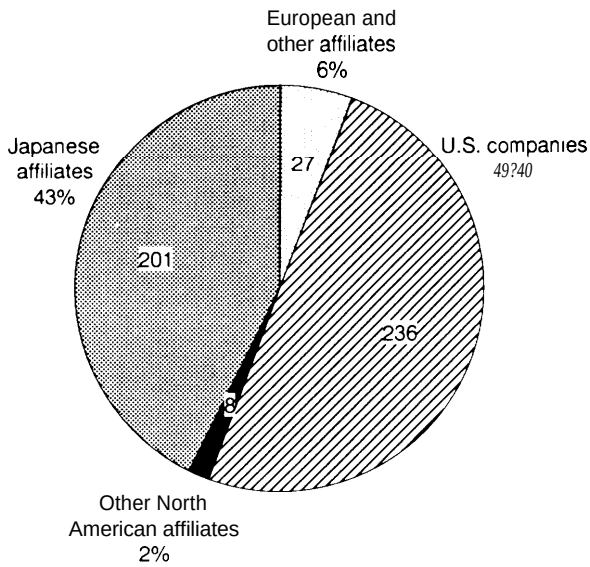
ments, together with the underdevelopment of markets for takeovers, have often discouraged foreign MNEs from entering Japan (and to a lesser extent, Germany) by way of acquisition.

In both countries, systems that provide long-term financing for home-based MNEs, which often include a prominent role for banks, enable those firms to take a broad view of their markets. This ability can put them in a better position than their U.S.-based competitors to concentrate on building market share and developing new technologies, rather than on short-term profitability. Especially with regard to Japan, such factors appear to be implicated in enduring competitiveness problems in parts of the U.S. technology base. They help to explain, for example, the collapse of domestic production by U.S.-based MNEs in the consumer electronics industry.

Even though U.S. capital markets are the largest, most decentralized, open, and transparent in the world, long-term capital is relatively more patient in Germany and Japan. Although the financial markets of the United States support novel technology ventures, in recent years they have often been less supportive of long-term investments in state-of-the-art manufacturing facilities required to sustain competitive advantage. Since the development and exploitation of next-generation technologies often depends on the existence of such facilities, this kind of shortsightedness can have enduring consequences for the national technology base.

Major Japanese and German MNEs remain firmly rooted in their home markets, despite recent, often painful restructuring. For many years, the stability of those roots bolstered their competitive position internationally. This was especially evident in such industrial sectors as consumer electronics, machine tools, advanced transportation systems, and parts of the chemicals industry. Today, Japan appears to be paying a price for the financial bubble and inflated real estate prices of the 1980s, while the costs of reunification are registering heavily on the German economy. In both

FIGURE 1-14: Suppliers to Japanese Automobile Transplants, by National Affiliation



NOTE: Number of firms given in brackets, total number = 472

SOURCE: OTA, based on data in The *ELM Guide to U.S. Automotive Sourcing* (East Lansing, MI ELM International Inc., 1992), and *The ELM Guide to Japanese Affiliated Suppliers in North America,* 4th ed. (East Lansing MI ELM International Inc., 1993)

cases, however, the singular national structures of corporate governance and finance that propelled the growth of their corporations in critical technology sectors are now helping those corporations adjust to new competitive realities. Those structures are themselves adjusting, but they are not being abandoned.

Key distinctions are likely to persist in the ways corporations govern themselves and raise long-term capital across the United States, Germany, and Japan. Expectations concerning their ultimate convergence should be kept modest. National patterns are embedded in deep social and political traditions, and they are being reinforced more than they are being eroded by turbulence in the global economy. For the foreseeable future, it is not unlikely that differences in national structures of corporate governance and long-term corporate financing will be the source of increasing friction in the more complex economic relationships evolving between the United States and its major trading and investing partners.

TABLE 1-1: Cross-Shareholding in Four Major Japanese Business Groups for Fiscal Year 1992 (in percent)

	Financial Institutions	Trading, Manufacturing, or Other
Mitsui	231	208
Mitsubishi	19.8	334
Sumitomo	242	306
Fuyo	23.6	172

NOTE: Data represents average percentage of stock held by group members or affiliated companiees Data IS for fiscal year 1992 ended March 31, 1993, and IS drawn from a survey conducted by Toyo Keizai of 2,131 firms listed on Japanese stock exchanges

SOURCE: Kigyo *Keiretsu Soran* (Tokyo Toyo Keizai Shinposha, 1994) pp. 44-50.