Financial Developments

The Energy Information Administration's (EIA) *Performance Profiles of Major Energy Producers 2006* provides a financial review and analysis of the domestic and worldwide activities and operations of the major U.S.-based energy-producing companies. *Performance Profiles* examines companies' operations on a consolidated corporate level, by individual lines of business, by major functions within each line of business, and by various geographic regions. The report focuses on annual aggregate changes in profits, cash flow, and investment in the United States and international energy industry, and also explores changes in the majors' exploration and development expenditures, reserve additions, and refining costs and margins. The analysis in this report is based on detailed financial and operating data and information submitted each year to the EIA on Form EIA-28, the Financial Reporting System (FRS).

Net Income and Profitability

Net income for the FRS companies in 2006 reached an all-time high, rising to $131 billion (**Table 1**), which represents an increase of 7 percent (in constant 2006 dollars)[1] over the 2005 level. It was the third consecutive year that net income for the FRS companies reached a record high (**Figure 1**). The 2006 net income was nearly double the FRS companies' 1980 net income, which had been the highest in the survey for 23 years prior to 2004. Excluding unusual items, net income in 2006 rose by 9 percent.

Table 1. Consolidated Income Statement for FRS Companies and Census' All Manufacturing Companies, 2005-2006
(Billion 2006 Dollars)

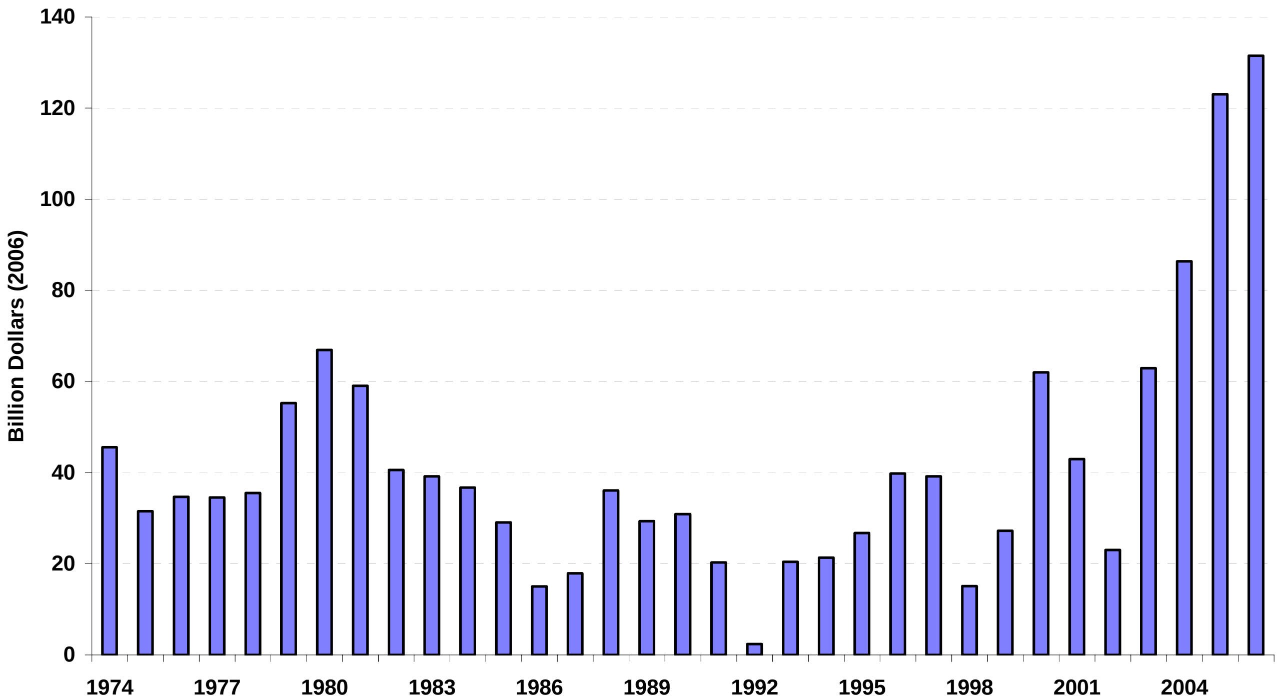
	FRS Companies			All Manufacturing Companies		
Income Statement Items	2005	2006	Percent Change 2005-2006	2005	2006	Percent Change 2005-2006
Operating Revenues	1376.2	1389.0	0.9	5,571.3	5,790.3	3.9
Operating Expenses	1201.8	1194.3	-0.6	5,202.4	5,380.6	3.4
Operating Income (Revenues minus Expenses)	174.4	194.7	11.6	368.9	409.5	11.0
Interest Expense	-11.0	-11.8	7.3	-90.7	-95.8	5.6
Other Revenue (Expense)	32.9	39.0	18.8	258.2	295.0	14.2
Income Tax Expense	-73.3	-90.4	23.3	-125.0	-134.5	7.6
Net Income	123.0	131.5	6.9	411.4	474.2	15.3
Net Income Excluding Unusual Items	118.1	128.4	8.8	NA	NA	

Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.
NA= not available.
Sources: **FRS Companies**: Energy Information Administration Form EIA-28 (Financial Reporting System); **All Manufacturing Companies:** U.S. Census Bureau, Quarterly Financial Report.

Operating revenues increased by 1 percent in 2006 from the 2005 level, driven by higher crude oil and petroleum product prices (see the section, Overview of 2006 Petroleum and Natural Gas Markets). Lower natural gas

[1] Unless otherwise indicated, all dollar values and percentage changes in this report are based in constant 2006 dollars, adjusted using the Gross Domestic Product implicit price deflator.

Figure 1. FRS Net Income, 1974-2006



Note: The FRS group of companies has changed incrementally over the years. See footnote 2.
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

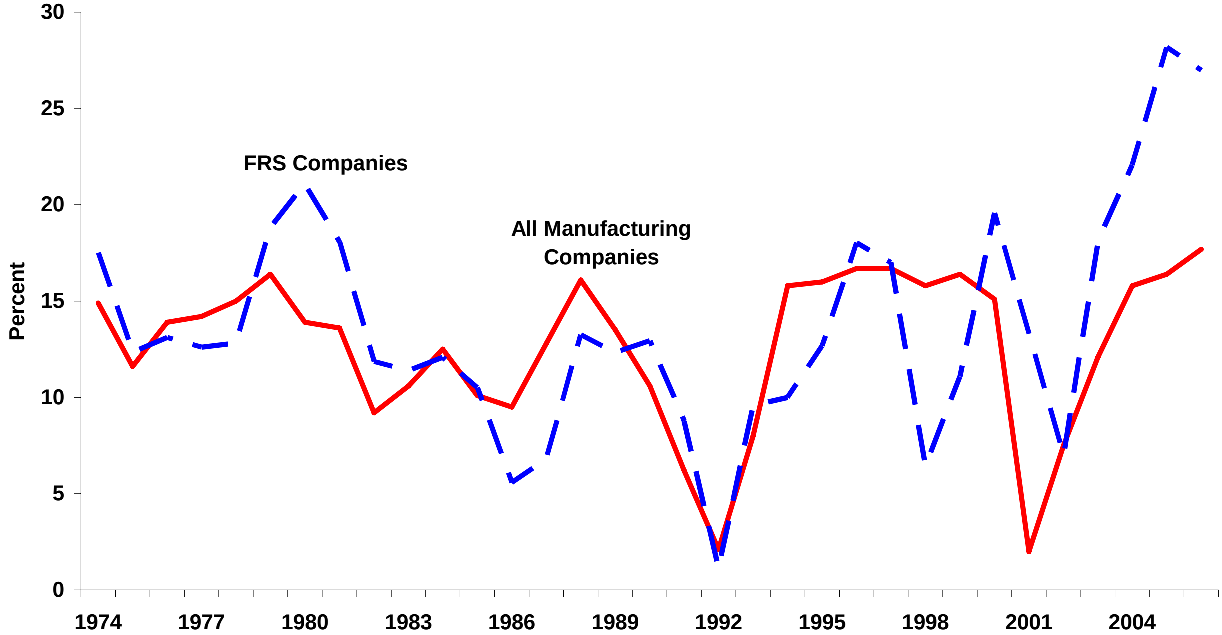
wellhead prices in 2006 moderated the revenue increase compared to that of the previous three years. Operating expenses declined slightly, which further contributed to the rise in net income.

Profitability—the measure of a company's or an industry's net income relative to the equity or capital provided by its investors—declined to 27 percent in 2006. Even though the FRS companies' return on stockholders' equity (ROE) was lower than in 2005, it was still considerably higher than for any other year in the survey except 2005 (**Figure 2**). The profitability of the FRS companies continued to outpace industry benchmarks (**Figure 3**). The FRS companies' ROE averaged 7 percentage points higher than that of the Census Bureau's All Manufacturing Companies from 2000 to 2006, compared to an average 2 percentage points lower from 1985 to 1999.

Among the FRS companies' lines of business and business segments, oil and natural gas production continued to be the most profitable, contributing $92 billion in net income (**Table 2**). Refining/marketing provided an additional $32 billion in earnings. Net income for the nonenergy line of business rose 44 percent from 2005 to $6 billion in 2006. Higher operating incomes for chemical operations contributed to the strong earnings in nonenergy. Net income in the downstream natural gas line of business also increased significantly, rising to $4 billion in 2006 as expenses, which include purchases of natural gas from production, fell further than revenues.

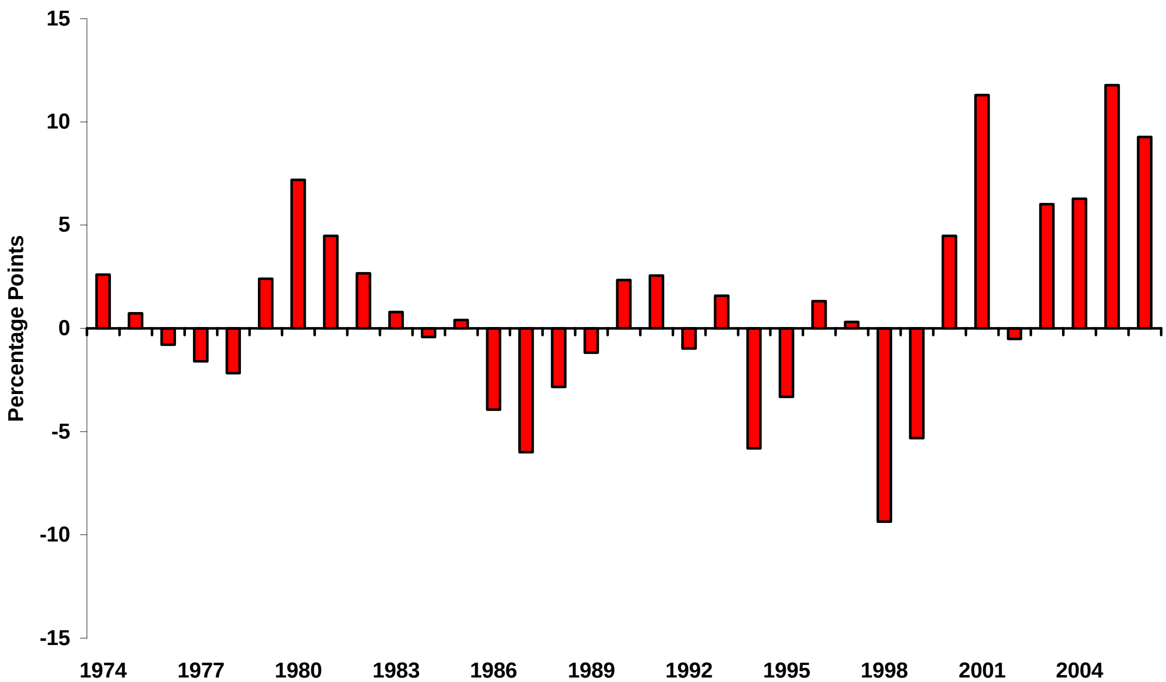
Net income in the oil and natural gas production segment increased by less than 1 percent in 2006 from 2005. Crude oil prices continued to rise in 2006, but natural gas prices fell, resulting in a much smaller increase in 2006 compared to the prior 3 years. Return on net investment in place (ROI) for the oil and natural gas production segment fell to 20 percent in 2006 from 24 percent in 2005. Despite the large decline, the 2006 ROI remained higher than

Figure 2. Return on Stockholders' Equity for FRS Companies and All Manufacturing Companies, 1974-2006



Sources: **FRS Companies**: Energy Information Administration, Form EIA-28 (Financial Reporting System). **All Manufacturing Companies**: U.S. Census Bureau Quarterly Financial Report, All Manufacturing Companies.

Figure 3. Difference Between FRS and All Manufacturing Companies Return on Stockholders' Equity, 1974-2006



Sources: **FRS Companies**: Energy Information Administration, Form EIA-28 (Financial Reporting System).
All Manufacturing Companies: U.S. Census Bureau Quarterly Financial Report, All Manufacturing Companies.

any other year in the FRS survey except 2005. ROI for domestic oil and natural gas production fell farther than that of foreign production, which considerably widened the spread between foreign and domestic (**Figure 4**).

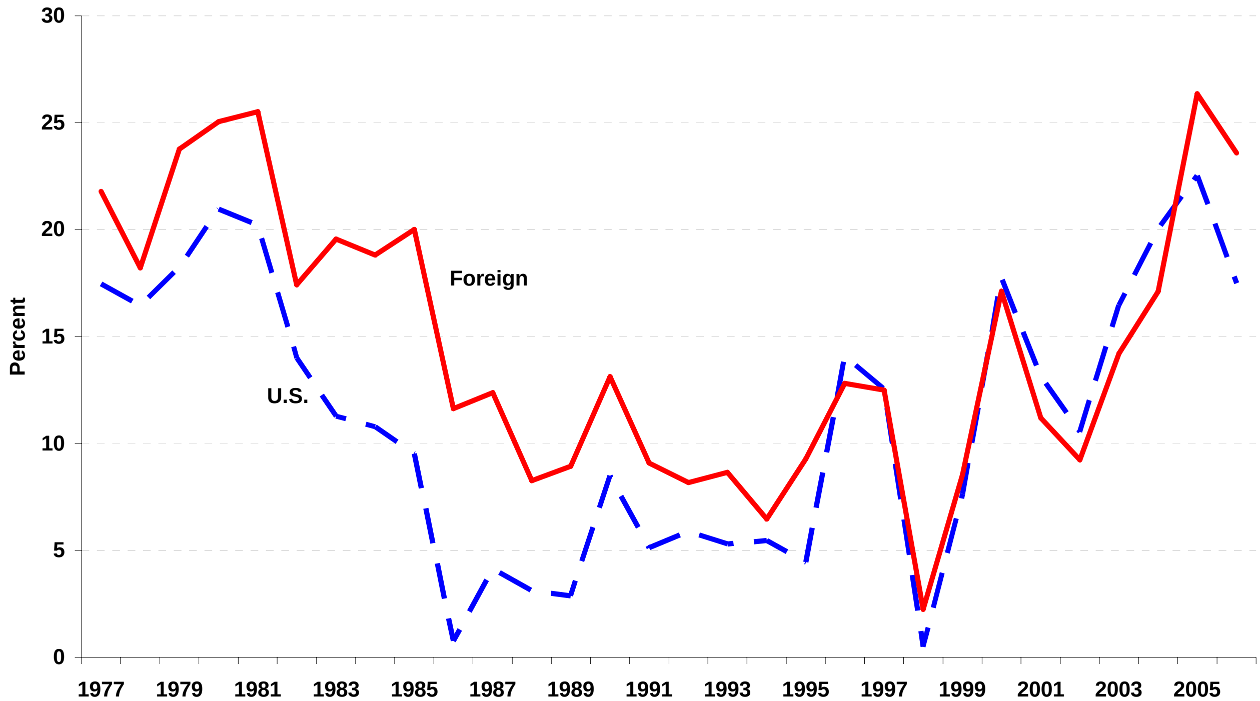
Table 2. Contributions to Net Income by Line of Business for FRS Companies, 2005-2006
(Million 2006 Dollars)

Line of Business	Net Income 2005	Net Income 2006	Net Income Percent Change 2005-2006	Net Income Excluding Unusual Items 2005	Net Income Excluding Unusual Items 2006	Net Income Excluding Unusual Items Percent Change 2005-2006
Petroleum						
U.S. Petroleum						
Oil and Natural Gas Production	41,774	41,286	-1.2	41,757	40,449	-3.1
Refining/Marketing	21,625	24,313	12.4	22,276	24,657	10.7
Pipelines	495	229	-53.8	503	165	-67.2
Total U.S. Petroleum	63,894	65,828	3.0	64,536	65,271	1.1
Foreign Petroleum						
Oil and Natural Gas Production	50,266	51,186	1.8	46,043	49,837	8.2
Refining/Marketing[a]	8,050	7,549	-6.2	7,930	7,359	-7.2
Total Foreign Petroleum	58,316	58,735	0.7	53,973	57,196	6.0
Total Petroleum	122,210	124,563	1.9	118,509	122,467	3.3
Downstream Natural Gas	2,279	4,349	90.9	2,013	4,466	121.9
Electric Power	366	1,157	215.9	738	1,367	85.2
Other Energy[b]	1,069	567	-46.9	1,124	505	-55.1
Nonenergy	4,347	6,244	43.6	4,239	6,642	56.7
Total Allocated	130,271	136,880	5.1	126,624	135,447	7.0
Nontraceable[c]	-7,290	-5,400	--	-8,560	-7,032	--
Consolidated Net Income[d]	122,981	131,480	6.9	118,063	128,416	8.8

[a]International Marine is included in Refining/Marketing.
[b]The Other Energy line of business includes coal, nuclear, and non-conventional energy.
[c]Revenues and expenses that cannot be directly attributed to a line of business.
[d]The total amount of unusual items was $4,918 million and $3,064 million in 2005 and 2006, respectively.
-- = Not meaningful.
NA = Not available.
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

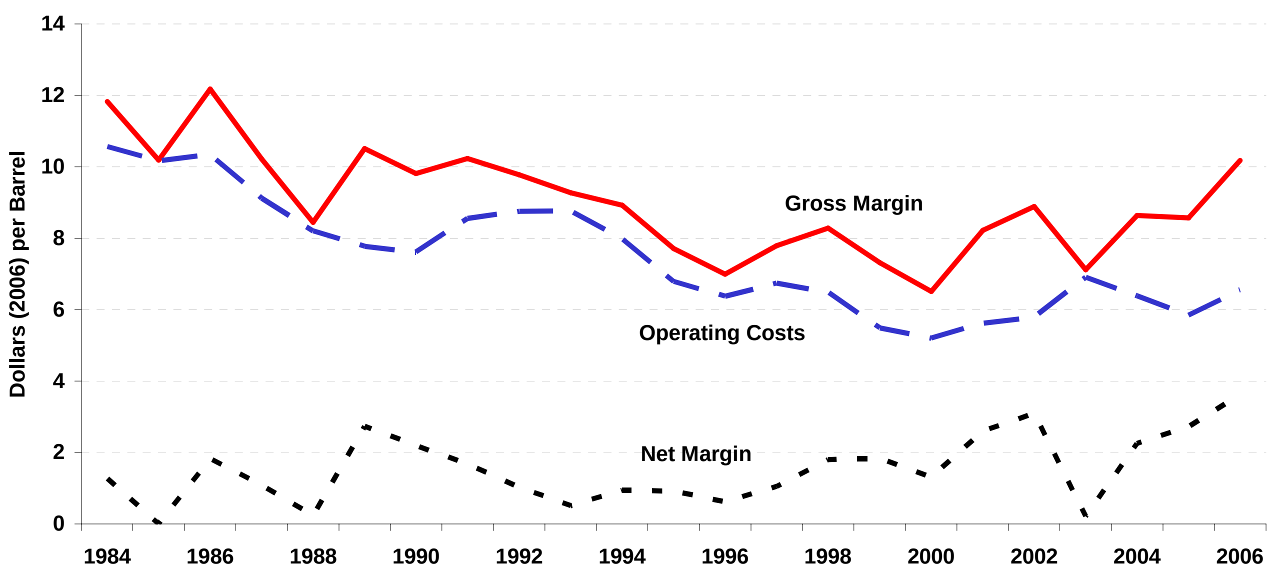
Net income for the FRS companies' refining/marketing segment increased 7 percent in 2006 from 2005. Refining/marketing continues to contribute substantially to net income, as increases in the prices for petroleum products outpace the increased costs of crude oil. The domestic refining/marketing gross margin increased $1.92 per barrel to $12.10 per barrel ($0.29 per gallon) in 2006, the highest amount since 1985 (**Figure 5**). Per-barrel operating costs also increased, but by a much smaller amount. As a result, the net refined product margin rose to $5.29 per barrel ($0.13 per gallon) in 2006, which was by far the highest net margin in the history of the FRS, $1.66 per barrel higher than the previous peak in 2005. Refining/marketing ROI reached 24 percent in 2006, also the highest in the history of the FRS survey, despite a decline in foreign refining/marketing ROI (**Figure 6**). The domestic refining/marketing segment had the highest ROI among all lines of business and business segments designated in the survey.

Figure 4. Return on Net Investment in Place for U.S. and Foreign Oil and Natural Gas Production, 1977-2006



Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

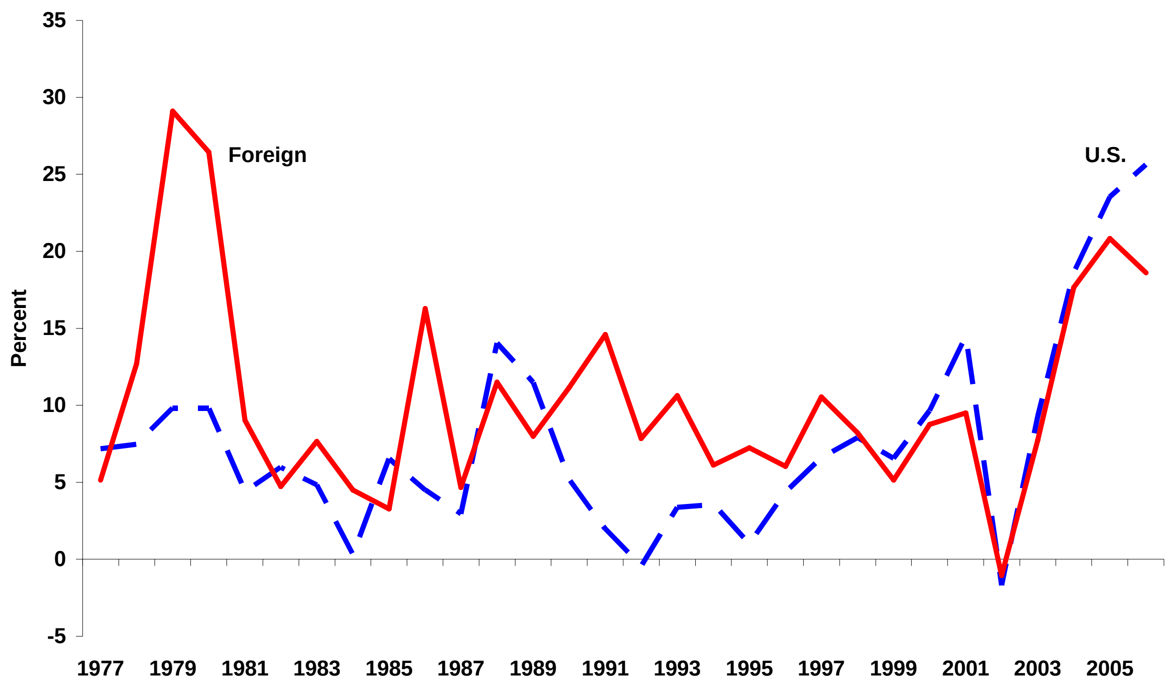
Figure 5. U.S. Refined Product Margins and Costs per Barrel of Petroleum Product Sold for FRS Companies, 1984-2006



Note: The gross margin is refined product revenues less raw material cost and product purchases divided by refined product sales volume.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Figure 6. Return on Net Investment in Place for U.S. and Foreign Refining/Marketing, 1977-2006



Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Sources and Uses of Cash

Major sources of cash include cash flow from operations, sales of assets, and proceeds from issuing debt or equity. Primary uses of cash include making capital expenditures, paying dividends, purchasing company stock, and paying off debt.

Cash flow from operations for FRS companies increased 10 percent from the previous year to $194 billion in 2006 (**Table 3**), driven by higher net income and increased allowances for depreciation, depletion, and amortization. Oil and natural gas production contributed 75 percent of the cash flow from operations (on a pre-tax basis), and refining/marketing contributed another 21 percent (**Table 4**).

In addition to funds from operations, FRS companies also raised significant amounts of cash by nearly tripling proceeds from long-term debt (**Table 3**). Meanwhile, funds used to reduce long-term debt increased by 61 percent. Major acquisitions that took place in 2006 (see the Capital Expenditures section) substantially influenced both increases. Overall, the ratio of long-term debt to stockholders' equity for FRS companies declined from 37 percent in 2005 to 35 percent in 2006 (**Table B3**), the lowest level since 1981.

Proceeds from equity security offerings more than doubled to $23 billion in 2006. This increase also was influenced by merger and acquisition activity. FRS companies obtained additional cash through a 13-percent increase in proceeds from the disposal of assets, as companies took advantage of the high-price environment to sell off noncore assets.

Table 3. Sources and Uses of Cash for FRS Companies, 2005-2006
(Billion 2006 Dollars)

Sources and Uses of Cash	2005	2006	Absolute Change 2005-2006	Percent Change 2005-2006
Main Sources of Cash				
Cash Flow from Operations	175.2	193.6	18.3	10.5
Proceeds from Long-Term Debt	30.6	87.1	56.5	184.8
Proceeds from Disposals of Assets	37.0	41.6	4.6	12.5
Proceeds from Equity Security Offerings	10.8	22.6	11.8	109.4
Main Uses of Cash				
Additions to Investment in Place	137.3	194.7	57.4	41.8
Reductions in Long-Term Debt	34.3	55.2	20.9	60.8
Dividends to Shareholders	41.0	38.5	-2.5	-6.0
Purchase of Treasury Stock	32.8	41.7	8.9	27.2
Other Investment and Financing Activities, Net	6.7	-21.8	-28.5	-424.4
Net Change in Cash and Cash Equivalents	14.9	-7.0	-21.9	-147.3

Note: Sources minus uses plus other investment and financing activities (net) may not equal net change in cash and cash equivalents due to independent rounding.

Percent changes were calculated from unrounded data.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Table 4. Line-of-Business Contributions to Pretax Cash Flow, Income Taxes, and Cash Flow for FRS Companies, 2005-2006
(Billion 2006 Dollars)

Contribution to Pretax Cash Flow [a]	2005	2006	Absolute Change 2005-2006	Percent Change 2005-2006
Petroleum				
Oil and Natural Gas Production	173.5	190.0	16.5	9.5
Refining, Marketing, and Transport	48.2	52.4	4.2	8.7
Downstream Natural Gas	2.6	7.5	4.9	184.9
Electric Power	1.6	2.1	0.5	34.3
Other Energy[b]	1.0	0.6	-0.4	-37.9
Chemicals	7.2	7.1	0.0	-0.2
Other Nonenergy	-1.1	0.6	1.7	--
Nontraceable	-6.1	-6.1	0.0	0.6
Total Contribution to Pretax Cash Flow[a]	226.9	254.3	27.4	12.1
Current Income Taxes	-69.0	-81.5	--	18.0
Other (Net)	17.3	20.7	3.4	19.6
Cash Flow from Operations	175.2	193.6	18.3	10.5

[a]Defined as the sum of operating income, depreciation, depletion, and amortization, and dry hole expense.

[b]The Other Energy line of business includes coal, nuclear, and non-conventional energy.

-- = Not meaningful.

Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.

Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

The largest use of cash was for capital expenditures (shown as Additions to Investment in Place on Table 3), which increased by $57 billion from the previous year to $195 billion in 2006. The Capital Expenditures section discusses these expenditures in greater detail.

FRS companies continued to use stock buyback programs as a means to distribute part of the large increase in cash flow to shareholders. The amount of cash used by FRS companies to repurchase their own stock rose 27 percent to $42 billion in 2006. Dividends to shareholders declined 6 percent to 39 billion in 2006.

Overall uses of cash exceeded sources, resulting in a decrease of $7 billion in cash and cash equivalents. Despite the decline, cash balances remained at historically high levels. Balances of cash and marketable securities for FRS companies at the end of 2006 were higher than any previous year in the survey except 2005.

Capital Expenditures

Companies expend funds to acquire assets such as property, buildings, and equipment that will remain in use for a number of years. Capital expenditures, which represent the value of assets acquired in the current time period net of depreciation, also include investments and advancements to unconsolidated affiliate companies.

The FRS companies' capital expenditures (also referred to as additions to investment in place) increased 42 percent to $195 billion in 2006 (**Table 5**). Oil and natural gas production (domestic and foreign combined) made up 80 percent of the total, while total petroleum accounted for 90 percent of capital expenditures.

Along with capital expenditures, FRS companies report expenditures for exploration, unproved property, development, proved property, and production (E&P) for the oil and natural gas production segment. The data include current as well as capital expenditures, but capital expenditures are predominant. Regional breakdowns are also provided. Exploration and development expenditures provide insight into the regional targets of upstream investment by FRS companies.

Expenditures for E&P have tended to follow changes in cash flow from operations. In 2003 and 2004, however, large increases in cash flow from operations did not lead to similar increases in E&P expenditures (**Figure 7**). Companies were hesitant to invest because they were concerned that the higher oil and natural gas prices would not last. In contrast, E&P expenditures in 2005 and 2006 rose substantially as expectations increased that the price levels would persist and as the costs of drilling rigs and personnel increased.

In 2006, E&P expenditures rose $68 billion to $203 billion, surpassing the level of cash flow from operations, which increased $18 billion from 2005 to $194 billion in 2006. Expenditures for unproved and proved property accounted for 62 percent of the increase in E&P expenditures in 2006, as several large acquisitions occurred (**Table 6**). Development expenditures made up 23 percent of the annual increase in E&P expenditures, while production expenditures contributed 11 percent. Expenditures for exploration made up just 4 percent of the increase in total E&P expenditures.

Compared to the 2005 level, exploration expenditures increased 27 percent to $14 billion. This level of spending on exploration by FRS companies was the highest since 1985 (**Figure 8**). Development expenditures rose 30 percent from 2005 to $67 billion in 2006, the highest level in the history of the FRS survey.

Table 5. Additions to Investment in Place by Line of Business for FRS Companies, 2005-2006
(Billion 2006 Dollars)

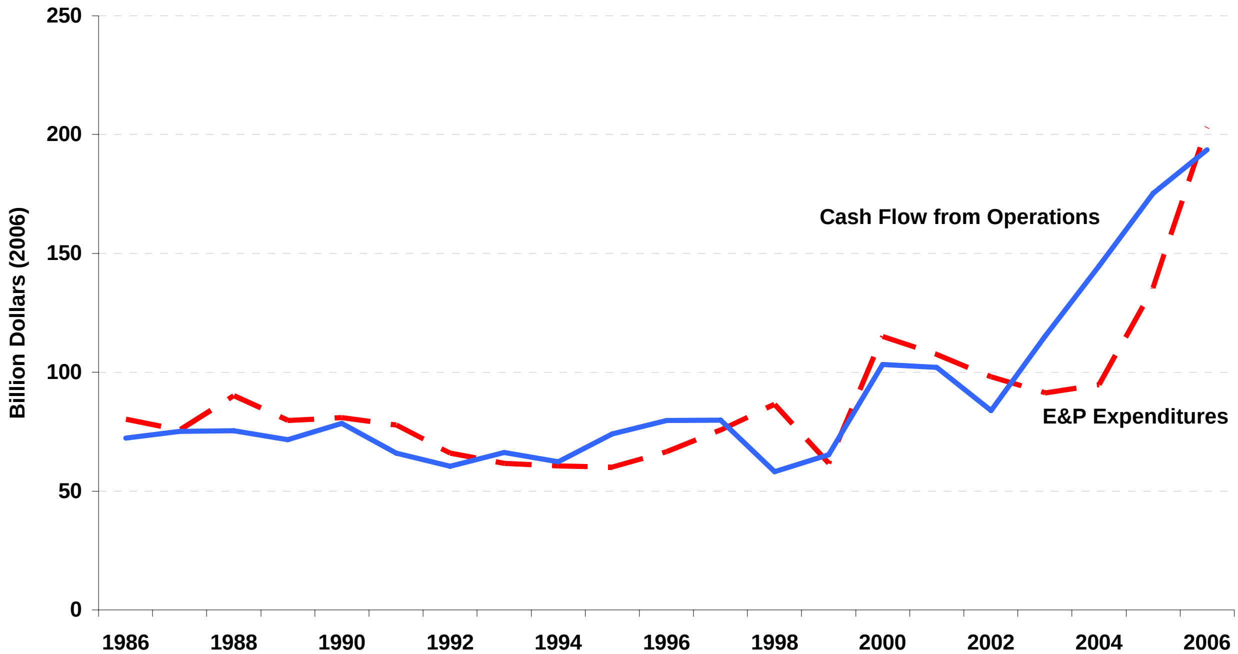
Lines of Business	2005	2006	Percent Change 2005-2006	Percent Change Excluding Mergers and Acquisitions 2005-2006
Petroleum				
U.S. Petroleum				
Oil and Natural Gas Production	46.9	93.3	98.9	26.2
Refining/Marketing				
Refining	15.0	11.0	-27.2	16.6
Marketing	2.7	1.5	-43.8	-43.8
Transport	0.6	0.7	20.3	20.3
Total Refining/Marketing	18.3	13.1	-28.1	2.5
Pipelines	1.8	1.0	-43.2	-33.5
Total U.S. Petroleum	67.0	107.5	60.5	18.5
Foreign Petroleum				
Oil and Natural Gas Production	52.4	62.1	18.6	13.3
Refining/Marketing[a]	3.0	5.7	88.0	42.7
Total Foreign Petroleum	55.4	67.8	22.4	15.5
Total Petroleum	122.4	175.3	43.2	17.1
Downstream Natural Gas	6.9	11.6	68.2	21.0
Electric Power	2.4	1.5	-35.8	-16.9
Other Energy[b]	0.7	0.5	-23.2	-64.9
Chemicals	2.4	2.4	0.6	1.7
Other Nonenergy	0.7	0.8	10.3	-15.3
Nontraceable[c]	1.9	2.5	33.4	61.5
Additions to Investment in Place[d]	137.3	194.7	41.8	16.3
Additions Due to Mergers and Acquisitions	37.9	79.0	108.5	
Total Additions Excluding Mergers and Acquisitions	99.5	115.7	16.3	

[a]International Marine is included in Refining/Marketing.
[b]The Other Energy line of business includes coal, nuclear, and non-conventional energy.
[c]Investments that cannot be directly attributed to a line of business.
[d]Additions to investment in place = additions to property, plant, and equipment, plus additions to investments and advances.
Note: Sum of components may not equal total due to independent rounding. Percent changes were calculated from unrounded data.
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Regional Exploration and Development Expenditures

Regionally, the U.S. Onshore remains an important area for the FRS companies' oil and natural gas operations. Expenditures for exploration and development in the U.S. Onshore region increased 39 percent from 2005 to $29 billion in 2006 (**Figure 9**), which was more than three times the average annual expenditure level in the 1990s and the highest amount since 1982. Expenditures for development predominate in the U.S. Onshore region—they rose to $26 billion in 2006, which was 39 percent of FRS companies' development expenditures worldwide.

Figure 7. Cash Flow from Operations and Exploration and Production (E&P) Expenditures for FRS Companies, 1986-2006



Note: E&P expenditures includes exploration, development, production, unproved acreage, and proved acreage expenditures.
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Chesapeake Energy Corporation focuses its exploration and development program primarily in the onshore United States. Chesapeake is the largest natural gas producer, the most active driller, and most active acquirer of leasehold and producing properties in the U.S. mid-continent. Chesapeake has accumulated a large U.S. onshore leasehold position and 3-D seismic data to help evaluate its acreage inventory. The company estimates that sufficient potential drilling locations exist in this acreage to provide 10 years of future drilling opportunities at current drilling rates.[2]

The onshore United States is one of Anadarko's major areas of operations. Anadarko acquired Kerr McGee and Western Gas Resources in 2006, which significantly increased its tight gas and coalbed methane holdings in the Rocky Mountains area. Anadarko also is active in Texas, Louisiana, and Oklahoma, focusing on tight gas, fractured reservoirs, and enhanced oil recovery.[3]

Exploration and development expenditures in the U.S. Offshore region increased 39 percent from 2005 to $13 billion in 2006, the highest level since 1982. FRS companies spend more for exploration in the U.S. Offshore region that in any other FRS region. In 2006, exploration expenditures in the U.S. Offshore accounted for 34 percent of FRS exploration expenditures worldwide.

The deepwater Gulf of Mexico is BP's largest area of growth in the United States, where it is involved in several exploration and development projects, including the Atlantis project and expansion of the Mars and Na Kika fields. The Mars platform, damaged during Hurricane Katrina in 2005, resumed operations in 2006. Repair work continued on the Thunder Horse platform, which is expected to begin production by the end of 2008.[4] Atlantis began producing oil in October 2007 for "commissioning" purposes, but the timeframe for beginning commercial

[2] Chesapeake Energy Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, pp. 2–4.
[3] Anadarko Petroleum Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, pp. 8–9.
[4] BP plc, *Annual Report and Accounts 2006*, p. 22.

Table 6. Value of Mergers, Acquisitions, and Related Transactions by FRS Companies, 2006
(Million Dollars)

Acquiring Company	Assets Acquired	Reported Value of Acquisition
ConocoPhillips	Burlington Resources	33,900
Anadarko	Kerr-McGee	19,100
Anadarko	Western Gas Resources	5,425
Occidental	Vintage Petroleum	3,979
ConocoPhillips	Lukoil investment	2,700
Lyondell Chemical	Remaining interest in Houston refinery from CITGO	2,606
Devon	Chief Holdings, LLC	2,200
Occidental	Plains Exploration	861
Apache	BP properties in the Gulf of Mexico	845
Apache	Operations of Pioneer Natural Resources in Argentina	703
ConocoPhillips	Rockies Express pipeline	480
Hess	West Mediterranean Block 1 Concession in Egypt	413
Burlington	T-BAR-X	400
Apache	Interests in seven concessions in the Tierra del Fuego	396
Hess	Waha concessions in Libya	359
Marathon	Leasehold acquisition in the Piceance Basin of Colorado	354
ChevronTexaco	5 percent stake in Reliance Petroleum Ltd.	301
XTO	Producing properties in East Texas and Mississippi	300
Chesapeake	Chaparral Energy	280
Apache	Interest in eight fields in the Permian Basin	269
Chesapeake	Frac Tech Services	254
ConocoPhillips	Refining assets from Societe Generale in the US	215
Sunoco	Minority interest in cokemaking operation	155
Chesapeake	Martex Drilling	150
XTO	Producing properties in the Barnett Shale	108
BP America	Wind power business - Greenlight Energy Inc	98
Dominion	Pablo Energy LLC from Cactus Feeders	91
Chesapeake	Energen Resources	75
Sunoco	Pipeline system from Alon USA Energy	68

Sources: Company annual reports to shareholders and press releases.

operations remains late-2007.[5] Apache remains enthusiastic about the mature shallow waters of the Gulf of Mexico, buying properties and extending its operations in those areas.[6] Chevron has extensive operations in both the deepwater Gulf of Mexico and the continental shelf. Chevron continues to pursue deep-gas exploration opportunities, which are high-potential projects but are costly and complex to drill.[7]

Exploration and development expenditures in foreign FRS regions increased 20 percent from 2005 to $39 billion in 2006.[8] Expenditures in four regions—Canada, Africa, Other Eastern Hemisphere (i.e., Asia-Pacific), and the Middle East—reached the highest ever in the history of the FRS survey.

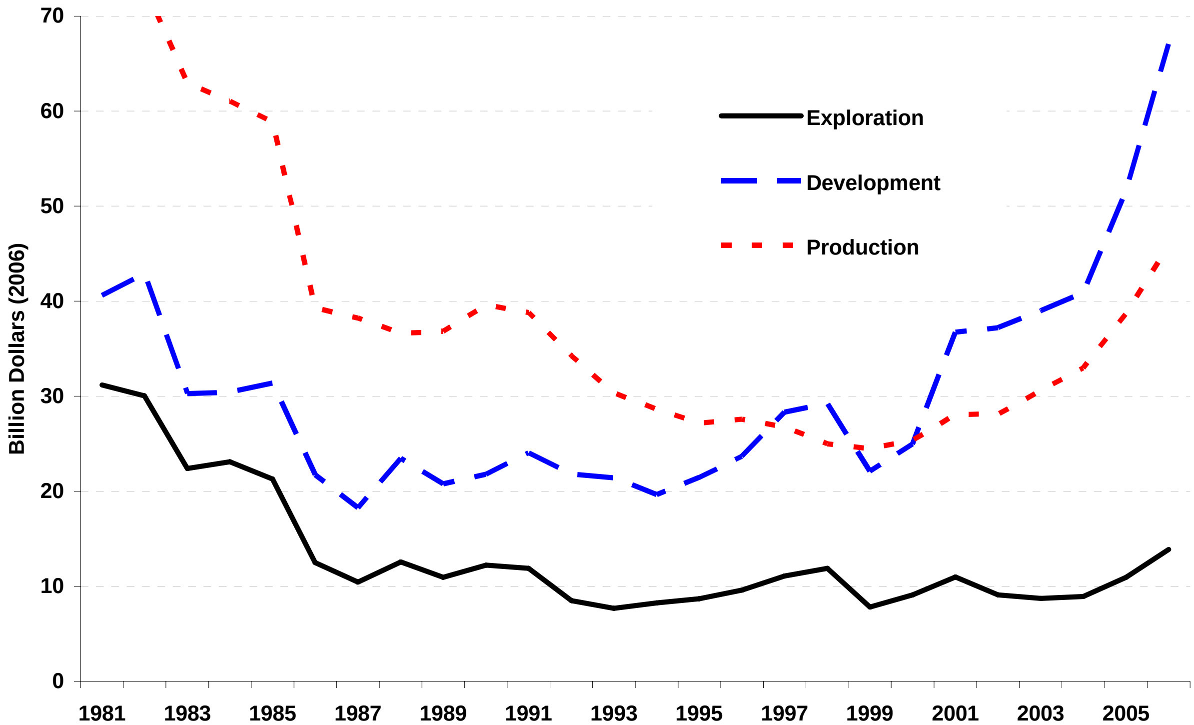
[5] "BP: Timing for Commercial Atlantis Production Still Late '07," John M. Biers, *DowJones Newswire*, Available on the Internet at http://www.subseaiq.com/News/Articles/200710/BP_Timing_for_Commercial_Atlantis_Produ_6442.aspx (as of October 15, 2007).

[6] "Apache Buys More US Gulf Assets from BP," *Oil Daily* (April 20, 2006), p. 1.

[7] Chevron Corporation, *2006 Supplement to the Annual Report*, p. 15.

[8] A change in regional definitions occurred in 2006 to keep the FRS survey consistent with other EIA publications. Eastern Europe had previously been combined with the Former Soviet Union but is now combined with the rest of Europe. The Former Soviet Union is a region by itself. As a result, expenditures for Europe will be somewhat higher and expenditures for the Former Soviet Union will be somewhat lower than under the previous definition.

Figure 8. FRS Worldwide Expenditures for Exploration, Development, and Production, 1981-2006



Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

In 2006, FRS companies put more exploration and development expenditures into Africa than any other foreign region, as they have in every year since 2002. Exploration and development expenditures in Africa increased 23 percent from 2005 to $11 billion in 2006.

Exxon Mobil had three major projects start production in offshore Nigeria and Angola. One of the projects, Erha North, began producing within 30 months of discovery.[9] Chevron had several major exploration and development projects underway in West Africa in 2006. The Benguela Belize-Lobito Tomboco project in Angola started production in 2006. Chevron also undertook several infrastructure projects in Angola to eliminate routine flaring and to handle increasing production volumes.[10]

Exploration and development expenditures by FRS companies in Canada have nearly doubled since 2002, reaching $8 billion in 2006. ConocoPhillips continued the development of the Surmont heavy-oil project, and the Syncrude Stage III expansion-mining project. ConocoPhillips also announced a business venture with Encana Corporation to create an integrated North America heavy-oil business.[11] Devon's Jackfish oil sands project in Alberta, which has been under construction since 2005, will use a steam-assisted gravity drainage process to bring the bitumen to the surface. Devon projects production to reach 35,000 barrels per day by the end of 2008.[12]

Exploration and development expenditures in the Other Eastern Hemisphere region increased 22 percent from 2005 to $5 billion in 2006. Chevron continues to expand its natural gas business in Asia. It has extensive exploration and development operations in the Gulf of Thailand and has developed a significant resource base in northwest Australia.[13]

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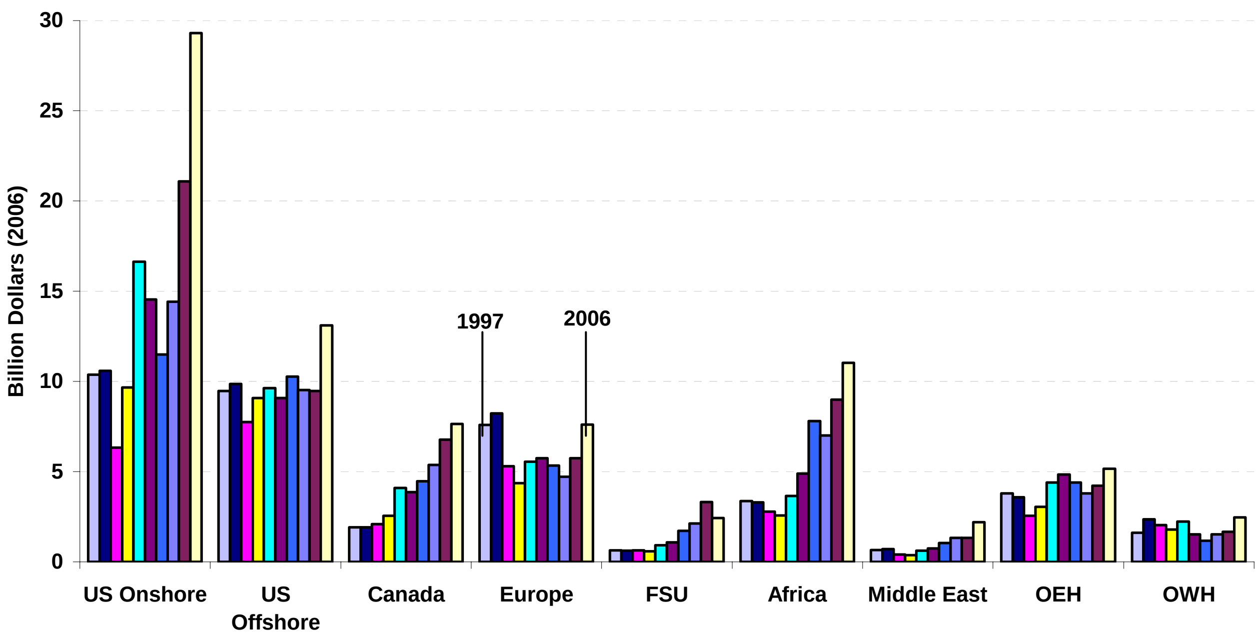
[9] Exxon Mobil Corporation, *2006 Summary Annual Report*, p. 22.
[10] Chevron Corporation, *2006 Supplement to the Annual Report*, p. 18.
[11] ConocoPhillips Company, *2006 Annual Report*, pp. 47, 55.
[12] Devon Energy Corporation, *2006 Annual Report*, p. 26.
[13] Chevron Corporation, *2006 Supplement to the Annual Report*, pp. 23–28.

Figure 9. FRS Expenditures for Oil and Natural Gas Exploration and Development by Region, 1997-2006



Note: FSU is Former Soviet Union. OEH is Other Eastern Hemisphere, which is primarily the Asia Pacific region. OWH is Other Western Hemisphere, which is primarily Central and South America and the Caribbean.
Source: Energy Information Administration, Form EIA-28 (Financial Reporting System).

Europe also continues to be an important target of the FRS companies' exploration and development expenditures, which reached $8 billion in 2006. Exxon Mobil is involved in several projects in the North Sea. One project started production in 2006, and several others are close to completion.[14]

Refining and Marketing Capital Expenditures

Capital expenditures for the FRS companies' refining/marketing segment worldwide fell 12 percent from 2005 to $19 billion in 2006 (**Table 5**). The 2006 value, however, was higher than all but three of the 30 years since the survey began in 1977.

In 2006, complying with environmental regulations remained a key focus of the FRS companies' capital expenditures for the refining/marketing segment. Valero reported $1.6 billion in capital expenditures related to environmental regulations, with $990 million of that attributed to Tier II gasoline and diesel standards.[15] ConocoPhillips continued construction of a coker, a new vacuum unit, and revamps of heavy oil and distillate hydrotreaters at the Borger refinery. These projects will enable the refinery to comply with clean fuel regulations for ultra-low-sulfur diesel and low-sulfur gasoline, as well as to comply with required reductions of sulfur dioxide emissions.[16] Exxon Mobil announced completions of several projects to produce lower-sulfur motor fuels, in particular ultra-low-sulfur diesel in North America. Exxon Mobil stated that the use of its proprietary SCANfining technology produces lower-sulfur gasoline with less octane loss. The company continues to invest significantly in

[14] Exxon Mobil Corporation, *2006 Summary Annual Report*, pp. 22, 25.
[15] Valero Energy Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, p. 14.
[16] ConocoPhillips Company, 2006 U.S. Securities and Exchange Commission Form 10-K filing, p. 25.

cogeneration facilities, which require substantially less energy and result in lower emissions versus separate conventional steam and power generation.[17]

Several FRS companies are investing in biofuels blending and development. Chevron completed the acquisition of a 22-percent interest in Galveston Bay Biodiesel L.P., which is building one of the first large-scale biofuel plants in the United States. Chevron also entered into research alliances with the University of California, Davis, and the Georgia Institute of Technology in 2006. Both are focusing on converting cellulosic biomass into viable transportation fuels.[18] Marathon now has the capacity to store and distribute biodiesel at its Louisville, Kentucky, and St. Paul Park, Minnesota, terminals, and also has formed a 50/50 joint venture to produce ethanol.[19]

FRS companies also indicated that a key focus of capital expenditures in the refining/marketing segment was to expand capacity and to upgrade refineries to process heavier crude oils. BP has announced that it has entered the final planning stage to increase the capability of its Whiting refinery to process Canadian heavy crude oil by 260,000 barrels per day. Reconfiguring the refinery also has the potential to increase the production of motor fuels by about 15 percent.[20] Marathon's board approved a projected $3.2 billion expansion of its Garyville refinery in Louisiana, which will increase the crude oil refining capacity of the facility by 73 percent. Upon completion, the refinery will provide an additional 7.5 million gallons per day of clean transportation fuels.[21] Chevron initiated construction projects at its El Segundo, California, refinery to increase the refinery's heavy, sour crude oil processing capacity.[22] Chevron also completed the expansion of the fluid catalytic cracking unit at the company's refinery in Pascagoula, Mississippi, which increased gasoline manufacturing capacity by approximately 10 percent.[23] Exxon Mobil stated that, through low-cost debottlenecking, it has effectively added the equivalent capacity of an average-size refinery every 3 years, and an average-size conversion unit every year, at a fraction of grassroots cost.[24]

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[17] Exxon Mobil Corporation, *2006 Financial and Operating Review*, pp. 68–69.
[18] Chevron Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, p. 30.
[19] Marathon Oil Corporation, *2006 Annual Report*, p. 14.
[20] BP plc, Annual Report on 20-F, p. 23.
[21] Marathon Oil Corporation, *2006 Annual Report*, p. 4.
[22] Chevron Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, p. 25.
[23] Chevron Corporation, 2006 U.S. Securities and Exchange Commission Form 10-K filing, p. FS-6.
[24] Exxon Mobil Corporation, *2006 Financial and Operating Review*, p. 67.