Foreign Direct Investment in U.S. Energy in 1998

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Contacts

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Foreign Direct Investment in U.S. Energy in 1998

This report presents an analysis of foreign direct investment in U.S. energy resources, assets, and companies in 1998.[1] It describes the role of foreign ownership in U.S. energy enterprises with respect to acquisitions and divestitures, cumulative net investment (including net loans), capital investment, energy operations, and financial performance. Additionally, since energy investments are made in a global context, the report examines patterns of direct investment in foreign energy enterprises by U.S.-based companies.

Foreign direct investment (FDI) is the ownership or control of 10 percent or more of the voting securities of a U.S. business enterprise by a foreign entity.[2] Foreign-affiliated companies (FDI affiliates) are U.S. business enterprises in which a foreign entity holds an ownership interest of 10 percent or more. An FDI-related transaction (FDI transaction) is a transaction directly or indirectly made by a foreign investor who has or gains an ownership interest of at least 10 percent in a U.S. business enterprise.

FDI is a measure of the continuing influence or control of foreign investors over the management and disposition of U.S. assets of production. However, holding 10 percent or more of a company often may, but does not necessarily, constitute control of that company.[3] The determination of control is a complex and often subjective process in which many factors other than the percentage of ownership must be considered.

Highlight: Major FDI-Related Transactions in U.S. Energy 1998

Acquisitions:

- British Petroleum completed its $53-billion merger with Amoco in December, creating BP Amoco, one of the world's top integrated energy companies in terms of assets and market capitalization.
- Shell Oil, a unit of Royal Dutch/ Shell, acquired Tejas Gas in a cash and stock transaction valued at $3 billion. The acquired assets include a 12,500-mile pipeline with 14.8-billion-cubic-feet-per-day throughput capacity.
- Kennecott Energy and Coal, subsidiary of Rio Tinto, United Kingdom, acquired Kerr- McGee's Jacobs Ranch Coal Mine located in Wyoming for $400 million.
- Nopec Geophysical, Oslo, Norway, gave up 11 million of its shares valued at $305 million in a merger with TGS-Calibre Geophysical of Houston. Both are oilfield services providers.

Divestitures:

- Tesoro Petroleum acquired BHP Petroleum America Refining, a unit of Australia's Broken Hill Proprietary, for a reported $312 million. The acquired assets comprise a 95,000 barrel-per-day refinery in Hawaii and 32 retail gasoline stations.
- Shell Oil sold its Anacortes, Washington, refinery to Tesoro Petroleum for $277 million. The disposition of the refinery was a pre-condition for final regulatory approval of Shell's downstream Equilon joint venture with Texaco.
- Missouri-based Clark USA purchased British Petroleum’s Lima, Ohio refinery, related terminal facilities, and inventory for $217 million.
- Forcenergy, Inc., Miami, acquired Forecenergy AB, Sweden, a holding company that owned 34 percent of Forcenergy, Inc., for $214 million.
- TransMontaigne, Denver, acquired Louis Dreyfus Energy, subsidiary of Louis Dreyfus et Cie, France, for $161 million.
- Simultaneously with Texas Utilities’ acquisition of the Energy Group, United Kingdom, P&L Coal Holdings, a unit of Lehman Brothers Holdings, purchased Peabody Group, formerly an affiliate of the Energy Group, for $2.3 billion. Peabody is the largest U.S. coal producer.

FDI-Related Acquisitions and Divestitures of U.S. Energy Assets

Information about FDI-related acquisitions and divestitures is disclosed in press releases and filings of U.S. Securities and Exchange Commission (SEC) Form 13D, and they are followed closely by the financial press in the United States. However, because not all FDI transactions become public knowledge and because the following analysis derives its data from public sources, the transactions reported here are not necessarily exhaustive, but include only the FDI-related transactions that could be identified and verified by the Energy Information Administration (EIA) from publicly available information.[4]

FDI-related acquisitions of companies or assets in the U.S. energy industry soared to $57 billion in 1998, largely reflecting British Petroleum's merger with Amoco (Figure 1). Without the British Petroleum-Amoco merger, FDI-related acquisitions would have been $4.5 billion, near the top of the range of FDI-related acquisitions since 1989, and an increase from 1997 (Table 1). The largest category of FDI-related acquisitions, aside from the British Petroleum-Amoco merger, was midstream natural gas, where Shell Oil, a U.S. unit of Royal Dutch/Shell (Netherlands and United Kingdom), acquired Tejas Gas. In FDI-related divestitures, divested coal assets increased over the 1997 level to $2.3 billion, almost entirely because the Peabody Group was sold to Lehman Brothers Holdings as part of the acquisition of the Energy Group (United Kingdom) by Texas Utilities (now TXU). In addition, three previously FDI-related refineries were sold, one each from British Petroleum, Broken Hill Proprietary (Australia), and Royal Dutch/Shell.

Table 1. Value of Foreign Acquisitions and Divestitures in U.S. Energy, 1991-1998
(Million Dollars)

	1991	1992	1993	1994	1995	1996	1997	1998
Acquisitions								
Oil and Gas Production[a]	1,043	949	1,246	159	2,570	368	1,386	53,892
Midstream Natural Gas	NA	NA	NA	170	367	1,252	150	3,167
Petroleum Refining and Marketing	103	173	1,264	0	339	50	313	0
Coal	570	1,276	1,928	674	0	204	99	400
Electric Power[b]	NA	NA	150	0	0	0	1,390	0
Total Acquisitions	**1,716**	2,398	4,588	1,003	3,276	1,874	3,338	57,459
Divestitures								
Oil and Gas Production[a]	736	461	938	663	699	660	340	585
Midstream Natural Gas	NA	NA	NA	0	167	123	0	75
Petroleum Refining and Marketing	400	60	822	41	0	679	959	806
Coal[c]	155	869	438	768	110	0	47	2,312
Electric Power[d]	NA	NA	NA	NA	NA	NA	528	0
Total Divestitures	**1,291**	1,390	2,198	1,472	976	1,462	1,874	3,778

[a] Includes drilling and drilling services.

[b] 1997 includes NGC's acquisition of all of Destec.

[c] 1992 includes Shell Oil's divestiture of its coal operations for $850 million.

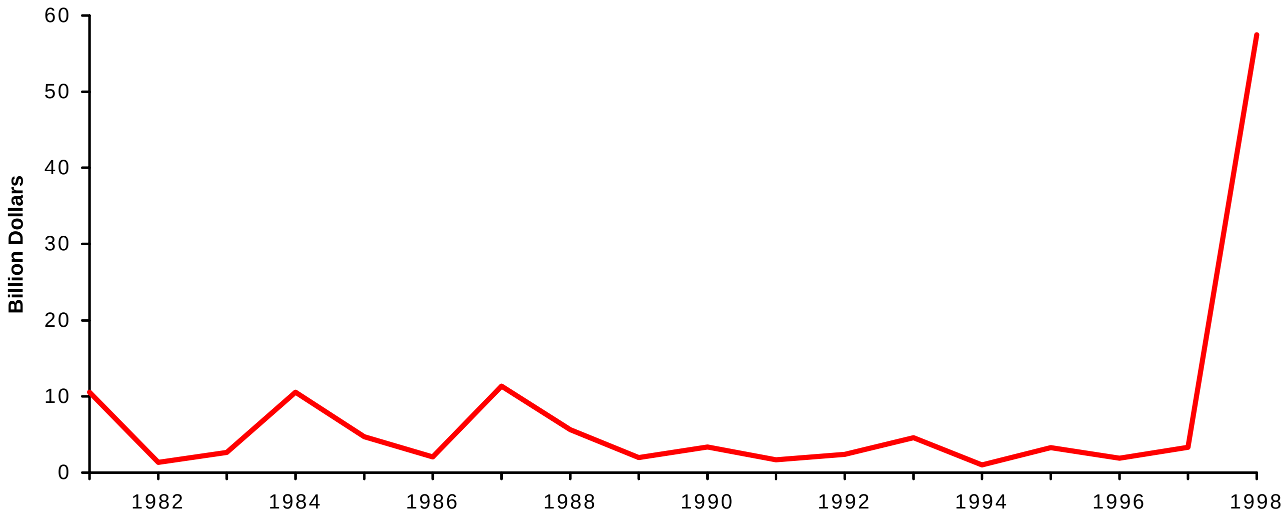
[d] 1997 includes NGC's divestiture of Destec's international assets to AES.

NA = Not available.

Notes: 1999 oil and gas production divestitures do not include the purchase of Norcen Energy Resources (Canada) by Union Pacific Resources because no estimate of the value of Norcen's U.S. assets separate from the rest of the company's assets was found. 1997 coal acquisitions and divestitures do not include Peabody's acquisition by the Energy Group (United Kingdom) nor divestiture by Hanson (United Kingdom) because it was a transaction between foreign investors and does not change the amount of FDI. 1995 divestitures do not include Du Pont's $8.8-billion stock buyback.

Sources: **1998:** Tables A1 and A2 in Appendix A. **1991-1997:** Energy Information Administration, *Performance Profiles of Major Energy Producers 1998*, Table 29, http://www.eia.doe.gov/emeu/perfpro/tab5-01.html, December 15, 1999.

Figure 1. Value of Foreign Direct Investment-Related Acquisitions in U.S. Energy, 1981-1998



Sources: **1998**: Tables A1 and A2 in Appendix A. **1981-1997**: Energy Information Administration, *Performance Profiles of Major Energy Producers 1998,* Figure 26, http://www.eia.doe.gov/emeu/perfpro/fig5-01.gif, January 12, 2000.

Foreign investors' interest in the U.S. electric power industry continued in 1998, although no notable transactions were completed that year. Acquisitions pending at the end of 1998 include Scottish Power's (United Kingdom) merger with PacificCorp, valued at $6.5 billion, National Grid's (United Kingdom) merger with New England Electric System, valued at $4.2 billion, and AmerGen's purchase of Three Mile Island Unit 1 from GPU, Inc., valued at $100 million. The purchase of Three Mile Island Unit 1 is the first purchase of a U.S. nuclear power plant by a foreign-affiliated company. AmerGen is a joint venture between British Energy (United Kingdom) and PECO Energy.

BP-Amoco Dominates FDI-Related Energy Transactions

The largest FDI-related transaction in the United States, in any industry or year, was British Petroleum's merger with Amoco, completed on December 31, 1998.[5] That transaction, which was valued at $53 billion, created the world's third-largest integrated petroleum company, BP Amoco, advancing it into the ranks of the "super majors."[6] Before the merger, Amoco was the fifth-largest oil company in the United States, while British Petroleum was the third-largest in the world.[7] BP Amoco is the largest producer of oil and gas in the United States and the United Kingdom (Amoco was the largest producer of gas in the United States), holds the second largest reserves of any international oil company, has a strong market presence in the United States and Europe, and is one of the largest petrochemical companies in the world. The merger was effected by the issue of new BP Amoco shares to Amoco stockholders,[8] resulting in British Petroleum stockholders owning 60 percent and Amoco stockholders owning 40 percent of the merged company. British Petroleum's former chief executive John Browne heads the merged company, which is headquartered in London.

In allowing the merger, the U.S. Federal Trade Commission (FTC) expressed concern regarding wholesale gasoline sales in 30 metropolitan areas in the eastern United States and the terminaling of gasoline and other light products in 9 U.S. markets. As a result, the FTC required the new company to sell 134 gasoline stations and 9 terminals, and to allow about 1,600 independent gasoline stations that had been wholesale customers of the merging companies to switch their supplier. FTC Chairman Robert Pitofsky is quoted as saying, "Although the merger of BP and Amoco involves companies of enormous size, … the operations of these two companies rarely overlap in a way that threatens competition. Where they do overlap, … the commission, … has achieved substantial divestitures and other relief….”[9] The FTC concluded that there was no significant overlap between British Petroleum’s and Amoco’s oil and gas production and petrochemical manufacturing activities.

BP Amoco intends to extend the Amoco brand to all British Petroleum retail gasoline stations and convenience store outlets in the United States, while in the rest of the world the BP brand will be used. The merged company is expected to focus on exploration and development prospects in the deep-water Gulf of Mexico, Angola, and the Caspian Sea. Its existing reserves are predominantly in the North Sea and North America.

Natural Gas and Coal Also Attract Foreign Investment

The second-largest FDI-related transaction in 1998 was Royal Dutch/Shell’s acquisition, through its affiliate in the United States, Shell Oil, of Tejas Gas for $3 billion in equity and debt assumption. The purchase included Tejas’ share of Coral Energy, a natural gas marketing enterprise. Coral was formed in 1995 as a joint venture among Tejas, Shell Oil, and Shell Canada. Tejas Gas is one of the largest independent intrastate gatherers and transporters of natural gas through its own pipelines in the United States, operating in Oklahoma, Texas, and Louisiana. It also is engaged in downstream natural gas activities through alliances with other companies. In 1996, Royal Dutch/Shell became active in natural gas transportation in the Gulf of Mexico. The purchase of Tejas/Coral is further evidence of its movement into midstream and downstream natural gas in the United States to complement its existing U.S. upstream activities. Shell Oil is now engaged extensively in natural gas in the United States, including, in addition to exploration and production, purchasing, gathering, processing, treating, storing, transporting, and marketing.

The third-largest FDI-related transaction in 1998 was the divestiture of the largest coal producer in the United States and the world, the Peabody Group. The transaction was part of the acquisition of the Energy Group, the largest electric utility in the United Kingdom, by Texas Utilities (now TXU). (For more information on this merger, see the section on direct investment abroad in electric power at the end of this report.) Texas Utilities decided to spin off Peabody, then a subsidiary of the Energy Group. Lehman Brothers Holdings, an investment banking holding company, through its affiliates acquired Peabody in May 1998 for $2.3 billion and since has kept Peabody a privately owned company. While producing (often low-sulfur) coal in the United States and Australia is its primary activity (91 percent of its total revenues in its 1999 financial statements), Peabody also is engaged in electric power trading and power and coal contract restructuring services through its subsidiary, Citizens Power.

All other FDI-related transactions in the U.S. energy sector were substantially smaller than the three just mentioned (Tables A1 and A2). However, it is worth noting that three formerly foreign-owned U.S. refineries were divested in 1998, for a total of more than $800 million. The independent refining company Tesoro Petroleum more than tripled its refining capacity by purchasing two U.S. refineries, one (in Anacortes, Washington) from Royal Dutch/Shell and the other (in Hawaii) from Broken Hill Proprietary (Australia). Tesoro is a rapidly growing refiner and marketer of petroleum products on the West Coast, Alaska, and Hawaii. Another independent refiner, Clark USA (now Premcor) purchased its fourth refinery (in Lima, Ohio) from British Petroleum in 1998.

The Foreign Direct Investment Position

In the United States, the Bureau of Economic Analysis (part of the U.S. Department of Commerce) collects data regarding foreign direct investment from companies in the United States that are affiliates of foreign investors. One comprehensive indicator of FDI maintained by the Bureau is the FDI position of foreign investors in the United States, which can be viewed as foreign investors’ contributions to the net value of ownership in their affiliates in the United States.[10] The FDI position encompasses more than FDI-related acquisitions and divestitures. It also includes reinvested earnings, loans to, and capital contributions to existing affiliates.

Because of these differences, changes in the FDI position can give a different picture of foreign investor activity in the United States than the FDI-related acquisitions and divestitures discussed in the previous section. For example, repayments of debt by FDI affiliates could swamp increased FDI-related acquisitions by foreign investors, resulting in the FDI position decreasing while FDI-related acquisitions were increasing.

In addition to these definitional distinctions, there are several reasons why net FDI-related acquisitions and divestitures and the FDI positions discussed here can differ. One difference is that the measure of foreign direct investment used in the analysis here is valued on an historical cost basis.[11] Acquisitions and divestitures, however, are valued on a transactions basis, i.e., at the amount of the transaction. Another is that the FDI position data usually classify the transaction by the industry of the affiliate company in the United States.[12] The classification is determined by the industry that accounts for the largest percentage of the affiliate's sales. This practice may result in some energy transactions being assigned to another industry. For example, a transaction involving the petroleum and natural gas assets of an affiliate whose largest share of sales was in a non-energy industry would be classified in the non-energy industry, not in the petroleum and natural gas industry. A third difference is that some of the Bureau's aggregation categories do not keep energy transactions separate from other transactions. In particular, natural gas distribution and sanitary service utility investments are included in the same category as electric power investments in the published FDI position data. In addition, the Bureau is obliged to aggregate its reported data to maintain its confidentiality. Because individual data items collected by the Bureau are kept confidential, individual transactions from other sources cannot be compared to the Bureau's data in order to reconcile any differences.

FDI Position in U.S. Economy Continues Strong Growth

During the past several years, the overall FDI position in the U.S. economy has been growing at rates not experienced since the late 1980's: the rate of increase of the FDI position in 1998, 17 percent, was at its highest since 1989 (Table 2). A substantial portion of the growth in 1998 resulted from a surge in capital flows from new investments, part of a global boom in mergers and acquisitions. Equity capital inflows for acquiring or establishing new affiliates substantially exceeded previous years, in part because of high valuations in the equity markets of several countries, including the United States.[13] Favorable economic conditions in several countries were also an impetus for the FDI position growth.

The FDI position in the United States totaled $812 billion at the end of 1998 (Table 3). Almost 90 percent of the increase that year was accounted for by European parents or their affiliates. The United Kingdom and Germany led all other countries in their net additions, mostly because of two very large transactions. British Petroleum (United Kingdom) acquired Amoco and Daimler-Benz (Germany) acquired Chrysler, both by exchanging stock.[14] Although these two transactions accounted for nearly a fourth of the increase in the overall FDI position, its growth still would have been 13 percent without them.[15] Despite poor economic conditions in Japan, Japanese parent corporations also increased their FDI position in the United States. Although overall equity acquisitions were up substantially in 1998, reinvested earnings by foreign parents were down by about half, primarily because of earnings declines but also because a smaller share of earnings was reinvested by foreign parents.

New FDI-related investments are investments to establish a new company or to acquire an existing company. Petroleum and natural gas accounted for more than one third of the new FDI outlays in the United States in 1998.[16] Most new FDI-related investments in the United States are to acquire existing businesses, rather than to establish new businesses. In 1998, $181 billion was invested by foreign entities to acquire existing businesses in all U.S. industries while only $20 billion was to establish new businesses. For the petroleum industry, $60 billion was invested to acquire existing businesses while $12 billion was spent to establish new businesses.

Petroleum and Natural Gas Industry's FDI Position Rebounds

The growth in the FDI position in U.S. petroleum and natural gas in 1998 rebounded sharply from its slight decline the previous year. The FDI position grew to $53 billion in 1998, an increase of 27 percent (Table 2). The increase is apparently the largest ever for U.S. petroleum and natural gas and makes 1998 the second year of large increases in the previous 3-year period. This growth in the FDI position was more than accounted for by capital inflows from the United Kingdom, which were slightly offset by small net outflows from the Netherlands,

Table 2. Foreign Direct Investment Position in U.S. Oil and Gas and Coal Industries, 1980-1998
(Billion Dollars)

	Foreign Direct Investment Position			Percent of Total	
	Petroleum and Natural Gas[a]	Coal	All Industries	Petroleum and Natural Gas	Coal
1980	12.2	0.5	83.0	14.7	0.6
1981	15.2	1.1	108.7	14.0	1.0
1982	17.7	1.2	124.7	14.2	1.0
1983	18.2	1.3	137.1	13.3	0.9
1984	25.4	2.6	164.6	15.4	1.6
1985	28.3	2.9	184.6	15.3	1.6
1986	29.1	3.5	220.4	13.2	1.6
1987	37.8	3.3	263.4	14.4	1.3
1988	36.0	5.3	314.8	11.4	1.7
1989	40.3	0.9	368.9	10.9	0.2
1990	42.9	0.8	394.9	10.9	0.2
1991	40.1	1.4	419.1	9.6	0.3
1992	34.7	1.0	423.1	8.2	0.2
1993	32.2	0.9	467.4	6.9	0.2
1994[a]	32.3	0.6	480.7	6.7	0.1
1995	34.9	0.6	535.6	6.5	0.1
1996	43.5	0.6	598.0	7.3	0.1
1997	42.1	0.1	693.2	6.1	0.0
1998	53.3	0.4	811.8	6.6	0.0

[a]In 1998, the Bureau of Economic Analysis reclassified intercompany debt and associated interest transactions between parent companies and their affiliates that are nondepository financial intermediaries from direct investment to transactions with unaffiliated foreigners beginning with data for 1994. Thus there is a break between 1993 and 1994 in the All Industries and Percent of Total series.

Notes: Foreign direct investment position is the value of foreign direct investors' net equity in, and outstanding loans to, their affiliates in the United States at the end of the year. Amounts are on a historical-cost, or book-value, basis. 1998 estimates are preliminary; 1996-1997 estimates are revised. (The Bureau of Economic Analysis usually continues to revise direct investment data for several years after they are first published.) Sum of components may not equal total due to independent rounding.

Source: Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, September 1999), Table 17, and preceding issues.

Canada, and other countries (Table 4). Most of the increased FDI position for the United Kingdom can be attributed to the acquisition of Amoco by British Petroleum at year end via equity capital inflows. As a result, petroleum and natural gas's share of the total FDI position in the United States increased for only the second time since 1988. The FDI position in the coal industry continued to be a minute share of the U.S. total.

The geographic shares of the FDI positions in petroleum and natural gas by country changed substantially in 1998 because of the acquisition of Amoco by British Petroleum. The share of direct investors in the United Kingdom, the second largest direct investor in 1997, increased to almost 50 percent in 1998 (Figure 2). Correspondingly, the shares of the other countries that were substantial direct investors in U.S. petroleum and natural gas declined in 1998. Direct investors from the United Kingdom, the Netherlands, and Australia all invest relatively more in U.S. petroleum and natural gas than they do in other industries. (Their shares of the FDI position in U.S. petroleum and natural gas are from 2 to 4 times their shares of all other industries.) Each of the three countries is home to a parent company linked to a major petroleum and natural gas subsidiary in the United States: Shell Oil, a subsidiary of Royal Dutch/Shell (Netherlands and United Kingdom); BP America and BP Amoco Corp.,

Table 3. Geographic Sources of Foreign Direct Investment Position in Total U.S. Industry, 1997-1998
(Billion Dollars)

	Foreign Direct Investment Position		
	1997	1998	Net Additions
Canada	69.9	74.8	5.0
Europe	432.6	539.9	107.3
United Kingdom	131.3	151.3	20.0
Netherlands	89.6	96.9	7.3
Germany	71.3	95.0	23.8
France	49.5	62.2	12.7
Switzerland	38.3	54.0	15.7
Latin America and OWH[a]	33.5	32.2	-1.3
UK Islands, Caribbean	12.0	10.4	-1.6
Africa	1.5	0.9	-0.6
Middle East	6.6	7.8	1.2
Asia and Pacific	149.1	156.1	7.0
Japan	125.1	132.6	7.4
Australia	14.7	14.8	0.1
All Countries	693.2	811.8	118.5
Addenda			
European Union (15)[b]	390.6	481.7	91.1
OPEC[c]	4.5	4.9	0.5

[a]Other Western Hemisphere.

[b]The European Union (15) comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[c]OPEC is the Organization of Petroleum Exporting Countries, comprising Algeria, Indonesia, Iraq, Iran, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Notes: Foreign direct investment position is the value of foreign direct investors' net equity in, and outstanding loans to, their affiliates in the United States at the end of the year. Amounts are on a historical-cost, or book-value, basis. 1998 estimates are preliminary; 1997 estimates are revised. (The Bureau of Economic Analysis usually continues to revise direct investment data for several years after they are first published.) Sum of components may not equal total due to independent rounding.

Source: Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, September 1999), Tables 10.2-10.3.

subsidiaries of BP Amoco p.l.c. of the United Kingdom; and BHP Petroleum Americas, a subsidiary of Broken Hill Proprietary of Australia.

For Canada, and especially for Germany, Switzerland, and Japan, the shares of FDI in the U.S. petroleum and natural gas industry are much smaller than the shares of FDI in other industries. In total, Europe accounts for more than 80 percent of the FDI in U.S. petroleum and natural gas, dwarfing any other region (Table 4).

Table 4. Geographic Sources of the Foreign Direct Investment Position in U.S. Oil and Gas Industry, 1997-1998
(Billion Dollars)

	Foreign Direct Investment Position		
	1997	1998	Change
Canada	3.2	2.6	-0.5
Europe	29.8	42.8	13.0
United Kingdom	11.7	26.3	14.6
Netherlands	12.9	11.5	-1.4
Latin America and OWH[a]	3.4	4.1	0.6
UK Islands, Caribbean	(d)	1.6	(d)
Netherlands Antilles	2.7	(d)	(d)
Middle East	(d)	1.1	(d)
Asia and Pacific	4.2	2.7	-1.5
Australia	4.5	3.2	-1.3
Japan	0.2	0.2	0.0
All Countries	42.1	53.3	11.2
Addenda			
European Union (15)[b]	28.5	41.3	12.9
OPEC[c]	0.8	0.4	-0.3

[a]Other Western Hemisphere.

[b]The European Union (15) comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[c]OPEC is the Organization of Petroleum Exporting Countries, comprising Algeria, Indonesia, Iraq, Iran, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

[d]Data withheld by the Bureau of Economic Analysis to prevent disclosure of individual company information.

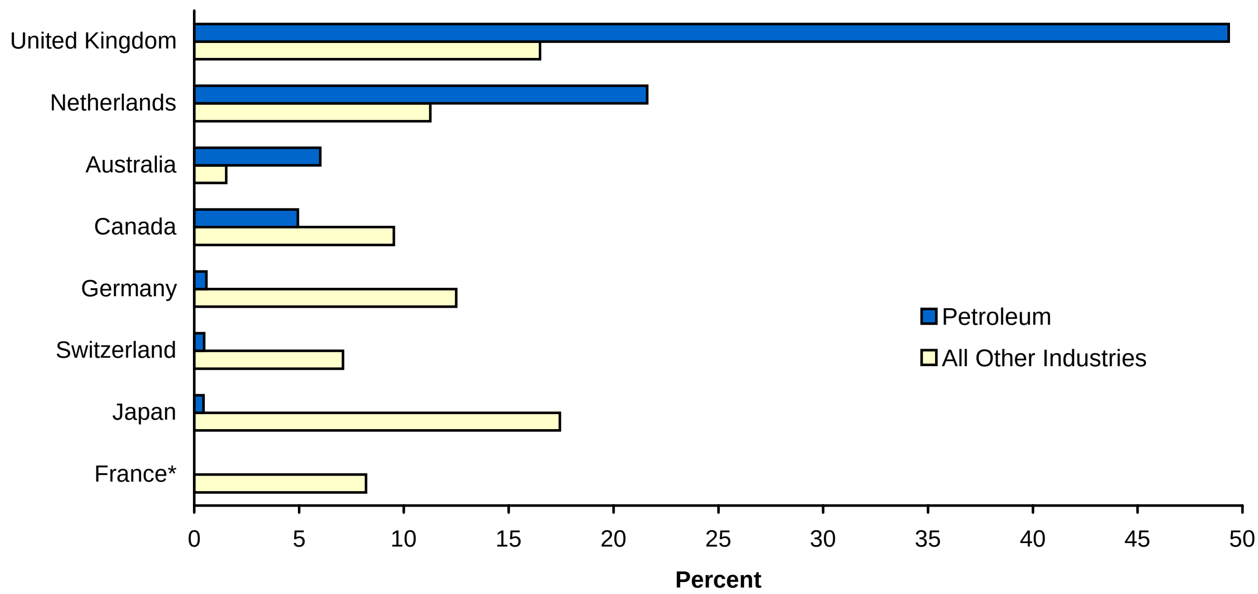
Notes: Foreign direct investment position is the value of foreign direct investors' net equity in, and outstanding loans to, their affiliates in the United States at the end of the year. Amounts are on a historical-cost, or book-value, basis. 1998 estimates are preliminary; 1997 estimates are revised. (The Bureau of Economic Analysis usually continues to revise direct investment data for several years after they are first published.) Sum of components may not equal total due to independent rounding.

Source: Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, September 1999), Tables 10.2-10.3.

Foreign-Affiliated Companies' Role in U.S. Petroleum, Natural Gas, and Coal Operations

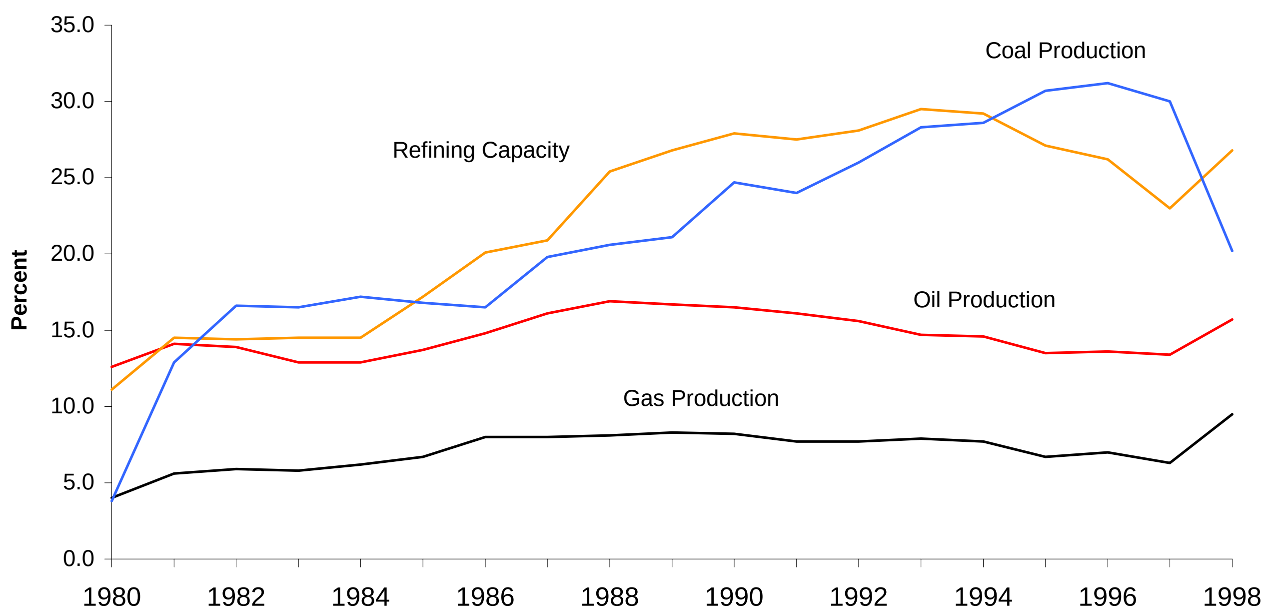
Major trends in the operations of foreign-affiliated companies in the U.S. oil, gas, and coal industries all had notable reversals in 1998 (Figure 3). Largely because of British Petroleum's merger with Amoco and the creation of Equilon Enterprises by Texaco and Royal Dutch/Shell (Shell Oil), the shares of FDI-affiliated companies in the United States increased in oil and natural gas production (BP-Amoco), and in refining capacity (BP-Amoco and Equilon). All of these increases follow downward trends during most of the 1990's. The effect was most striking in refining capacity, where affiliates gained back more than one third of their 6.5-percentage point decline in share

Figure 2. Shares of Foreign Direct Investment Position by Selected Country (of Investor) in U.S. Petroleum and Natural Gas and All Other U.S. Industries, 1998



*Direct investment in U.S. oil and gas from France was not reported to avoid disclosure of the data of individual companies.
Source: Bureau of Economic Analysis, "Foreign Direct Investment in the United States," *Survey of Current Business* (Washington, DC, September 1999), Table 10.3.

Figure 3. FDI Affiliates' Share of U.S. Production of Oil, Gas, and Coal, and of U.S. Refining Capacity, 1980-1998



Sources: **1998**: Tables 6, 7, 9 and 11. **1980-1997**: Energy Information Administration, *Performance Profiles of Major Energy Producers 1998*, DOE/EIA-0206(98) (Washington, DC, January 2000), Figure 28.

between 1993 and 1997. The FDI affiliates' shares of oil and natural gas production had been declining much more slowly than their share of refining.

The share of coal production had the largest change in 1998, a decline of 10 percentage points (Figure 3), because the largest coal producer in the world, the Peabody Group, was sold as part of the purchase of the Energy Group by Texas Utilities. The share of U.S. coal production by FDI affiliates had fallen somewhat in 1997, after steadily increasing throughout the 1980's and 1990's.

Although the merger of British Petroleum and Amoco was not completed until December 31, 1998, Amoco's 1998 production and gasoline sales amounts are included as part of BP Amoco's totals because BP Amoco did not report its production and gasoline sales separately for BP America and Amoco in 1998. In fact, the production and operating effects of the merger did not actually occur until 1999. Another reason to include Amoco in 1998 is to not overly complicate the analysis. If Amoco were not included in the production flow amounts, then the changes reported would be much smaller. However, since the merger was effected on the last day of the year, and since that is when the stocks of reserves are measured, the reserve amounts properly include Amoco and would show much larger changes. Including Amoco in FDI production for 1998 synchronizes the changes in production and reserves to the same year. (To indicate the inclusion of Amoco in the FDI flows, the term "companies that were foreign-affiliated at year end" is used in the following discussion.)

FDI Affiliates Make Major Expansion in Downstream Marketing

Companies that were foreign affiliated at year end strongly increased their share of U.S. energy operations in petroleum marketing and sales. Both the number of retail gasoline outlets and gasoline sales volumes of FDI affiliates increased 8 percentage points in 1998 (Table 5). The jump was almost entirely due to British Petroleum's merger with Amoco and the creation of Equilon Enterprises, a joint venture between Texaco and Royal Dutch/Shell (Shell Oil).[17] British Petroleum's purchase of Amoco gained for it approximately 9,000 additional retail outlets, while Texaco's joint venture with Shell (Equilon) added approximately 4,500 outlets to the FDI column.[18] Citgo Petroleum, a subsidiary of the state-owned Petroleos de Venezuela increased its number of stations slightly, while Fina, a subsidiary of Total Fina (now Total Fina Elf), decreased its number slightly.

The share of U.S. refining capacity owned by companies that were foreign-affiliated at year end increased by almost 4 percentage points in 1998,(Table 6) after declining by 6 percentage points between 1994 and 1997. Again, this reversal also was almost entirely due to British Petroleum's merger with Amoco and the creation of Equilon Enterprises. British Petroleum's purchase of Amoco almost tripled its U.S. refining capacity. The increase in FDI-related refinery capacity would have been 6 percentage points had not Tesoro Petroleum purchased two formerly FDI-affiliated refineries from Shell Oil and Broken Hill Proprietary and Clark USA purchased a formerly FDI-affiliated refinery from British Petroleum. British Petroleum has been undergoing a global refinery network rationalization for several years, and the sale of its Lima, Ohio refinery was part of that plan. Shell agreed to sell its refinery as part of a consent agreement with the Federal Trade Commission when it formed its Equilon joint venture. Broken Hill sold its refinery in order to focus on its upstream exploration and production activities. In part because few retail outlets were lost by FDI affiliates through divestitures, their share of gasoline marketing in the United States increased substantially more (8 percentage points) than their share of refining (4 percentage points).

FDI Affiliates' Shares of Oil and Gas Production and Reserves Increase Sharply

During most of the 1980's, the shares of U.S. oil and gas production by companies that were foreign affiliated increased slowly. In the 1990's, both of these trends reversed to a slow decline; however, in 1998, they again reversed, this time by increasing sharply. For 1998, companies that were foreign-affiliated at year end increased their production of crude oil and natural gas liquids by 235 thousand barrels per day (20 percent) and their production of natural gas by 754 billion cubic feet (55 percent) (Table 7). FDI affiliates' shares of total oil and gas production in the United States increased to 16 and 11 percent, respectively. The increase in the oil and gas production shares of foreign-affiliated companies that year was due almost entirely to British Petroleum's

Table 5. Branded Retail Outlets and Total Gasoline Sales in the United States by Foreign-Affiliated Companies, 1997-1998

	1997	1998
Number of Outlets		
BP Amoco	NE	15,500
Citgo Petroleum	14,885	15,079
Motiva	NE	14,200
Equilon	NE	9,400
Fina	2,571	2,324
Star Enterprise[a]	9,378	(b)
Shell Oil	9,300	(c)
BP America	6,775	(d)
Hawaiian Independent Refinery	32	NF
Total for Foreign-Affiliated Companies[e]	42,941	56,503
U.S. Total[f]	182,596	180,567
Foreign-Affiliated Companies as Percent of U.S. Total	23.5	31.3
Total Gasoline Sales[g] (thousand barrels per day)		
Foreign-Affiliated Companies[h]	1,998	2,721
All Companies	8,195	8,395
Foreign-Affiliated Companies as a Percent of U.S. Total	24.4	32.4

[a]Not publicly reported for 1997; assumed unchanged from 1996.
[b]Became part of Motiva in 1998.
[c]Became part of Motiva or Equilon in 1998.
[d]Included in BP Amoco in 1998.
[e]Includes company-owned outlets and independent dealer outlets.
[f]The total includes all establishments selling gasoline at retail.
[g]Gasoline sales by "Prime Suppliers."
[h]Disaggregated company numbers are considered proprietary by the Energy Information
NF = not foreign-affiliated at year-end; NE = not in existence.

Sources: **Company station counts and total branded outlets**: *National Petroleum News,* Market Facts 1998 (Mid-July 1999), and previous issue, and company press releases. **Foreign affiliates' sales**: Energy Information Administration, Form EIA-782C, "Monthly Report of Prime Supplier Sales of Petroleum Products Sold for Local Consumption." **All companies' sales**: Energy Information Administration, *Petroleum Marketing Annual 1998* , DOE/EIA-0487(987) (Washington, DC, December 1999), Table 48, and previous issue.

purchase of Amoco. The only other notable increase in U.S. production was by Royal Dutch/Shell (Shell Oil), which increased oil production by 6 percent and gas production by 7 percent.

Much the same story can be told for total FDI oil and gas reserves as for production (Table 8). However, it is important to note that gross reserve additions by foreign-affiliated companies in 1998 are exaggerated by the inclusion of Amoco's U.S. reserves that year, but not in 1997. Thus all of Amoco's reserves at the end of 1997, as well as its additions to reserves in 1998, are included in the additions to reserves and the ratio of gross reserve additions to production in 1998. A more meaningful ratio can be calculated by including Amoco's U.S. reserves in the 1997 FDI affiliates' reserves totals. In that case, the ratio of gross reserve additions to production for foreign-affiliated companies is similar to that for all U.S. companies.

Table 6. U.S. Refinery Operations of Foreign-Affiliated Companies, 1997-1998

Company	Number of Refineries		Total Crude Oil Distillation Capacity (thousand barrels per day)	
	1997	1998	1997	1998
BP Amoco	NE	7	NE	1,419
Motiva Enterprises[a]	NE	4	NE	825
PDV America	5	5	687	749
Equilon Enterprises[b]	NE	4	NE	451
Deer Park[c]	1	1	269	274
Lyondell-Citgo	1	1	239	263
Fina	2	2	230	237
Shell Oil	7	2	920	140
Neste Trifinery Petroleum	1	1	30	30
Transworld Oil USA (Calcasieu)	1	1	15	15
Star Enterprise	3	(d)	600	(d)
BP America	3	(e)	551	(e)
BHP Petroleum Americas	1	NF	95	NF
Total Foreign-Affiliated	25	28	3,637	4,403
Total United States	159	157	15,840	16,423
Percent Foreign-Affiliated	15.7	17.8	23.0	26.8

[a]Joint Venture among Shell, Texaco and Saudi Aramco.

[b]Joint venture between Shell and Texaco.

[c]Formerly Shell Oil/PMI Holdings.

[d]Star Enterprise was dissolved in 1998; its assets were contributed to the Motiva Enterprises joint venture.

[e]Included in BP Amoco amounts.

NF = not foreign-affiliated at year-end; NE = not in existence.

Sources: *Oil and Gas Journal* (December 21, 1998), pp. 49-92, and previous issues.

Foreign Shares of Coal and Uranium Activity Fall Dramatically

In 1998, Lehman Brothers Holdings, through P&L Coal Holdings, acquired Peabody Group, the largest coal producer in the United States. Even though the second largest foreign-affiliated coal producer, Rio Tinto (Kennecott Energy and Coal), increased its U.S. production by almost 60 percent, the share of U.S. coal produced by foreign-affiliated companies fell 9 percentage points in 1998, to 21 percent (Table 9 and Figure 4).[19] A substantial portion of Kennecott's production increase is attributable to its acquisition of the Jacobs Ranch Coal Mine in 1998; otherwise coal production for the large foreign-affiliated producers changed little.

The Peabody Group has seen several changes in ownership in the 1990's. It became foreign-affiliated when it was acquired by Hanson (United Kingdom) in 1990. In 1996, Hanson announced that it would spin off several lines of business, including Peabody. The next year the Energy Group, primarily including Peabody and the Eastern Group, a regional electricity company in the United Kingdom, was the last in a series of spin-offs completed by Hanson. Several months later the Energy Group, through Peabody, purchased Citizens Power, a marketer of electricity in the United States. Several months after that, PacificCorp started a bidding war for the Energy Group (later joined by Texas Utilities), which culminated in Texas Utilities purchasing the Energy Group in 1998. In a transaction coinciding with that purchase, the Peabody Group was sold to Lehman Brothers Holdings.

Table 7. Net Production of Crude Oil and Natural Gas Liquids and Dry Natural Gas in the United States by Foreign-Affiliated Companies, 1997-1998

	Crude Oil and Natural Gas Liquids (thousand barrels per day)		Dry Natural Gas (billion cubic feet)	
	1997	1998	1997	1998
BP Amoco[a]	NE	775.3	NE	897.0
Shell Oil	490.4	520.5	630.0	674.0
Anadarko Petroleum	39.7	44.9	179.0	177.0
Canadian Occidental	12.7	12.1	34.7	42.0
Fina	11.0	11.0	74.8	71.2
Louis Dreyfus Natural Gas	5.7	9.4	71.7	101.1
BHP Petroleum (Americas)	4.3	5.1	12.5	9.6
Chieftain Development International	2.6	3.2	24.3	27.0
YPF	2.7	2.7	53.0	52.0
Saba Petroleum	3.1	2.6	1.7	1.6
Elf Aquitaine	1.5	1.4	22.5	21.9
Statoil	0.0	0.5	0.0	39.8
BP America	553.4	(b)	115.0	(b)
Forcenergy Gas Exploration	22.5	NF	57.7	NF
Norcen Energy Resources	NA	NF	48.7	NF
Total Minatome	4.6	NF	34.9	NF
Other Companies	(c)	0.4	(c)	0.2
Total Foreign-Affiliated	1,154	1,389	1,361	2,114
Total United States	8,611	8,607	18,902	18,708
Percent Foreign-Affiliated	13.4	16.1	7.2	11.3

[a]Because BP Amoco does not report its production and reserve amounts in 1998 separately for Amoco and BP America, the totals for BP Amoco include Amoco production in 1998, despite the fact that the merger of British Petroleum and Amoco was completed on December 31, 1998.

[b]Not reported separately; included in BP Amoco amounts.

[c]Less than 0.05.

NA = Not publicly reported; NE = Not in existence; NF = Not foreign-affiliated at year-end.

Note: Unless otherwise notes, company production is net ownership interest production. Totals may not equal sum of components due to independent rounding.

Sources: **Company Data**: Form 10-K reports filed with the U.S. Securities and Exchange Commission, annual reports to shareholders, and Arthur Anderson, "Oil and Gas Reserves Disclosures-1998." **U.S. Totals**: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(2000/01) (Washington, DC, March 2000), Tables 3.1a and 4.1.

Production by the U.S. uranium industry declined again in 1998.[20] Uranium concentrate production was at its lowest level, except for 1993 and 1994, since production ramped-up after World War II. The decline in production was substantially due to the continuation of the long-term fall in the price of uranium, which resumed in 1997. Uranium prices had temporarily rebounded in 1995 and 1996, in part because of the default on contract delivery obligations by a uranium trading company in 1995 and in part because of uncertainty about the availability of uranium supplies derived from dismantling nuclear weapons.[21] In the latter half of 1996, a disarmament agreement between the United States and Russia was reached and the temporary disruption from the trading company default had subsided, causing uranium prices to continue their long-term decline.[22]

Table 8. U.S. Oil and Natural Gas Proved Reserves and Production for Foreign-Affiliated Companies, 1997 and 1998

Fuel Type	Foreign-Affiliated Companies[a]	U.S. Total	Foreign-Affiliated Share of U.S. Total (percent)
Crude Oil and Natural Gas Liquids Proved Reserves	(million barrels)		
December 31, 1997	5,318	30,519	17.4
December 31, 1998[b]	6,140	28,558	21.5
1997 Production	421	3,002	14.0
1998 Production[b]	507	2,824	18.0
1997 Gross Reserve Additions[c]	330	3,681	9.0
1998 Gross Reserve Additions[c]	1,329	863	154.0
1997 Ratio of Gross Reserve Additions to Production	0.78	1.23	NM
1998 Ratio of Gross Reserve Additions to Production	2.62	0.31	NM
Dry Natural Gas Proved Reserves	(billion cubic feet)		
December 31, 1997	13,581	167,223	8.1
December 31, 1998[b]	20,945	164,041	12.8
1997 Production	1,361	19,211	7.1
1998 Production[b]	2,114	18,720	11.3
1997 Gross Reserve Additions[c]	1,225	19,960	6.1
1998 Gross Reserve Additions[c]	9,478	15,538	61.0
1997 Ratio of Gross Reserve Additions to Production	0.90	1.04	NM
1998 Ratio of Gross Reserve Additions to Production	4.48	0.83	NM

[a]Reserves and production are on a net ownership interest basis. The reserves and production data under each fuel type are for companies identified as foreign affiliated and reporting oil and/or natural gas production during 1998.

[b]Because BP Amoco does not report its production and reserves amounts separately for Amoco and BP America in 1998, the production totals for 1998 include Amoco's production in 1998, despite the fact that the merger of British Petroleum and Amoco was completed on December 31, 1998. The reserves totals for 1998 include Amoco's reserves. At the end of 1997, Amoco's reserves were 1,080 million barrels of oil and natural gas liquids and 9,097 billion cubic feet of dry natural gas.

[c]Gross reserve additions = annual change in reserves + annual production.

NM = Not meaningful.

Sources: **Foreign-affiliated data:** Companies' Form 10-K reports filed with the U.S. Securities and Exchange Commission and annual reports to shareholders. **U.S. Totals:** Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1998 Annual Report* , DOE/EIA-0216(98) (Washington, DC, December 1999).

Following the renewed fall in the price of uranium, total expenditures for exploration and development of uranium in the United States declined in 1998, after increasing in the three previous years (Table 10). These expenditures have been generally declining since the late 1970’s. Contributions to uranium exploration and development expenditures in the United States by foreign majority-owned companies fell precipitously in 1998, to $271,000 (1 percent of the total).[23] Both the level of foreign expenditures and their share of the U.S. total hit a 20-year low.

Table 9. U.S. Coal Production and Source of Ownership of Foreign-Affiliated Companies, 1997-1998
(Thousand Short Tons)

Foreign-Affiliated Company (Parent Company)	1997	1998
Kennecott Energy (Rio Tinto)	78,950	125,023
Consol Coal (Rheinbraun)	72,822	73,198
BHP Utah Minerals (Broken Hill Proprietary)	14,318	13,688
Canyon Fuel (Itochu Coal International)	10,479	9,946
American Coal (RAG Group)	NA	5,503
Andalex Resources (Andalex Resources)	7,645	4,244
Peabody Holding (Energy Group)	142,473	NF
Total Foreign-Affiliated	**326,687**	**231,602**
Total United States	**1,089,932**	**1,117,535**
Percent Foreign-Affiliated	**30.0**	**20.7**

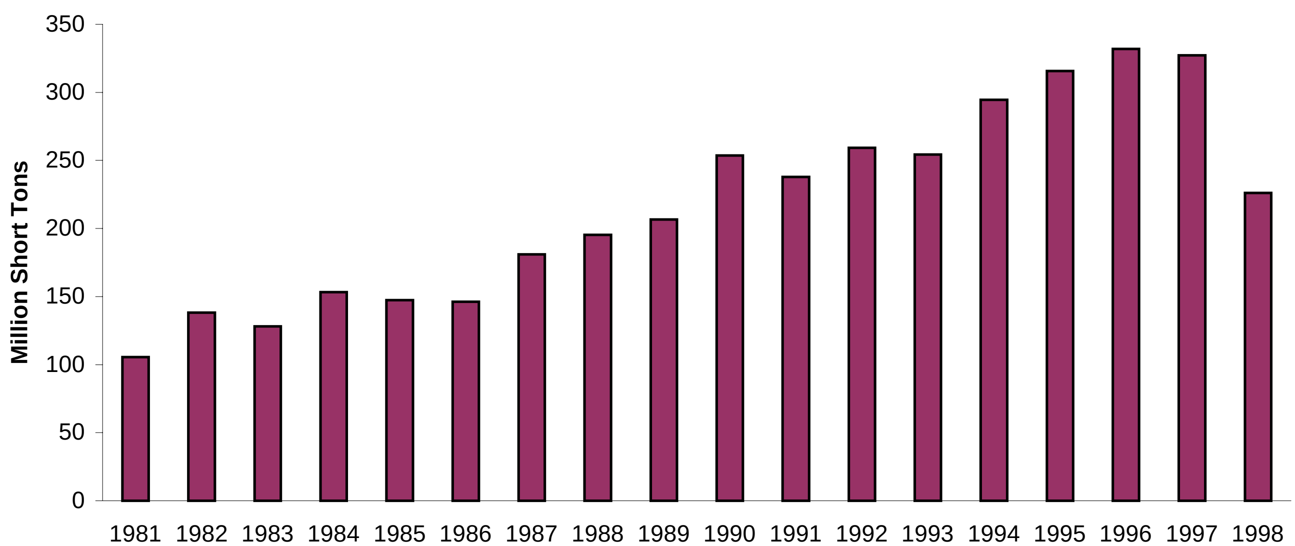
NA = Not available.

NF = Not foreign-affiliated at year-end.

Note: Coal production refers to bituminous coal, subbituminous coal, and lignite coal production only.

Sources: Energy Information Administration, *Coal Industry Annual 1998*, DOE/EIA-0584(98) (Washington, DC, May 2000), and previous issue.

Figure 4. Production of U.S. Bituminous Coal and Lignite for Foreign-Affiliated U.S. Companies, 1981-1998



Sources: **1981**: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1983*, DOE/EIA-0466 (Washington, DC, February 1985). **1982-1989**: *Keystone Coal Industry Manual*, 1990 and previous editions. **1990-1998**: Energy Information Administration, *Coal Industry Annual 1998*, DOE/EIA-0584(98) (Washington, DC, May 2000), Table 15, and previous issues.

Table 10. Foreign Contributions to U.S. Companies' Uranium Exploration and Development, 1976-1998
(Million Dollars)

	Foreign Contributions to U.S. Exploration and Development Expenditures	Total U.S. Exploration and Development Expenditures	Foreign Contributions as a Percent of U.S. Total	Number of U.S. Companies Reporting Foreign Contributions
1976	13.2	170.7	8	15
1977	21.7	258.1	8	17
1978	39.3	314.3	13	31
1979	34.1	315.9	11	28
1980	37.6	267.0	14	28
1981	24.6	144.8	17	25
1982	14.6	73.6	20	14
1983	4.8	36.9	13	9
1984	6.6	26.5	25	9
1985	5.6	20.1	28	6
1986	12.0	22.1	54	8
1987	11.9	19.7	60	11
1988	8.9	20.1	44	11
1989	6.1	14.8	41	7
1990	2.5	17.1	15	9
1991	3.5	17.8	20	6
1992	8.0	14.5	55	6
1993	8.5	11.3	75	7
1994	1.9	3.7	51	8
1995	2.1	6.0	35	7
1996	4.4	10.1	44	8
1997	4.3	30.4	14	4
1998	0.3	21.7	1	3

Note: Foreign contributions are defined as contributions by enterprises that are majority-owned by non-U.S. entities.

Sources: Energy Information Administration, *Uranium Industry Annual 1998,* DOE/EIA-0478(98) (Washington, DC, April 1999), Table 2, and preceding issues. **Number of Companies, 1995 - 1998**: Energy Information Administration, Form EIA-858 (Uranium Industry Annual Survey).

Increase in Capital Expenditures Dominated by Downstream

Downstream capital expenditures by companies that were foreign affiliated at year end increased 58 percent in 1998 (Table 11). Again, much of the increase can be attributed to the British Petroleum merger with Amoco. BP Amoco, which includes BP America and Amoco in 1998, spent $614 million more in 1998 than BP America alone spent on downstream capital expenditures in 1997. In addition, Equilon Enterprises, Motiva Enterprises, and Shell Oil together spent $183 million more on downstream capital in 1998 than their predecessor FDI affiliates Shell Oil and Star Enterprise did in 1997. Note that Equilon includes assets from Texaco that were not FDI-affiliated in 1997, but that Shell Oil sold a refinery in 1998. By the end of 1998, Shell Oil's downstream capital expenditures had fallen precipitously because by then Shell was conducting its downstream operations entirely through either its equity affiliates Equilon, Motiva, and Deer Park Refinery or its chemical products operating segment.

Upstream capital and exploration spending (including reserve acquisitions, and exploration and development costs incurred) were little changed for FDI affiliates in 1998; the most notable changes occurred in spending patterns

Table 11. U.S. Capital and Exploratory Expenditures of Foreign-Affiliated Petroleum and Natural Gas Companies, 1997-1998
(Million Dollars)

Company	Upstream[a] 1997	Upstream[a] 1998	Upstream[a] Change	Company	Downstream[b] 1997	Downstream[b] 1998	Downstream[b] Change
BP Amoco	NE	2,207	NM	BP Amoco	NE	809	NM
Shell Oil	2,079	1,848	-231	Equilon Enterprises	NE	651	NM
Anadarko Petroleum	442	659	217	Motiva Enterprises	NE	376	NM
Canadian Occidental	166	230	64	PDV America[d]	264	230	-34
Louis Dreyfus Natural Gas	603	226	-376	Fina	42	82	40
Fina[c]	193	186	-7	Shell Oil[e]	554	48	-506
Chieftain International	70	94	24	BP America	195	(f)	NM
BP America	1,119	(f)	NM	Star Enterprise	338	NE	NM
Forcenergy	493	NF	NM				
Norcen Energy Resources	137	NF	NM				
YPF	73	NA	NM				
Total	**5,374**	**5,450**	**76**	**Total**	**1,393**	**2,196**	**803**

[a]Includes costs incurred in oil and gas acquisition, exploration, development, and production.

[b]Includes capital expenditures in petroleum refining, marketing, and pipelines.

[c]Includes a relatively small amount of capital expenditures in Canada.

[d]Includes capital expenditures for Citgo Petroleum, additions to investments in Lyondell-Citgo Refining Co., and miscellaneous additions to investments in downstream subsidiaries, including Uno-Ven. The position in Uno-Ven was liquidated on May 1, 1997.

[e]Does not include expenditures at refineries operated by the Chemical Products Division.

[f]Not reported separately; included in BP Amoco amounts.

NA = not publicly reported; NE = not in existence; NF= not foreign-affiliated at year end; NM = not meaningful.

Notes: Norcen excludes acquisitions. PDV is taken from their Consolidated Cash Flow Statement. Star is estimated from Texaco's Capital and Exploratory Expenses of Equity Affiliates.

Sources: Company annual reports.

across companies. BP Amoco in 1998 spent almost twice what BP America spent in 1997. Anadarko Petroleum's upstream spending increased notably in 1998, most importantly, for the acquisition of reserves. Their largest acquisition was a package of working interests in five oil and gas fields in the Anadarko Basin of central Oklahoma, a core operating area of the company for 20 years. Shell Oil's upstream spending fell somewhat.[24] Nonetheless, Shell continues to focus substantial exploratory spending on its program in the Gulf of Mexico. Louis Dreyfus' upstream capital expenditures fell substantially in 1998 because its acquisitions of reserves and property fell almost 100 percent. In addition, one company that was an upstream FDI affiliate with considerable upstream spending in 1997, Forcenergy, dropped below the FDI limit of 10 percent foreign ownership in 1998 after a series of transactions between it and its foreign owners.

Financial Indicators for FDI Affiliates Collapse

Oil prices fell sharply during 1998, to levels not seen since 1973. Natural gas prices in the United States also slid, but not as much as oil prices. These declines, especially the oil price decline, "had devastating effects on income and cash flow from oil and gas production."[25] While the overall revenues and company-wide net income and cash flow of the major U.S. energy producers fell (both domestic and foreign-affiliated), the net income attributed to their U.S. refining and marketing operations almost doubled, as refiners cut costs faster than revenues fell.[26] Nonetheless, capital expenditures actually increased, forcing these companies to resort to several different methods to close the gap between cash flow and capital expenditures.

Table 12. Selected Financial Information for Foreign-Affiliated U.S. Petroleum and Natural Gas and Coal Companies, 1997-1998
(Billion Dollars)

	Foreign-Affiliated U.S. Petroleum and Natural Gas and Coal Companies[a]					U.S. Petroleum and Natural Gas and Coal Comparison Group[b]				
				Consistent Group[c]					Consistent Group[d]	
	1997	1998	Percent Change	1998	Percent Change	1997	1998	Percent Change	1997	Percent Change
Financial Items										
Revenues	70.3	122.5	74.3	54.1	-23.0	533.3	444.6	-16.6	504.8	-11.9
Net Income	5.0	3.1	-38.1	0.1	-98.6	31.4	8.6	-72.7	29.2	-70.6
Cash Flow[e]	9.5	16.0	68.4	8.0	-16.2	69.2	50.0	-27.8	65.5	-23.7
Capital Expenditures	9.1	18.8	106.7	10.2	12.4	57.5	56.6	-1.5	54.4	4.0
Cash Dividends	2.5	4.9	96.0	2.5	-0.4	14.9	12.7	-15.0	12.6	0.6
Total Assets	75.8	166.8	120.0	81.9	8.0	508.5	508.3	0.0	478.2	6.3
	(percent)									
Financial Ratios										
Return on Equity[f]	13.6	4.1		0.2		15.3	4.6		15.1	
Dividends/Net Income	49.9	158.1		3,663.2		47.5	147.7		43.2	
Dividends/Cash Flow	26.3	30.6		31.3		21.6	25.4		19.3	
Debt/Equity[g]	26.6	35.8		47.1		43.3	54.8		42.1	

[a]Includes incorporated U.S. petroleum and natural gas and coal companies that were foreign-affiliated at 1998 year-end and for which publicly reported financial information is available. The foreign-parent companies of Amoco and BP America (BP Amoco in 1998), Maxus Energy (YPF Sociedad Anónima) and Petsec Energy (Petsec Energy Ltd) are included in the totals instead of the FDI affiliates because data for Amoco, BP America, Maxus Energy, and Petsec Energy are not separately disclosed. For **1997** these companies are: Anadarko Petroleum, Arabian Shield Development, Blue Dolphin Energy, Canadian Occidental Petroleum, Chieftain International, Fina, Forcenergy, Hondo Oil and Gas, Louis Dreyfus Natural Gas, Lyondell Petrochemical, Dynegy, Oceanic Exploration, Petsec Energy Ltd, Queen Sand Resources, Ranger Oil, Rio Algom, Saba Petroleum, Santa Fe International, Schlumberger, Shell Oil, and YPF Sociedad Anónima. In **1998** the following U.S. energy companies became foreign affiliated or, if foreign based, acquired U.S. energy assets or refining capacity: BP Amoco, and Meridian Resources. The following company was excluded from the totals because data for one ye

[b]The comparison group is derived from aggregates available from Standard and Poor's PC Compustat Industrial File for the following four digit (SIC) industries: 1220 (bituminous coal, lignite mining), 1221 (bituminous coal, lignite surface mining), 1311 (crude petroleum and natural gas production), 1381 (oil and gas well drilling), 1382 (oil and gas field exploration), 1389 (oil and gas field services not elsewhere classified), and 2911 (petroleum refining). To obtain the comparison group aggregates, the Compustat aggregates were adjusted by subtracting data for companies which have been identified as foreign-affiliated, or whose operations are foreign-based, or foreign-based companies whose U.S. operations are already included in U.S. companies identified as foreign-affiliated.

[c]Excludes companies that were not foreign-affiliated in 1997.

[d]Excludes companies that were not in the comparison group in 1998.

[e]Measured as cash flow from operations.

[f]Defined as net income divided by year-end stockholders' equity.

[g]Defined as year-end long-term debt divided by year-end stockholders' equity.

NM = not meaningful.

Note: Percent changes were calculated from unrounded data.

Source: Compiled from PC Compustat Industrial File and company annual reports.

Comparing the financial results of foreign-affiliated petroleum and natural gas and coal companies to all other petroleum and natural gas and coal companies between 1997 and 1998 is problematic because there were substantial changes in the composition of the groups between those years. Petroleum and natural gas and coal companies that were foreign-affiliated in both years had proportionally much larger revenue declines in 1998 than did all other U.S. petroleum and natural gas and coal companies that were not foreign-affiliated in both years (Table 12). In addition, continuing FDI affiliates experienced an almost total collapse in net income that year. Cash flow for the continuing FDI affiliates was down, but less steeply than for all other continuing U.S. energy producers. Capital expenditures and total assets increased for both sets of companies.

When non-continuing companies are included in the two groups, the comparisons change, especially for the FDI affiliates. Adding BP Amoco to the foreign-affiliated petroleum and natural gas and coal companies in 1998 (but not 1997) results in the group's performance generally improving in 1998.[27] For the comparison companies, when Amoco is added to the 1997 totals (but not 1998's), the results for the group are notably worse.

Not surprisingly, given the preceding results, the financial ratios for the foreign-affiliated companies and all other companies were generally poorer in 1998 than in 1997 (Table 12). Usually the differences between the continuing and non-continuing companies were not as striking for the financial ratios as they were for the financial items discussed above because the financial items are total amounts. Adding (or subtracting) a large company to a group total amount usually has a larger effect on the result than adding it to a group ratio. Because of minimal net income, return on equity was almost zero in 1998 and the dividends to net income ratio was enormous for the continuing foreign-affiliated companies. The dividends to cash flow ratio increased similarly for FDI affiliates and for all other companies. Both groups' debt to equity ratio rose as many companies' capital expenditures outpaced their cash flow, resulting in increased debt loads incurred to meet the cash shortfall.[28]

U.S. Companies' Direct Investment Abroad in Energy

The counterpart to FDI in the United States is U.S. direct investment abroad (DIA).[29] In 1998, the DIA position of U.S. investors increased 13 percent, to almost $1 trillion valued at historical cost (Table 13). A considerable portion of this increase was composed of acquisition activity by U.S. direct investors in the electric utility, manufacturing, insurance, and services industries.[30] The DIA position in foreign petroleum and natural gas industry increased 11 percent in the same year. However, the growth in the DIA position in foreign petroleum and natural gas industry has lagged the growth in the overall DIA position substantially over the last two decades.

The DIA position in foreign petroleum and natural gas increased by an amount slightly less than did the FDI position in U.S. petroleum and natural gas in 1998. Over the last two decades, the DIA and FDI positions in petroleum and natural gas have followed remarkably different trends (Figure 5). During most of the 1980's, the FDI position in U.S. petroleum and natural gas grew steadily while the DIA position in petroleum and natural gas abroad was effectively flat. For much of the 1990's, the DIA position grew steadily, while the FDI position declined in the early 1990's, but generally has been growing since then. The result of these two growth patterns is that, while the DIA position has always exceeded the FDI position, the difference was almost eliminated in the 1980's but has since grown in the 1990's.

DIA in Petroleum and Natural Gas Continues Focus on the United Kingdom and Canada

In 1998, the United Kingdom and Canada remained the two countries with the largest DIA positions in petroleum and natural gas (Table 14), together accounting for 31 percent of the DIA position at the end of that year. These two countries plus Australia had the largest increases in the amount of their DIA position in 1998, while Australia and Nigeria recorded the largest percentage increases. Australia has had large increases in exploration activity and reserves in recent years,[31] while Chevron, Conoco, Texaco, and Exxon and Mobil (now ExxonMobil), all have major projects in Nigeria.[32]

Direct Investment Abroad in Electric Power Continues to Grow

U.S. companies appear to be continuing to step-up their direct investment abroad in the electric power industry (Figure 6). Although the Bureau of Economic Analysis does not publish the DIA position for electric power

Table 13. U.S. Direct Investment Abroad Position in Oil and Gas Industry, 1980-1998

	Direct Investment Abroad Position in Oil and Gas		Total Direct Investment Abroad Position		Oil and Gas as Share of Total
	(Billion Dollars)	Change (percent)	(Billion Dollars)	Change (percent)	(percent)
1980	47.6	--	215.4	--	22.1
1981	53.2	11.8	228.3	6.0	23.3
1982	57.8	8.6	207.8	-9.0	27.8
1983	57.6	-0.3	207.2	-0.3	27.8
1984	58.1	0.9	211.5	2.1	27.5
1985	57.7	-0.7	230.2	8.8	25.1
1986	58.5	1.4	259.8	12.9	22.5
1987	59.8	2.2	314.3	21.0	19.0
1988	57.8	-3.3	335.9	6.9	17.2
1989	48.3	-16.4	381.8	13.7	12.7
1990	52.8	9.3	430.5	12.8	12.3
1991	57.7	9.3	467.8	8.7	12.3
1992	58.5	1.4	502.0	7.3	11.7
1993	64.2	9.7	564.3	12.4	11.4
1994[a]	67.6	5.3	612.9	NM	11.0
1995	68.6	1.5	699.0	14.1	9.8
1996	75.2	9.6	795.2	13.8	9.5
1997	82.2	9.3	865.5	8.8	9.5
1998	91.1	10.8	980.6	13.3	9.3

[a]In 1998, the Bureau of Economic Analysis reclassified intercompany debt and associated interest transactions between parent companies and their affiliates that are nondepository financial intermediaries from direct investment to transactions with unaffiliated foreigners beginning with data for 1994. Thus there is a break between 1993 and 1994 in the Total U.S. Direct Investment Abroad and Petroleum as a Percent of Total series.

NM = not meaningful.

Notes: U.S. direct investment abroad position is the value of U.S. direct investors' net equity in, and outstanding loans to, their affiliates outside of the United States at the end of the year. Amounts are on a historical-cost, or book-value, basis. 1998 estimates are preliminary; 1997 and 1996 estimates are revised. (The Bureau of Economic Analysis usually continues to revise direct investment data for several years after they are first published.) Sum of components may not equal total due to independent rounding.

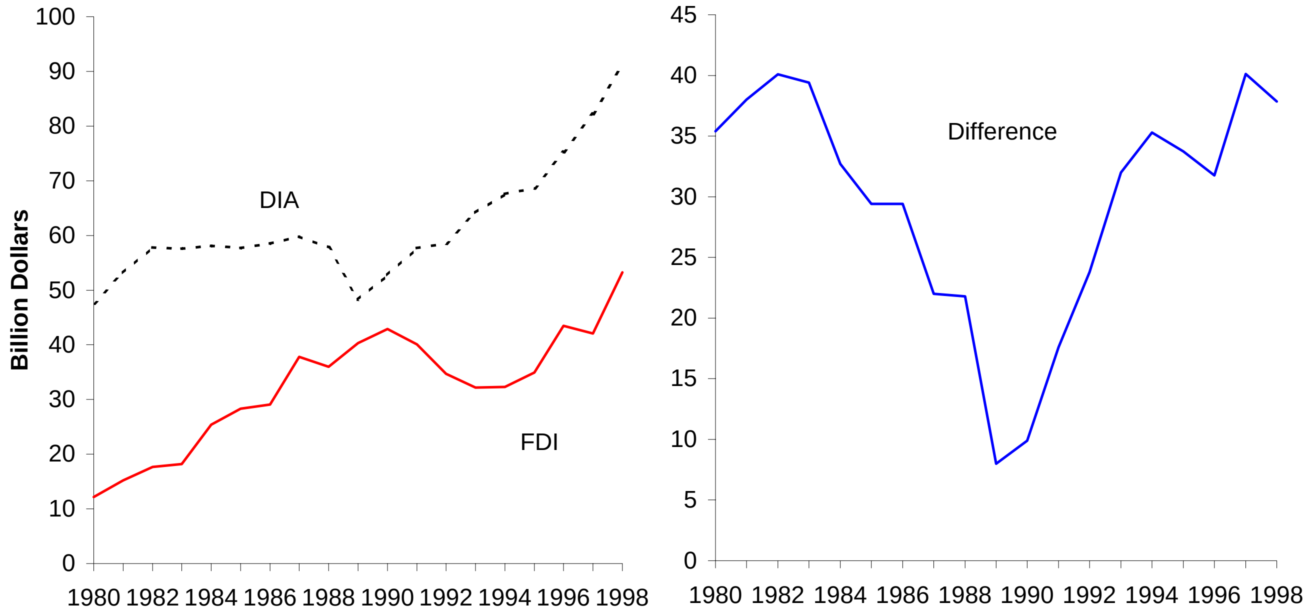
Source: Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, September 1999), Table 17, and preceding issues.

separately, it reports that the DIA position in electric, gas, and sanitary services jumped over $9 billion in 1998.[33] Other publicly available data suggest that the DIA position in electric, gas, and sanitary services, at least in recent years, has been dominated by transactions in electric power. The DIA position in electric, gas, and sanitary services has increased more each year beginning in 1995.

Two factors are in part responsible for the increased DIA position in electricity. One is the U.S. Energy Policy Act of 1992, which removed Federal legislative impediments to overseas investments by U.S. electric utilities. The other is the ongoing privatization and deregulation of the electric power industry overseas.

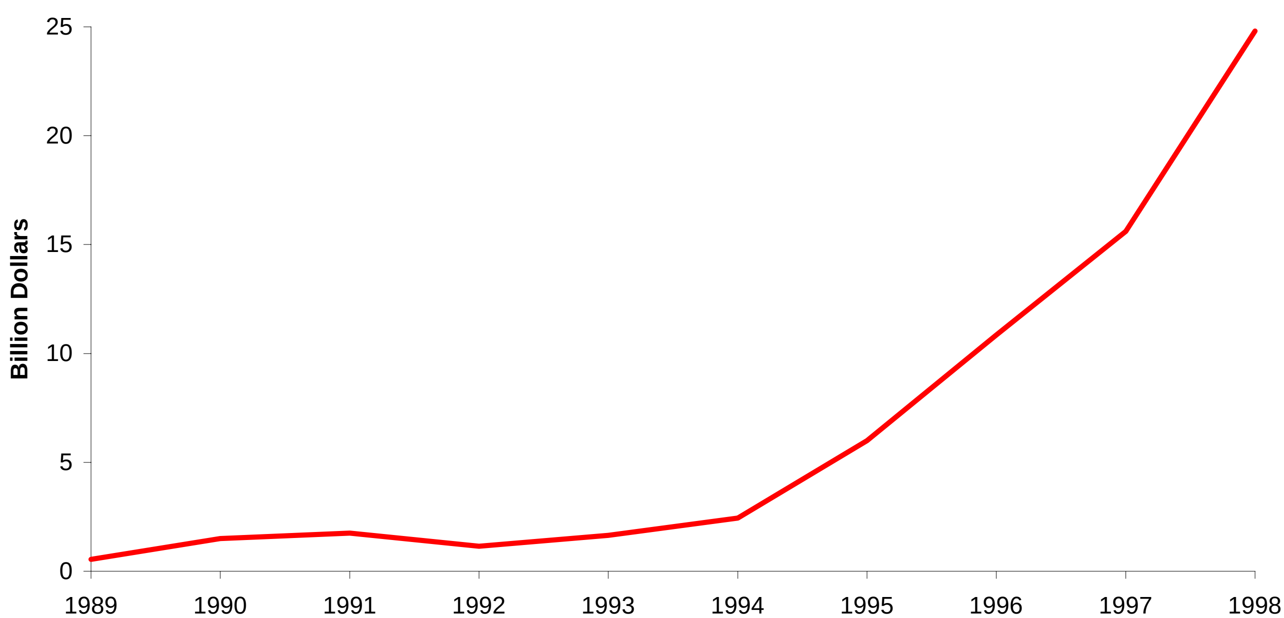
The largest acquisition of foreign electric power assets in 1998, apparently accounting for the bulk of the increase in DIA in electric, gas, and sanitary services that year, was Texas Utility's (now TXU) acquisition of the Energy Group (United Kingdom) for $7.4 billion. Texas Utilities won a bidding war with PacifiCorp for the Energy Group. The transaction precipitated the acquisition of the Peabody Group by Lehman Brothers Holdings,

Figure 5. U.S. Direct Investment Abroad Position in Foreign Oil and Gas Industry and Foreign Direct Investment Position in U.S. Oil and Gas Industry, 1980-1998



Source: Sylvia E. Bargas and Rosaria Troia, "Direct Investment Positions for 1998," *Survey of Current Business* (Washington, DC, July 1999), Tables 3.1, 3.2, 4.1, and 4.2, and previous issues.

Figure 6. U.S. Direct Investment Abroad Position in Electric, Gas, and Sanitary Services, 1989-1998



Sources: Bureau of Economic Analysis, "U.S. Direct Investment Abroad," *Survey of Current Business* (Washington, DC, September 1999), Table 17, and preceding issues.

Table 14. U.S. Direct Investment Abroad Position in Oil and Gas Industry, by Selected Countries, 1997-1998
(Billion Dollars)

	Direct Investment Abroad Position		
	1997	1998	Net Additions
All Countries	82.2	91.1	8.9
Canada	11.0	12.6	1.5
Europe	28.0	30.6	2.6
United Kingdom	13.9	15.6	1.8
Norway	3.7	4.0	0.4
Latin America and OWH[a]	9.9	9.7	-0.2
Brazil	1.9	1.8	-0.1
Argentina	1.4	1.6	0.1
Venezuela	1.3	1.5	0.2
Colombia	1.6	1.2	-0.4
Africa	6.4	9.0	2.6
Nigeria	1.2	1.7	0.5
Egypt	1.3	1.4	0.1
Middle East	2.8	3.0	0.3
Asia and Pacific	21.2	23.2	2.0
Indonesia	4.0	4.6	0.6
Japan	4.2	4.5	0.3
Australia	3.0	4.3	1.3

[a]Other Western Hemisphere

Notes: U.S. direct investment abroad position is the value of U.S. direct investors' net equity in, and outstanding loans to, their affiliates outside of the United States at the end of the year. Amounts are on a historical-cost, or book-value, basis. 1998 estimates are preliminary; 1997 estimates are revised. (The Bureau of Economic Analysis usually continues to revise direct investment data for several years after they are first published.) Sum of components may not equal total due to independent rounding.

Source: Bureau of Economic Analysis, "U.S. Direct Investment Abroad," *Survey of Current Business* (Washington, DC, September 1999), Tables 10.2-10.3.

discussed above as an FDI divestiture. The Energy Group owned Eastern Electricity, a supplier of electric power to about 3 million customers in the UK, which accounted for about 10 percent of the UK total electricity generating capacity. It was the eighth UK regional electricity company to be acquired by a U.S. company since privatization began there (although two have since sold their interests to non-U.S. companies). The Energy Group also was engaged in the full span of natural gas activities, exploration and production, marketing, and distribution.

Other major DIA acquisitions in 1998 include Enron's purchase of Elektro-Electricidades e Serviços, Brazil's sixth-largest electricity distributor, for $1.3 billion. Elektro serves 1.5 million customers, mostly in the state of Sao Paulo. American Electric Power acquired CitiPower, an Australian electricity distribution company serving Melbourne, for $1.1 billion. However, this acquisition did not add to the DIA position because Entergy had previously owned CitiPower.

Endnotes

[1] The purpose of the foreign direct investment report is to provide an assessment of the degree of foreign ownership of energy assets in the United States. Section 657, Subpart 8 of the U.S. Department of Energy Organization Act (Public Law 95-91) requires an annual report to Congress which presents: "… a summary of activities in the United States by companies which are foreign owned or controlled and which own or control United States energy sources and supplies…."

[2] In the United States, the criterion for foreign direct investment is specified by the International Investment and Trade in Services Survey Act. The act defines foreign direct investment in the United States as "the ownership or control, directly or indirectly, by one foreign investor of 10 percent or more of the voting securities of an incorporated U.S. business enterprise, or the equivalent interest in an unincorporated U.S. business enterprise." See Alicia M. Quijano, "A Guide to BEA Statistics on Foreign Direct Investment in the United States," *Survey of Current Business* (Washington, DC, February 1990), pp. 29-37, for further discussion. The *Survey of Current Business* can be found at http://www.bea.doc.gov.

[3] The percentage amount is, of necessity, "arbitrary," because no specific percentage of ownership is necessary to constitute control. For further discussion and a comprehensive analysis of FDI in the United States, see Edward M. Graham and Paul R. Krugman, *Foreign Direct Investment in the United States*, 3rd ed. (Washington, DC: Institute for International Economics, 1995).

[4] There also may be various estimates of the values of some of the FDI transactions. EIA makes no independent attempt to value these transactions.

[5] However, this acquisition was only somewhat larger than another, FDI-related acquisition in 1998, Daimler-Benz's purchase of Chrysler.

[6] Subsequently, in April 2000, BP Amoco acquired ARCO after protracted negotiations with the Federal Trade Commission and after agreeing to sell ARCO's Alaskan North Slope oil production assets to Phillips Petroleum as well as its Cushing, Oklahoma, pipeline and storage assets. The ARCO purchase only solidifies BP Amoco's position among the super majors, the other two of which are ExxonMobil and Royal Dutch/Shell.

[7] For updated information regarding mergers involving major U.S. energy producers, see http://www.eia.doe.gov/emeu/finance/mergers.html.

[8] The new shares are in the form of American Depository Receipts.

[9] "BP-Amoco finish merger after FTC approval," *Oil&Gas Journal* (January 11, 1999), pp. 30-32.

[10] More specifically, it is the year-end book value of the foreign parent group's equity (including retained earnings) in, and net outstanding loans to, their affiliate in the United States. In other words, it is the cumulative value of net capital flows into the United States from foreign direct investors.

[11] While measures valued on a market cost basis and a current cost basis are available for total FDI amounts, the only measure of FDI available with country and industry detail is the one valued on an historical cost basis. The FDI measure discussed here is the one valued at historical cost.

[12] In some instances, the industry classification of the FDI transaction also is classified by the industry of the ultimate beneficial owner of the FDI affiliate.

[13] For further information, see Sylvia E. Bargas and Rosaria Troia, "Direct Investment Positions for 1998, Country and Industry Detail" *Survey of Current Business*, (Washington, DC, July 1999), pp. 48-59. The discussion here draws heavily on this article.

[14] Total international capital flows were almost entirely offsetting. However, the FDI position was affected only by the acquisition of the stock of the two U.S. companies by the two foreign companies, not the acquisition of relatively small amounts of stock in foreign companies by a large number of U.S. stockholders.

[15] The capital inflows for these two transactions were much larger than the change in FDI position because the values of the capital inflows, which are measured at their transactions values, had to be adjusted downward to be included in the FDI position used here, which is measured at historical or book value.

[16] These are actual investment outlays not adjusted to historical costs. See Mahnaz Fahim-Nader, "Foreign Direct Investment in the United States: New Investment in 1998," *Survey of Current Business* (Washington, DC, June 1999), Table 4.

[17] Motiva Enterprises, a joint venture of Shell, Texaco, and Saudi Aramco, was also created in 1998. However, all of its sales were included in FDI amounts in 1997 through either Star Enterprise, a joint venture of Texaco and Saudi Aramco, or Shell Oil.

[18] Motiva did not contribute to the increase because all of its retail outlets were FDI affiliates in 1997.

[19] The transaction was actually consummated on May 19, 1998. However, the data for coal production are not reported by the ultimate owner of the coal produced, but by the operating company that actually does the mining. Thus, the production amount for Peabody cannot be separated between the two periods when it was and was not foreign affiliated. In the data presented here, none of Peabody's coal production in 1998 was included in foreign-affiliated production.

[20] Energy Information Administration, *Annual Energy Review 1999*, DOE/EIA 0384(99) (Washington, DC, July 2000), Table 9.3.
[21] Energy Information Administration, *Nuclear Power Generation and Fuel Cycle Report 1997*, DOE/EIA-0436(97) (Washington, DC, September 1997), pp. 22-23.
[22] For a discussion of the effects of disarmament on uranium prices, see Energy Information Administration, *Commercial Nuclear Fuel from U.S. and Russian Surplus Defense Inventories: Materials, Policies and Market Effects*, DOE/EIA-0619 (Washington, DC, May 1998), ch. 7.
[23] The EIA does not collect uranium exploration and development expenditure statistics for foreign-affiliated companies, only for contributions to exploration and development expenditures by foreign majority-owned companies. The requirement of majority ownership is more restrictive than the FDI requirement of 10-percent ownership.
[24] The decline was in part due to the formation of the joint ventures Altura Energy and Aera Energy during 1997. These affiliates are accounted for on an equity basis and not included in Shell's consolidated financial statements.
[25] Energy Information Administration, *Performance Profiles of Major U.S. Energy Producers 1998*, ch. 1, http://www.eia.doe.gov/emeu/perfpro/chapter1.html, January 2000.
[26] Energy Information Administration, *Performance Profiles of Major U.S. Energy Producers 1998*, Table 3, http://www.eia.doe.gov/emeu/perfpro/tab2-02.html, January 2000.
[27] Because Meridian Resources is so small, removing it from the 1998 totals for the FDI affiliates (and from the 1997 totals for the others) has little effect on the results.
[28] For further discussion of these cash-flow effects, see *Performance Profiles of Major Energy Producers 1998*, ch. 2, http://www.eia.doe.gov/emeu/perfpro/chapter2.html, November 30, 1999.
[29] U.S.-affiliated companies (DIA affiliates) are foreign businesses in which a U.S. entity holds an ownership interest of 10 percent or more.
[30] Bureau of Economic Analysis, "U.S. Direct Investment Abroad Detail for Historical-Cost Position and Related Capital and Income Flows, 1998," *Survey of Current Business* (September 1999), Table 17.
[31] M.T. Bradshaw, C.B. Foster, M.E. Fellows, and D.C. Rowland, "Patterns of Discovery in Australia: Part 2, *Oil&Gas Journal* (June 14, 1999), p. 114.
[32]Marshall DeLuca, "Deepwater Discoveries Keep West Africa at Global Forefront," *Offshore* (February 1999).
[33] Bureau of Economic Analysis, "U.S. Direct Investment Abroad Detail for Historical-Cost Position and Related Capital and Income Flows, 1998," *Survey of Current Business* (September 1999), Table 17.

Appendix A

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1998 Through December 1998 - Acquisitions and Divestitures

Parent Company Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Size of Transaction (million dollars)	Date of Transaction
		Acquisitions			
British Petroleum Plc (United Kingdom)	Integrated Petroleum Operations	Amoco Corp	Integrated petroleum operations	53,000.0	December
Royal Dutch/Shell Group (Netherlands/United Kingdom) Shell Oil Co.	Integrated Petroleum Operations	Tejas Gas Corp	Natural gas gathering and transmission	3,000.0	January
Nopec International Corp (Norway) Nopec Geophtsical ASA	Seismic services	TGS-Calibre Geophysical Co	Drilling services	305.0	June
Stolt Comex Seaway SA (Scotland)	Drilling services	Ceanic Corp	Drilling services	222.8	August
Investors (Canada, Barbados) Queen Sand Resources	Oil and gas exploration and production	Morgan Guaranty Trust	Investment Banking, Trust services	150.0	April
Sonatrach (Algeria) Anadarko Petroleum Co	Oil and gas exploration and production	Occidental Petroleum	Integrated petroleum operations, Chemicals	120.0	April
RIS Resources International (Canada) RIS Resources Inc	Natural gas gathering, processing and marketing	Western Gas Resources Inc	Natural gas gathering, processing and marketing	86.5	September
British-Borneo Oil & Gas Plc (United Kingdom)	Oil and gas exploration and production	Discovery Producer Services LLC	Gas processing, transmission	80.3	May
Petroleum Geo-Services ASA (Norway)	Oil and gas field exploration services	Acadian Geophysical Services Inc	Drilling services	35.0	July
British-Borneo Oil & Gas Plc (United Kingdom)	Oil and gas exploration and production	Reading & Bates	Drilling services	25.0	NA
IPEC Ltd. (Canada)	Oil and gas exploration and production	Grey-Mak Pipe Inc	Drilling Services	16.0	April
Investor Group (Canada)	Investment Holdings	Nescor Energy	Oil and gas exploration and production	14.3	January
Ohio Resources Corp (Canada)	Oil and gas exploration and production	Xeno Corp	Oil and gas exploration and production	2.0	June
Sonatrach (Algeria) Anadarko Minerals Inc	Oil and gas exploration and production	Delta Petroleum	Oil and gas exploration and production	1.4	November

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1998 Through December 1998 - Acquisitions and Divestitures (continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Size of Transaction (million dollars)	Date of Transaction
		Acquisitions (continued)			
Lonrho Plc (United Kingdom)	Oil and gas exploration and production	Hondo Oil and Gas	Oil and gas exploration and production	0.2	December
Royal Dutch/Shell Group (Netherlands/United Kingdom) Coral Energy LP	Oil and gas exploration and production	Coral Redwood LLC	Oil and gas exploration and production	Undisclosed	April
Canadian Fracmaster Ltd (Canada)	Oil and gas exploration and production	Coleman Cementing Inc	Drilling services	Undisclosed	February
Petrofina SA (Belgium)	Oil and gas exploration and production	Fina Inc	Petroleum refining	Undisclosed	August
Canadian Fracmaster Ltd (Canada)	Oil and gas exploration and production	TransTexas Gas Corp	Drilling services	Undisclosed	May
Canadian Fracmaster Ltd (Canada)	Oil and gas exploration and production	Western Acidizing Service Co	Oilfield simulation services	Undisclosed	February
		Divestitures			
Tesoro Petroleum	Petroleum refining, products	**Broken Hill Proprietary Co Ltd** (Australia) BHP America Petroleum Refining	Petroleum refining	312.0	May
Tesoro Petroleum	Petroleum refining, products	**Royal Dutch/Shell Group** (United Kingdom/ Netherlands) Shell Oil Co	Oil and gas exploration and production	276.6	August
Clark USA	Petroleum refining, products	**British Petroleum Plc** (United Kingdom)	Integrated petroleum operations	217.0	August
Forcenergy	Oil and gas exploration and production	**Forcenergy AB** (Sweden)	Holding Company	214.0	March
TransMontaigne	Oil and gas exploration and production	**Louis Dreyfus et Cie** (France) Louis Dreyfus Energy Corp	Oil and gas exploration and production	161.0	November
Energen Resources/ Westport Oil and Gas	Oil and gas exploration and production	**Total** (France) Total Minatome	Oil and gas exploration and production	132.0	September
Enogex	Natural gas pipeline operations	**NGC Corp** (Canada) Ozark Gas Transmission System	Natural gas gathering, processing and marketing	55.0	August
Meridian Resources	Oil and gas exploration and production	**Royal Dutch/Shell Group** (United Kingdom/ Netherlands) Shell Oil Co	Oil and gas exploration and production	42.5	June

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1998 Through December 1998 - Acquisitions and Divestitures (continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Size of Transaction (million dollars)	Date of Transaction
		Divestitures (continued)			
Cross Timbers Oil	Oil and gas exploration and production	**Royal Dutch/Shell Group** (United Kingdom/ Netherlands) Shell Oil Co	Oil and gas exploration and production	35.8	October
PANACO	Oil and gas exploration and production	**British Petroleum Plc** (United Kingdom) BP Exploration Co	Oil and gas exploration and production	19.5	May
Miller Petroleum	Oil and gas exploration and production	**Arakis Energy Corp** (Canada) AKS Energy Inc	Oil and gas exploration and production	2.3	February
Union Pacific Resources	Oil and gas exploration and production	**Norcen Energy Resources** (Canada)	Oil and gas exploration and production	U.S. Assets Value Undisclosed	March
Coral Energy LP	Oil and gas exploration and production	**Royal Dutch/Shell Group** (Netherlands/ United Kingdom) Coral Redwood	Oil and gas exploration and production	Undisclosed	April
Synergy Oil & Gas	Oil and gas exploration and production	**Petrofina SA** (Belgium) Fina Oil & Chemical	Petroleum refining	Undisclosed	September
Navajo Refining Co.	Petroleum refining, products	**Petrofina SA** (Belgium) Fina Pipe Line Co	Pipeline operations	Undisclosed	September

Sources: *The Wall Street Journal*, various issues, 1998 and 1999; *Business Week*, various issues; company financial reports: annual reports to stockholders, annual reports on Securities and Exchange Commission (SEC) Form 10-K, and filing on SEC Schedule 13-D; *Oil & Gas Journal*, various issues, 1998 and 1999, Pennwell Publishing, Tulsa, OK; *The Merger Yearbook U.S./International Edition* 1999, Securities Data, New York, NY; *Oil and Gas Investor*, September 1998 and March 1999, Hart Publications, Denver, CO.

Table A2. Completed Transactions by Size in the Coal Industry from January 1998 Through December 1998- Acquisitions and Divestitures

Parent Company Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Size of Transaction (million dollars)	Date of Transaction
		Acquisitions			
Rio Tinto Plc (United Kingdom) Kennecott Energy	Coal mining	Jacobs Ranch Coal Mine	Coal mining	400.0	July
Rheinbraun AG (Germany)	Coal mining, wholesale coal	Consol Coal Co	Coal mining	Undisclosed	September
Rio Algom Ltd (Canada)	Coal mining, metals	Crandon Mining Co	Coal mining	Undisclosed	January
		Divestitures			
Lehman Brothers Holdings/ P&L Coal Holdings	Holding company	**Energy Group Plc (**United Kingdom)	Investment holdings	2,300.0	May
AEI Resources Inc	Coal mining, holding company	**Mitsui Matsushima Co** (Japan) Bowie Resources Inc	Coal mining	11.5	September
Rheinbraun AG	Coal mining, wholesale coal	**RWE AG** (Germany) Consol Coal Co	Coal mining	Undisclosed	September
Rio Algom Ltd	Coal mining, metals	**Rio Tinto-Zinc Corp** (Canada) Crandon Mining Co	Coal mining	Undisclosed	January

Source: *The Merger Yearbook U.S./International Edition* 1999, Securities Data Company, New York, NY.