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FEDERAL ENERGY ADMINISTRATION
WASHINGTON, D. C. 20461

*Site
Oil Company
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OFFICE OF THE ADMINISTRATOR

JUN 4 1976

MEMORANDUM FOR EXECUTIVE COMMITTEE
ENERGY RESOURCES COUNCIL

FROM: ERIC R. ZAUSNER *ERZ*

SUBJECT: ENERGY RESOURCES COUNCIL ANALYSIS OF
VERTICAL DIVESTITURE

The attached paper, "Analysis of Vertical Divestiture," is a product of the ERC Task Force on Divestiture. It was released yesterday in conjunction with Mr. Zarb's testimony on vertical divestiture before the Senate Judiciary Committee and I wanted you to have a copy of the paper in its final form.

Attachment

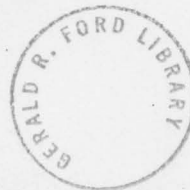


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ENERGY RESOURCES COUNCIL
With participation by:
Federal Energy Administration
Department of Treasury
Department of Commerce
Department of State

May, 1976



EXECUTIVE SUMMARY

Recent Congressional activity on pending legislation to impose divestiture on the U.S. petroleum industry requires careful analysis. Although legislation has been proposed to divest petroleum companies of both "horizontal" activities (ownership of non-petroleum energy industries) and "vertical" activities (ownership of the functional levels within the industry), vertical divestiture is being pursued more actively at this time (Senate Bill S. 2387). Hence, this paper focuses on vertical divestiture.

The proposed legislation seeks to impose independent ownership and operation of production and refining/marketing operations on each of the 18 largest petroleum companies. The pipeline provision of the bill, however, does not allow any company involved in any of the other functional levels to own a pipeline. As a result, several small petroleum companies are also affected by the proposed legislation.

Industry Description

In general, the characteristics of the petroleum industry are similar to those of other U.S. industries:

- o The 18 affected companies have an after-tax return on net worth comparable to the petroleum industry as a whole, which is about the average for all U.S. industry.

- o Over the past 20 years, foreign production and refining capacity concentration levels of U.S. -based companies were generally decreasing, while domestic production concentration levels were generally increasing and domestic refining capacity remained relatively constant.
- o Crude and product pipeline concentration levels are generally higher than for production, refining and marketing.
- o Concentration levels for petroleum refining have been less than the average of all U.S. manufacturing.
- o Refining processing agreements account for only two percent of total refinery runs. Independents have processing agreements with major companies, as well as with other independents.
- o All companies are involved in exchanges. The major refiners effect approximately 37 percent of their motor gasoline exchanges with independent refiners.
- o The amount of motor gasoline distributed to independent marketers by refiners has remained relatively constant over the past four years, at over 80 percent of total refiner sales.
- o Refiner sales concentration levels for motor gasoline, distillate fuel oil and residual fuel have, in general, been decreasing over the past four years.

Vertical Integration

Vertical integration is not synonymous with monopoly power. Companies may consider vertical integration as one means to effect benefits based on reasons such as --

- o Direct cost advantages: These are obtained through reducing inefficiencies and achieving economies inherent in large scale operations.
- o Input and output flow stability: Backward integration insures supplies of raw materials, while

forward integration affords greater sales predictability.

- o Fear of foreclosure: Non-integrated firms may become integrated if they feel it provides a possible competitive advantage.
- o Complementary uses of existing facilities: Successive production stages can use existing skills, experience, facilities and/or resources.

Although integration can result in lower costs to consumers, which may increase a firm's competitive advantage, integration in itself does not confer monopoly power. It takes a conscious decision by a firm to abuse its market position; and confirmation of any such abuse should be a step prior to changing the industrial structure in which there is potential for such abuse.

Vertical integration is a pervasive form of corporate organization within the petroleum industry with many independent firms, as well as the majors, exhibiting vertically integrated structures. A recently developed index of vertical integration shows several independent firms are almost as integrated as some of the major companies.

Vertical integration is a common occurrence in American industry. Although it is difficult to quantitatively compare the extent of vertical integration across industries, qualitative comparisons of the organization of the petroleum industry with that found in some other industries indicate an equivalent extent of vertical integration. Examples of such other

integrated industries include the steel, food, tire and drug industries.

Divestiture Issues

The two main issues regarding competition and vertical integration in the petroleum industry concern:

- (a) The existence of free and open markets for crude and refined products necessary to sustain non-integrated producing, refining, transportation, and marketing operations; and
- (b) the role the major integrated refiners play in sustaining the OPEC price of crude.

With regard to (a), there already exist extensive markets for crude and refined products; most majors are net crude buyers; and sales to independent marketers constitute over half of domestic refiners' sales of gasoline and distillates. In addition, there has been significant entry and expansion by independent refiners during the past 15 years. FEA market share statistics indicate that refiners have increased supplies of refined products to nonbranded independent marketers during the past three years.

Pipelines are restricted by common carrier regulations. The effectiveness of these regulations is currently the subject of an I.C.C. study.

With respect to (b), i.e., the OPEC "role" of major international petroleum companies, there currently exist substantial incentives for companies importing crude into the U.S. to lower the OPEC price. However, these companies are in a poor bargaining position with the cartel, and would probab-

ly remain so after divestiture. The stability of the OPEC cartel does not rely on whether the majors prorate production among the member countries, nor is it clear that the majors can control output decisions if each country's producing assets have been nationalized.

An analysis of the economic impacts of vertical divestiture should consider the trade-offs between any potential benefits that may be realized versus possible costs due to any losses in efficiencies. The realization of potential benefits may depend in part on whether or not there is anticompetitiveness that divestiture would correct. To date, no significant analysis on this question of benefits has been identified. Some of the possible consequences of divestiture may include:

- o Increased managerial and administrative "overhead," as compared to what integration can make possible.
- o Increased working stock levels and reduced capacity utilization, due to less coordinated internal scheduling.
- o Higher transaction costs, due to eliminating internal transfers that act as substitutes for market transactions.
- o Instability of earnings prompted by elimination of investment diversification.

Transitional Effects of Divestiture

A legislative decision to require divestiture could also impose heavy costs resulting from the uncertainty inherent in the transitional period. Although the bill establishes a procedure to minimize the difficulties of the transition, it is not possible to transfer control over the assets and liabilities of one of the major components of the nation's largest industries without (a) creating significant alterations in capital spending programs, and (b) diverting the efforts of those whose function is to supply energy products for domestic markets to addressing problems of industry restructure.

Moreover, a five-year transition is probably impractical since a decade or more of litigation is likely among the numerous interests who have direct stake in the outcome of divestiture.

The affected companies' ability and incentive to make capital investments during the transition period would be curtailed because of difficulties in raising new external financing, including the refinancing of maturing issues, the possibilities of shortened repayment schedules on outstanding debt, uncertainties about the values to be received from the sale of assets and the uncertainties about the profitability of specific companies following divestiture. In addition, their ability to raise external capital may be constrained because of the following conditions:

- o There is substantial doubt about whether the sale of new unsecured long-term debt issues, including the refinancing of maturing issues, would be possible until lenders could ascertain what corporate entity would be responsible for debt repayment. Under current bills, this hiatus could run 1-1 1/2 years or longer if legal delays are encountered. In addition, should the FTC or some other body be given the power to rewrite the loan covenants, it would seem unlikely that significant amounts of new debt investments could be attracted for many years unless they were exempted from FTC reformation, and thus given a preferred position over existing creditors' rights.
- o Once it is known what assets and liabilities are to be allocated to each of the divested corporate entities, it will still be difficult for some companies to sell long-term unsecured debt securities since many institutional investors will consider a company as an investment possibility only after it has demonstrated an ability to carry on relatively independent profitable operations for 3 to 5 years.
- o Some amount of secured long-term debt, such as mortgages on specific buildings, may be possible since the basic security of the loans would be the asset rather than the creditworthiness of the parent company. However, the potential volume of such financing, with the possible exception of loans secured by future oil production, would be limited by the specialized nature of many of the oil companies' assets. In addition, to protect their existing investments during a highly uncertain period, existing lenders may have a legitimate reason to attempt to block any such new financing, particularly if they were not provided equal security.
- o It is unclear what the impact on the availability of unsecured short-term seasonal loans would be. However, such short-term lenders would have many of the same concerns as long-term lenders if it appeared that their loans might not be repaid prior to actual divestiture. Some amount of secured short-term credit by accounts receivables and/or inventories probably could be arranged during the transition period. However, long-term and short-term lenders may again have legitimate reasons to attempt to take action to block any such financings, particularly if

their existing investments were not given equal protection.

The transitional period would begin with uncertainty concerning future ownership of most of our petroleum and natural gas reserves, pipelines, refineries and gasoline marketing networks. It would be exceedingly difficult to maintain ordinary business operations during such a period because of the several critical assumptions necessary with respect to legal control, outcome of multiple administrative hearings and legal disposition of the substantive questions surrounding divestiture. Even if S. 2387 were re-drafted to minimize uncertainties, it is likely the oil companies would have to restrict capital investment programs. Any such restriction would have an adverse impact on this country's long-term energy goals.

Long-Term Financial Implications

An initial review of the long-term financial implications of vertical divestiture leads to the following preliminary assessments:

- o Many segmented companies resulting from divestiture will probably survive and earn an adequate return on investment.
- o Because various segments could no longer transfer funds from cash surplus to cash deficient activities, higher working capital and external debt levels might be required.
- o If divestiture took place, reduced size and less stable operations could make financing more difficult to obtain.

- o Divestiture could result in higher product prices. Newly-divested companies would probably find it difficult to raise unsecured long-term debt capital until a reliable financial record, covering at least a few years, was established.
- o Divestiture could result in pressure for direct government subsidies to divested segments or the establishment of government loan guarantees.
- o Should divestiture occur, long-term contracts between segments could aid in obtaining financing, but probably would not provide as much creditworthiness as in an integrated structure.

I. INTRODUCTION

Some Background

There are several bills before both bodies of Congress that would require major reorganization of the energy industry's corporate structure. Of primary concern are two Senate bills that would require mandatory horizontal divestiture between fuel sectors (S. 489), and vertical divestiture within the petroleum industry (S. 2387)¹. To various degrees, the remaining bills would force divestiture of certain segments of the petroleum industry (notably pipelines and marketing) or attempt to protect small business enterprises. These bills pose a wide range of possible Congressional consideration.

Primary efforts are currently directed toward dealing with the vertical structure of the industry, with the April 1, 1976, reporting of S. 2387 out of the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee. The essence of the bill would prohibit the 18 largest integrated petroleum firms from operating in successive stages of the industry, namely production, transportation and refining-marketing. Passage of legislation with this kind of thrust would bring drastic reorganization to the industry; it is a policy decision not to be taken lightly.

¹The latest version of S. 2387 is presented in Appendix A.

Purpose of this Report

This report addresses the task of assembling and analyzing information on competition, its relationship to vertical integration and the potential effects of vertical divestiture of the U.S. petroleum industry.

Organization of Report

The report begins with a brief statistical description of petroleum industry operations, and it is followed by a discussion of the economic aspects of vertical integration and the extent to which independent petroleum firms are integrated as compared to major firms. Some of the principal issues currently being raised as reasons for divestiture are then discussed. Some potential economic (non-financial) impacts of divestiture are delineated, followed by discussions of the transitional consequences of the administrative, legal and financial aspects of divestiture. The report concludes with a discussion of the long-range financial implications of vertical integration.

II. STATISTICAL DESCRIPTION OF PETROLEUM INDUSTRY OPERATIONS

This section focuses on a statistical description of petroleum industry operations. Selected information is also presented which compares the performance of the petroleum industry to other U.S. industries.

Petroleum Company Ownership

Table 1 indicates, with the exception of crude production, concentration levels in the petroleum industry were essentially unchanged in the period 1955-1974.

Table 1. Concentration by Function Within the Oil Industry, 1955 and 1974

Industry Function	Year	Concentration Level		
		Top 4	Top 8	Top 20
Net Domestic Crude plus NGL Production ¹	1955	18.7	31.4	48.7
	1974	26.0	40.9	60.6
Domestic Refining Capacity ²	1955	32.9	57.5	84.3
	1974	31.9	56.9	88.8
Gasoline Marketing ³	1954 ⁴	31.2	54.0	80.4
	1974	30.9	54.0	83.2

Source: ¹See Table 9; ²See Table 10; ³See Table 15; ⁴de Chazeau and Kahn, Integration and Competition in the Petroleum Industry



However, the concentration in the petroleum industry is below the average concentration in U.S. manufacturing. Table 2 shows the four-firm concentration for petroleum refining is 33 percent whereas the percent for all U.S. manufacturing averaged approximately 40 percent.

The 18¹ petroleum companies potentially affected by the proposed vertical divestiture are publicly owned and include the five major U.S., international petroleum companies².

Technically, the 18 include all 15 of the large integrated refiners as defined by the EPAA (Emergency Petroleum Allocation Act), and three of the four large independent refiners. Generally, the 15 large integrated refiners are known as the "majors." As publicly owned corporations, they have a wide variety of responsibilities to their stockholders. Table 3 gives an aggregate breakdown of ownership for six of the majors. As shown in Table 3, ownership is almost evenly split between the public and corporations acting on behalf of the public.

¹ARCO, Cities Service, Continental, Exxon, Getty/Skelly, Gulf, Marathon, Mobil, Phillips, Shell, Socal, Std. of Indiana, Sun, Texaco, Union, Amerada Hess, Ashland, and Std. of Ohio.

²There is a potential broader impact with regard to pipeline ownership which is discussed later.

TABLE 2

Concentration Within Selected Manufacturing Industries, Selected Years 1954 through 1970

Industry (and SIC)	Value of Shipments 1970 (Billions ¹ of Dollars)	Year	No. of Companies	% of Shipments ²		
				Top 4	Top 8	Top 20
Petroleum Refining (2911)	22.8	1954	253	33	56	84
		1967	276	33	57	84
Motor Vehicles (3711)	28.2	1967	107	92	98	99+
Blast Furnaces & Steel Mills (3312)	21.5	1954	N/A	55	71	86
		1967	200	48	65	83
Electronic Com- puter Equipment (3573)	5.7	1967	134	66	83	92
Construction Machinery (3531)	4.8	1963	561	42	53	70
		1967	578	41	53	72
Tires and Inner Tubes (3011)	4.6	1963	105	70	89	97
		1967	119	70	88	97
Plastics (2821)	4.4	1954	149	47	69	88
		1967	508	27	43	54
Metal Cans (3411)	3.9	1954	109	80	88	96
		1967	96	73	84	94
Tobacco (2111)	3.5	1954	12	82	99+	
		1967	8	81	100	
Aluminum Rolling (3352)	3.5	1963	166	68	79	89
		1967	155	65	79	89
Average All U.S. Manufacturing	-	1958 ³ 1970	- -	37.2 40.1		

Source: 1 Duchesneau, T.D., Competition in the U.S. Energy Industry
2 Bureau of the Census, Concentration Ratios in the Manufacturing Industry, 1967
3 Sheperd, William, Market Power and Economic Welfare, An Introduction

Table 3. Composition of Ownership of the Six Largest U.S. Companies*.

	Number of Shares Held (millions)	Percentage of Total
Individuals	595	57.0%
Estates, Individual Trusts and Common Trusts	162	15.5
Retirement Plans and Profit Share Funds	93	9.0
Foundations and Charitable and Educational Institutions	76	7.0
Investment Companies, Brokers and Securities Dealers	42	4.0
Insurance Companies	35	3.5
Other	42	4.0
Total	1,045	100.0%

*Exxon, Gulf, Mobil, Socal, Std. of Indiana, and Texaco.
Source: Testimony of Raymond Gary, Morgan Stanley & Co., before the Senate Subcommittee on Antitrust and Monopoly, January 1976.

Return on Net Worth

Petroleum firms have experienced an after-tax return on net worth that does not appear excessive compared to that found in other industries. Table 4 presents this statistic for several years based on a sampling of these industries.

Table 4. Summary of After-Tax Return on Net Worth for Selected Industries (Percent).

Industry Sample	1965	1970	1971	1972	1973	1974
Petroleum (25*)	11.4%	10.5%	10.4%	10.0%	14.2%	17.7%
Metals & Mining (10)	10.7	10.8	5.1	6.5	10.1	12.8
Steel and Metal Fabricating (10)	8.7	4.4	4.5	5.6	9.0	17.0
Chemical (10)	15.2	10.1	10.3	11.7	15.0	18.1
Auto & Truck Related (10)	19.1	6.0	13.3	15.0	15.4	6.8
Machinery & Machine Tool (10)	18.2	11.6	10.6	13.1	13.8	15.4
Drug & Health Related (10)	19.4	17.7	17.4	17.9	19.1	20.3
Other (10)	17.8	16.1	17.2	17.6	17.9	18.0

*Number of Companies in Sample
Source: Value Line Investment Survey, 1975.

Table 5 summarizes world-wide return on equity for the 18 potentially affected companies, all petroleum companies and industries including and excluding petroleum companies. Table 5 shows return on equity from 1965 to 1972 for the 18 is generally the same as for all petroleum companies, both being below the rate achieved by other industries in the aggregate.

Table 5. U.S. Based Companies Return on Net Worth (Percent)

Year	18 Petroleum Companies*	All Petroleum Companies	All Industries** (Including Petroleum)	All Industries** (Excluding Petroleum)
1965	12.4%	11.9%	13.8%	14.3%
1966	12.7	12.6	14.1	14.5
1967	13.3	12.9	12.6	12.6
1968	13.0	12.9	13.2	13.3
1969	12.0	12.1	12.7	12.8
1970	11.0	10.9	10.3	10.1
1971	12.6	11.2	10.9	10.8
1972	10.1	10.8	12.1	12.4
1973	16.2	15.6	14.5	14.2
1974	20.5	19.9	15.3	14.0
1975	N/A	14.1	12.4	12.0
Weighted Average				
1965-1972	11.9	11.8	12.3	12.4
1965-1974	13.7	13.4	13.0	12.8
1965-1975	N/A	13.5	12.9	12.7

* Affected Companies; N/A means not available.

**Excludes transportation companies, public utilities, and financial companies.

Source: First National City Bank (N.Y.) and R. Shiver Associates.

The effects of 1974 operations change the results somewhat and stem primarily from inventory profits and increases in domestic crude prices. As shown in Table 6, the 18 potentially affected companies realized approximately two-thirds of their 1965 net income from domestic operations. This percentage has changed over the past ten years, with the result being the majority of their net income has been increasingly derived from foreign operations.

Table 6. 18 Petroleum Companies Percent of Net Income* - Foreign and Domestic

Year	Foreign	U. S.	Total
1965	33.0%	67.0%	100.0%
1966	30.0	70.0	100.0
1967	30.3	69.7	100.0
1968	31.4	68.6	100.0
1969	32.7	67.3	100.0
1970	36.1	63.9	100.0
1971	49.3	50.7	100.0
1972	45.0	55.0	100.0
1973	62.6	37.4	100.0
1974	57.7	42.3	100.0

*Excludes extraordinary items

Source: R. Shriver Associates/Chase

Production and Refining

Table 7 summarizes production statistics outside the U.S. and Canada. Highlighted are the "7 Sisters" which controlled a substantially greater percentage of the 1953 total than in

1974. A similar trend, with regard to refining capacity, is illustrated in Table 8.

Table 7. Foreign Non-Communist World Crude Oil and NGL Production*

Company	<u>Percent Total</u>			
	1953	1972	1973	1974
Exxon	24.9%	14.0%	11.7%	8.3%
Shell	20.6	16.8	15.4	13.2
B.P.	12.3	15.5	13.6	12.7
Gulf	11.2	8.1	7.0	6.0
Socal	6.1	8.7	8.8	9.2
Texaco	6.7	9.5	9.9	10.1
Mobil	5.3	5.8	5.5	5.4
All Others	12.9	21.6**	28.1**	35.1**

*Foreign Non-Communist World defined as non-U.S., non-Canada

**Continental, Std. of Indiana, Marathon, and ARCO aggregate percentages are 3.4%, 3.0% and 2.7% respectively.

Source: FEA

Table 8. Foreign Non-Communist World Refining Capacity*

Company	<u>Percent Total</u>		
	1953	1972	1975(as of 9/1/75)
Exxon	18.9%	13.1%	11.7%
Shell	22.3	12.0	11.0
B.P.	17.9	8.1	6.5
Texaco	4.4	5.1	4.7
Mobil	4.1	3.8	3.9
Socal	3.8	3.8	3.4
Gulf	1.2	2.8	1.9
All Others	27.4	51.3	56.9

*Foreign Non-Communist world defined as non-U.S., non-Canada

Source: FEA

Unlike foreign production operations, domestic production concentration levels have tended to increase over the past 20 years, as shown in Table 9. Domestic refining capacity, however, has not tended toward higher concentration levels in the top 4 or top 8 firms in the last twenty years.

Table 9. Net Crude Plus NGL Production Concentration Levels

	1955**	1965**	1970	1973	1974
Top 4	18.7%	24.0%	25.4%	26.2%	26.0%
Top 8	31.4	39.0	41.7	42.1	40.9
Top 20	48.7	55.0	60.0	*	60.6

*Not Calculated

**Based on net crude only.

Source: FEA, Company Reports & 10K, FTC

Although Table 10 depicts increased levels over a 54-year span, U.S. refining capacity has not tended to become more concentrated during the last 20 years.

Table 10. Domestic Refining Capacity Concentration Levels

	1920 ¹	1955 ²	1970 ²	1972 ²	1974 ³
Top 4	26.3%	32.9%	33.3%	33.1%	31.9%
Top 8	42.0	57.5	58.7	59.0	56.9
Top 20	58.8	84.3	85.3	79.4	88.8

Source:

¹McLean and Haigh, Growth of Integrated Oil Companies.

²FEA

³FEA

Processing agreements are a relevant attribute of refining operations because of inferential statements made concerning the degree of implied control. Table 11 summarizes information on processing agreements and shows that in 1972, only two percent of total refinery runs were involved, and majors tended to work with majors while the independent refiners tended to service both more evenly.

Table 11. Processing Agreement Between Refiner Groups, 1974

Type of Processing Agreement	Volume Processed (Thousands Barrels per day)	Percent of Total U.S. Refinery Runs
Majors		
For Majors	107	0.8%
For Others	24	0.2
Other Refiners (Independents)		
For Majors	71	0.6
For Others	54	0.4
Total Volume Processed	256	2.0%

Source: FEA

Transportation and Marketing

The transportation function includes crude and product pipeline and other gathering systems involving trucks, barges, etc. This function also considers exchanges. Domestic refineries receive over 70 percent of their crude by pipeline, and

approximately 50 percent of petroleum products are moved through pipelines. Table 12 identifies the concentration levels for crude and product pipelines. As expected, pipeline concentration levels are higher for crude and product pipelines individually than when considered together. Pipeline operations tend to be more concentrated than other functional operations.

Table 12. Trunkline Barrel-mile Pipeline Movements Concentration Levels*

	Crude and Product		1973	
	1972	1973	Crude	Product
Top 4	33.8%	37.0%	48.0%	35.0%
Top 8	57.9	59.0	69.0	59.0
Top 20	87.0	92.0	96.0	97.0

*Joint ventures allocated.

Source: ICC

Although the 18 firms discussed previously are the principal firms potentially associated with divestiture proposals, the divestiture of pipelines from refining and other operations would actually involve more firms. There are approximately 100 interstate petroleum pipeline companies, 34 percent of which operate as joint ventures. Other companies which might be potentially affected include: Charter, Texas Eastern Transmission, American Petrofina, Champlin, Farmland

Industries, Crown Central, Diamond Shamrock, Pennzoil, Kerr McGee, United Refining, Koch, Placid, Kewanee, Hunt, Pasco, Union Carbide and Husky.

Table 13 summarizes motor gasoline exchange information among refiners. As shown in Table 13, the volumes are significant, and occur among all groups of refiners. The table indicates the majors exchanged 37 percent of their total exchanges with the "independent" refiners.

Table 13. Exchanges of Motor Gasoline Among Refiner Groups in 1972 (Millions of Gallons)

	Majors		Large Independent		Small		Total	
	Volume	%	Volume	%	Volume	%	Volume	%
Majors	17,600	63.3	3,200	11.5	7,000	25.2	27,800	100.0
Large Independents	3,200	71.1	200	4.5	1,100	24.4	4,500	100.0
Small	7,000	55.1	1,100	8.7	4,600	36.2	12,700	100.0
Total Exchange Volume	27,800	61.8	4,500	10.0	12,700	28.2	45,000	100.0
Total Sales of Motor Gasoline to Ultimate Customers	75,000		8,200		16,800		100,000	
Exchanges as % of Total Sales		37.1		54.9		75.6		45.0

Source: FEA

Table 14 Percent Distribution of Refined Petroleum Product Sales by Refiners, 1972-1975

The marketing of refined petroleum products can vary significantly from product to product. Table 14 summarizes the distribution patterns for selected products. The marketing of distillate fuel oil involves the use of independent marketers to a significant degree. As shown, 1975 refiners' sales directly to ultimate consumers are down three percentage points from 1972 levels. In addition to obtaining product from refiners, the independent marketer supplements his supply with imports amounting to approximately five percent of total U.S. sales.

Residual fuel oil, now without price and allocation controls, is a product primarily marketed directly by refiners. The percentage distributed to independent marketers is further supplemented by significant import quantities. The volumes imported by independent marketers are equivalent to approximately 22 percent of the total U.S. sales.

Motor gasoline has an extensive and complex marketing network. The role of the independent marketer is greater than that of the refiner (refiner-direct and refiner-operated outlets) by a factor of almost five. As shown in Table 14, this relationship has remained relatively constant for the past four years.

Table 15 presents concentration levels for each of these products. In general, refiner sales of motor gasoline and middle distillates are significantly less concentrated than

	Percentage of Refiner Product Sales				Total Volume Sold by Refiners (Millions of Gallons)
	Sold Directly to Ultimate Consumers	Sold to Independent Marketers		Total Product Sales	
		Branded Product	Nonbranded Product		
Middle Distillate					
1972	44.9%	34.9%	20.2%	100.0%	48,477
1973	44.3	35.6	20.1	100.0	49,899
1974	43.3	35.1	21.6	100.0	48,665
1975	41.8	35.0	23.2	100.0	46,940
Residual Fuel					
1972	82.0	2.6	15.4	100.0	28,664
1973	81.5	2.5	16.0	100.0	32,654
1974	81.9	1.9	16.2	100.0	31,670
1975	80.6	3.2	16.2	100.0	28,700
Motor Gasoline					
	Bulk Purchaser Consumers	Refiner Operated Retail Outlets			
1972	9.5%	8.2%	67.9%	14.4%	99,869
1973	9.0	9.0	69.4	12.6	103,606
1974	8.8	9.0	66.7	15.5	101,598
1975	7.8	9.9	64.6	17.7	102,758

SOURCE: FEA

Table 15 Market Concentration Ratios of Refined Petroleum Product Sales by Refiners

		Percent Share of Product Sold at Refinery Level		
		Top 4 Refiners	Top 8 Refiners	Top 20 Refiners
		Middle Distillates		
	1972	35%	58%	87%
	1973	34	58	86
	1974	35	58	85
	1975	34	56	84
Residual Fuel	1972	61	77	92
	1973	59	75	93
	1974	59	74	94
	1975	56	71	89
Motor Gasoline	1972	30	54	85
	1973	31	54	84
	1974	31	54	83
	1975	31	53	84

SOURCE: FEA

residual fuel oil sales. The levels of concentration are observed to be decreasing in almost every case.

Many of the petroleum companies are involved concurrently in production, transportation, refining and marketing. This vertically integrated structure of their operations is discussed in Section III.

Vertical integration is not synonymous with monopoly power, for, as a business organization form, it can be entirely consistent with market competitiveness. Thus, in a very overview sense, one could expect a business entity to consider vertically integrating if doing so would lead to financial advantages through (a) efficiency gains (e.g., cost reductions) or (b) anticompetitive behavior. The former of these two reasons is totally consistent with a competitive market structure, while the second, of course, is not.



III. VERTICAL INTEGRATION

The notion of vertical integration in the context of industrial organization refers to the extent to which a firm "...carries on the productive process from the extraction of raw materials to the transformation of these materials into a final product."¹ Total integration thus means implementing an entire manufacturing procedure from start to finish. "Upstream" (backward) integration encompasses just the production of raw materials, or other inputs previously supplied by independent sources, while "downstream" (forward) integration relates to finishing and wholesale/retail activities which occur closer to the point where goods are placed in the consumers' hands.

Vertical integration is not synonymous with monopoly power, for, as a business organization form, it can be entirely consistent with market competitiveness. Thus, in a very overview sense, one could expect a business entity to consider vertically integrating if doing so would lead to financial advantages through (a) efficiency gains (e.g., cost reductions) or (b) anticompetitive behavior. The former of these two reasons is totally consistent with a competitive market structure, while the second, of course, is not.

¹Eugene Singer, Antitrust Economics: Selected Legal Cases and Economic Models (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968), p. 206.

Efficiency Reasons For Vertical Integration

Situations in which vertical integration could give rise to financial advantages in the form of revenue increases and/or cost reductions are sometimes obvious and are certainly not unusual. Nonetheless, there are at least four broad categories of ways in which these advantages can arise. It should be noted that each of these categories constitutes grounds for a firm to contemplate vertical integration as a means of effecting the identified advantages. But it is not implied that any category here would be a deciding factor to make a firm choose vertical integration without first examining other possible ways to realize the desired benefit. With this qualification, the four categories can be described as follows:

1. Direct Cost Advantages - With profits defined as revenues less costs, any action that can reduce costs while maintaining the same level of revenue would clearly be desirable. Two sources of such savings via vertical integration can be (a) reducing inefficiencies and (b) achieving internal and external scale economies.

There can be inefficiencies (and hence costs) associated with a high degree of separation of successive production stages when a rather complex product is being made. Thus, it may well be cheaper for a firm to initiate production of certain components (thereby effecting management and coordination

of their supply) than to contract purchase them. "The payoffs from integration also increase with the complexity of product component interrelationships. It is easier to make the various parts of an automobile body fit together when all parties to the coordination effort work for the same boss than when design changes must be processed through a purchasing office."¹ Other forms of "bottlenecks" in a production process relate to efficient size of operation; if integration can help overcome them, cost savings can result.

The internal scale economies notion in (b) reflects the common situation in which a production process achieves its most efficient operation (meaning, the most output from given input levels) only if its production level, or "scale," is of large enough magnitude. This is often the case where capital equipment investment is extensive. Thus, a steam-electric power generating plant generating a few kilowatt hours (kwh) during a year would not be using its boiler-turbine-generator units optimally, since the start-up fuel consumption/handling processes, and subsequent steam generation and plant supervision, could provide more kwh for relatively little additional cost. Alternatively stated, a larger output, spreading the high fixed costs over more kwh, leads to lower over-all unit costs (\$/kwh). Increasing a level of production

¹F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: Rand McNally Co., 1971), p. 87.

operation to approach the point where unit costs are minimal is what is meant by realizing (capturing) internal scale economies. (In economic theory terms, this means moving along a unit cost curve.)

Vertical integration can help a firm achieve internal scale economies by making it possible for the firm to expand its output to the requisite level. For example, if downstream vertical integration enables a firm to market its product more effectively so that sales increase, this organization will have had a direct bearing on the firm's realizing the advantageous scale economies.

Additionally, there are factors beyond a firm's control which can affect costs externally (causing shifts of unit cost curves). Prices of inputs to a production process are an example of particular relevance. Thus, after successfully achieving internal scale economies, a producer may expand his share of a market, tending thereby toward an oligopolistic market structure. To the extent that attendant price-raising power is realized, downstream operations face potential cost increases. These later-stage processes, therefore, would have a cost-cutting incentive to integrate backward, eliminating the oligopoly supply situation they face and effecting (if input price rises are indeed prevented) an external scale economy.

2. Input and Output Flow Stability - From the profit-maximizing view of an individual firm, if backward integration is seen as a means to help ensure reliability of raw or semi-finished input flows, the firm has definite incentive to implement such integration. Analogously, integrating downstream can give a firm greater market control so its sales become more predictable. Furthermore, a firm in such an instance becomes less vulnerable to being shut out of its sales market by competitors or strong buyers of its product(s). In both of these situations, it can be noted that if market distortions exist (e.g., rationing or price controls), then there can be strong incentive to vertically integrate as a means of overcoming the market distortion(s).

3. Fear of Foreclosure - When one firm observes competitors vertically integrating, it likely will become concerned that if it does not follow suit it may be at a competitive disadvantage. Fear of potential foreclosure from suppliers and/or customers can thus lead to a "snow-balling" effect, as many firms attempt to guard against the market uncertainties described above.

4. Complementary uses of Existing Operations - Related to the cost advantages cited above is the possibility that successive production stages can use existing skills, experience, facilities, or resources. In such a case, there can be

a comparative advantage for a firm to employ these factors in more than just one activity. (Examples could be research capabilities and capital-acquiring abilities.)

In short, there are multiple reasons why vertical integration might help effect efficiency gains and thus constitute rational behavior for a firm.¹ Generally speaking, the common thread relating these reasons to each other is simply that all can lead to an increase (or to prevent a decrease) in current or future profits. It bears reiteration, however, that in each case some means other than vertical integration (e.g., a long-term contract to assure input supply) might be more cost-effective for realizing the profit benefit. A firm would thus assess its options before proceeding unilaterally to vertically integrate.

Potential Anticompetitive Aspects of Vertical Integration

Each trait described in the previous subsection as an advantage of vertical integration can be turned into an abuse of market power if implemented successfully to an extensive degree. Thus, a vertically integrated firm "...may keep raw materials out of rival hands, or foreclose market to rivals, or establish a vertical price structure... which squeezes pro-

¹Economic theory indicates that there can be instances in which there are no advantages to vertical integration. For a delineation of market structure combinations and situations in which this can occur, see Singer op. cit., Chapter 18.

fit margins of the less integrated competitor."¹ Any of these actions could be pursued with the explicit intent of eliminating competitors to secure a monopoly position for the firm in question. But, it must be emphasized that such behavior by a firm, although made possible by vertical integration, does not necessarily follow from that integration. That is, an integrated firm would have to make a conscious decision to act "predatorily," and it would be a decision apart from the existence of integration.

It is important to note that a firm may have no intention of using advantages prompted by vertical integration to support predatory action, but the end results to competitors of its behavior might, nonetheless, be the same as if it had been purposely anticompetitive. For example, in the course of trying to effect advantages of integration, the firm might acquire enough raw materials to reduce supplies available to competitors. The effect is input supply control, but the intent would have been simply to implement a production efficiency. Similarly, it could be the case that cost reductions brought about by vertical integration might be translated into lower consumer prices. If so, the integrated firm might be in

¹Scherer, op. cit., p. 70.

a position to undersell competitors¹ who are not comparably integrated, possibly thereby threatening their existence. Again, the intent would have been simply to pass savings to consumers, but one end result could be injury to competitors.

In short, therefore, vertical integration poses a conceptual dilemma: it may prompt either purposely anticompetitive behavior or very rational profit maximization competitive behavior, but the observed end result can be the same for both kinds of behavior. If the former prevails, society condemns the situation, whereas, if the latter has occurred, society tends not to condemn. Thus, in the first instance, vertical integration might be criticized, while no such criticism might be leveled in the second.

What is imperative to recognize here is that it is not vertical integration per se that dictates the competitive or anticompetitive behavior of the firm. Rather, its behavior is motivated by other forces. Because it is an organizational structure that creates an environment that is conducive to abuse of advantage, opponents criticize the concept without examining if any abuse has been exercised. The potential for abuse is apparently often identified as the abuse itself, and the way to curb this potential, it is argued, is to change the

¹This is not a reference to the situation of an integrated firm selling raw materials to a non-integrated rival at prices exceeding its own "internal" integration-induced costs and then charging a low output price relative to the competitor, thereby "squeezing" the rival.

institution that creates the environment. Evaluating if abuse has, in fact, occurred would be a preferable prior step.

Extent of Vertical Integration Within the Petroleum Industry

It has been noted that the basic activities, or functions, comprising the petroleum industry are generally considered to be crude oil production, the operation of crude and product pipelines, refining, and marketing. A petroleum company involved in each of these areas to the same extent (e.g., it produces, refines, transports and markets 500 thousand barrels per day in facilities under its own control) can be thought of as totally self-sufficient or vertically integrated. Conversely, a firm active in only one area, such as refining, must depend on the market place for its raw materials, transportation, and marketing, and is therefore not vertically integrated. Since the corporate structure of most U.S. refiners falls between these two extremes, it is useful to think of vertical integration as a continuum, which has its highest value for firms involved in each function to the same degree, and its lowest value for firms active in only one function. An index has been developed which embodies explicit information about these properties; its maximum is one and minimum is zero. Accordingly, it can be used to compare the extent of vertical integration among petroleum refiners (see Table 16). It should be noted that since vertical integration implies only the balance a company maintains in its activities

Table 16 Vertical Integration in the Domestic Petroleum Industry in 1974
 the Majors and 20 Independent Refiners
 (thousands of barrels per day)

Refiner	Crude Production	Crude Pipe-lines	Refining Runs	Product Pipe-lines	Branded Product Sales	Index of Vertical Integration
Atlantic Richfield	383	635	649	352	373	.7
Citicus Service	212	265	232	403	68	.7
Continental	218	323	320	394	220	.8
Exxon	890	1,173	1,072	695	980	.8
Getty/Skelly	300	37	175	27	86	.3
Gulf	401	677	808	309	596	.8
Marathon	163	355	265	231	78	.7
Mobil	363	629	784	590	499	.7
Phillips	256	217	373	473	123	.6
Shell	586	956	1,030	586	592	.7
Standard of Cal.	417	429	867	226	683	.5
Standard of Ind.	539	924	1,059	469	662	.6
Sun	266	304	490	298	285	.6
Texaco	705	796	945	955	823	.9
Union	263	370	439	196	279	.6
Amerada Hess	99	72	525	0	467	.3
American Petrofina	20	0	174	2	13	.1
Ashland	23	169	325	13	252	.4
Standard of Ohio	30	227	323	195	180	.5
Coastal States	15	0	152	0	60	.1
Kerr McGee	31	6	129	0	33	.1
Commonwealth	0	0	164	0	42	.1
Chaplain	42	0	137	43	13	.2
Murphy	16	8	92	14	36	.2
Clark	2	46	84	41	70	.5
Tenneco	87	0	80	56	52	.5
Crown Central	3	7	30	2	18	.3
Charter	1	10	76	0	38	.2
Tesoro	4	0	52	0	45	.2
United Refining	0	10	42	0	42	.3
Pennzoil	44	11	48	1	5	.3
Husky	13	0	49	3	18	.2
Apco	6	4	36	18	11	.3
Diamond Shamrock	19	35	48	27	7	.5
Pasco	15	25	38	10	16	.4

Sources: FEA

across the industry functions, a small firm can, in theory, have an index as high as a large one.

Not surprisingly, the major petroleum companies have higher values of the integration index than most independent refiners. However, some degree of vertical integration is evident among all 35 refiners shown in the table. In fact, nine of the 20 independent refiners analyzed are active in each of the five stages in the industry cycle, from crude production through retail marketing. The activities of the other independents range over practically all other combinations: one in refining and marketing only; one in refining, marketing and crude pipelines; two in refining, marketing and crude production; three in refining, marketing, crude production and crude pipelines; and four in refining, marketing, crude production and product pipelines. In addition, four independent refiners (Tenneco, Clark, Diamond Shamrock and Pasco) are nearly as integrated as some of the majors, as measured by the appropriate index values.

It appears that vertical integration is a pervasive form of corporate organization within the petroleum industry. The differences between the majors and independent refiners with respect to integration are more accurately expressed as differences in degree than in kind.

Vertical Integration in Other Industries

It is conceptually more difficult to quantitatively compare vertical integration among different industries than it is to compare the level of integration among firms in the same industry. Within an industry an arbitrary but precise definition of vertical integration may be constructed, and all firms can then be measured on a common basis with respect to their participation in a fixed set of production and distribution activities. For firms in different industries, however, such definitional uniformity can not be achieved, and it is necessary to fall back on a secondary or proxy measure of some characteristic which, it is hoped, is highly correlated with integration. It then becomes important to show that the properties of the secondary measure consistently reflect the essential aspects of the vertical integration concept across industries. Unfortunately, the measures proposed to date fall short of this goal.

Despite these difficulties of quantification, it is informative to note qualitatively that vertical integration is a common occurrence in American industry. Examples of nonpetroleum industries that are highly integrated include:

- o Steel and Metal Fabricating: The largest company in this group, U.S. Steel, represented 23 percent of the total industry sales, while the tenth company, Kaiser Steel, had two percent. Most of the companies in this group were highly vertically integrated; that is, they have subsidiaries that own iron mines, coal companies, energy producing companies, refineries that produce both raw and basic products

(e.g., steel ingots) and consumer goods, transportation companies and retail marketing firms.¹

- o Food Retailing: A different pattern of vertical integration is found in the food retailing industry. Here the vertical integration is primarily "backward integration" toward the processing of food in the manufacturing sector. The leading products manufactured by retail food chains in 1963 were bread products, milk, meat packing, and coffee. The share of total U.S. production accounted for by the 40 largest retail food chains exceeded 9.5 percent in bread products and 8.5 percent in coffee. However, the same group of chains only accounted for 2.6 percent of total U.S. production of food products.²
- o Tire Cord and Fabric Industry: The top 4 firms in this industry account for 81% of total output. These same 4 firms are also the top 4 firms in tire manufacturing comprising 73% of the output. Thus, the tire manufacturing industry has integrated backward into the tire cord and fabric industry.³
- o Drug and Health: The largest company in the group, American Home products, represents 9.9 percent of the industry's sales, while the tenth, the Upjohn Company, represents 3.6 percent. The technology in this field is highly specialized which may have led to integration. All of the companies in this group are partially integrated: they process the raw materials they purchase to provide the basic ingredients for their products, they maintain a certain amount of refining capacity, they transport their products, they manufacture for both the industrial and consumer markets, and they retail at the consumer level.⁴

¹Based on information in Moody's Industrial Manual, 1975.

²Walter Adams, The Structure of American Industry, Fourth Edition, 1971.

³Based on information in 1972 Census of Manufacturers.

⁴Based on information in Moody's Industrial Manual, 1975.

IV. VERTICAL DIVESTITURE ISSUES RELATING TO COMPETITION

The basis for petroleum industry divestiture legislation is the concern that vertical integration promotes certain anticompetitive behavior. However, vertical divestiture would not directly affect market structure aspects (such as concentration) within each of the primary stages of the industry. Rather, vertical divestiture would affect the market relationships between the successive stages of crude production, crude transportation, refining, product transportation, and marketing.

Two main issues have evolved regarding competition and vertical integration in the petroleum industry. One issue concerns the existence of adequate free and open markets for crude and refined products. The other issue concerns the role that the major integrated refiners play in sustaining the high OPEC cartel price for crude.

Open Market Issue

The concern regarding this issue is that non-integrated refiners and marketers may not have the same access to crude and refined product supplies as do major integrated companies. That is, there may be a question about the existence of open markets between stages of the industry that would be adequate to support non-integrated refining and marketing operations. It is argued that the majors' own crude production and their control of crude gathering lines and trunk pipelines tend to

maintain a large volume of crude within integrated channels, and thus not subject to open market transactions. The absence of an extensive open market for the crude would tend to foreclose independent refiners from purchasing crude. Similarly, it is argued that integrated companies dominate the availability of products through their own refinery operations and their extensive ownership of product pipelines.

At issue is the contention that independent refiners do not have adequate access to crude supplies and that independent marketers do not have access to supplies of refined products. The basic aim of divestiture is to insure free and open markets between the various stages of the petroleum industry. The mechanism sought is to take crude and refined products out of vertically integrated channels and force their sales on an open market.

However, in the divestiture debate no one has outlined how much crude and product is currently being handled in open market transactions. To help indicate the extent of open market crude transactions, the point can be made that only one of the 18 refiners to be divested is totally self-sufficient in domestic crude production. This indicates that all the majors are net crude buyers. Taken as a group, in 1974 these 18 firms had to import or buy on the domestic market over 40 percent of their crude for their U.S. refinery runs¹. The quantities in-

¹See Table 16, Section III.

volved would imply that the existing market for the crude is quite extensive. Though some of this crude was imported from the companies' own foreign production affiliates, the increased nationalization of foreign production operations would force future supplies of these crudes to be handled as market transactions between the host governments and domestic crude importers.

The extent of open market transactions for refined products can be judged partly by reviewing refiners' sales to nonbranded independent marketers. In 1975, 17.7 percent of refiner gasoline sales were made to nonbranded independent marketers¹. For this same year, 23.2 percent of refiner distillate sales and 16.2 percent of residual sales were made to nonbranded independent marketers. In addition to these domestic refiner supplies, nonbranded independent marketers themselves imported 5 percent of national residual supplies. Presumably, these imports were also obtained through open market transactions. To an extent, refiner sales to branded independent marketers could also be considered open market transactions. With the exception of lessee dealers, these branded independents generally own their own marketing facilities and thus could change brand affiliation. In 1975, some 65 percent of refiner gasoline sales were made to branded independent marketers, though half of this amount was supplied to lessee

¹See Table 14, Section II.

dealer stations owned by the refiners. Sales to branded independent marketers for this year constituted 35 percent of total refiner distillate sales. Thus, sales to independent marketers (both branded and nonbranded) constituted over half of domestic refiners' total sales of gasoline and distillates.

The issue now becomes determining if the current extent of open market transactions is adequate to make non-integrated refining and marketing operations viable. This question, in turn, concerns access to supplies and entry barriers in refining, pipelines, and marketing.

Refining - One key query asks if the major integrated companies' "control" of crude supplies inhibits entry by independent refiners (who presumably need crude supply guarantees). There has been significant entry or expansion by independent refiners in the past fifteen years. Table 17 shows that 22 refiners have grown to more than 50,000 B/D of capacity during the period of 1951 to 1975. These companies have built or acquired 2,950,000 B/D of refining capacity during this period. As of January 1, 1975, these companies accounted for 20 percent of domestic refining capacity. In short, the evidence shows that new refiner entry has not been totally foreclosed; it remains to be shown whether any crude supply restrictions have or have

Source: Statement of Walter R. Pierson, President of Amoco Oil Company, before the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee, November 12, 1975.

TABLE 17

REFINING COMPANIES WHOSE OPERATING CRUDE OIL
DISTILLATION CAPACITIES GREW TO MORE THAN
50,000 B/D BETWEEN 1/1/51 AND 1/1/75

	Operating Refining Capacity ¹ on 1/1/51	on 1/1/75
Amerada Hess Corp.	- 0 -	730,000
Marathon Oil Co.	31,000	324,000
Coastal States Gas Corp.	- 0 -	212,982
American Petrofina	19,800	200,000
Kerr McGee	7,500	166,000
Commonwealth Oil Rfg.	- 0 -	161,000
Union Pacific (Champlin)	20,200	152,000
Murphy Oil Corp.	- 0 -	137,000
Koch Industries	- 0 -	109,800
Clark Oil & Rfg. Co.	26,000	108,000
Tennaco, Inc.	16,000	103,000
Crown Central	32,500	100,000
Toscopectro (The Oil Shale Corp.)	- 0 -	87,000
Charter Co.	10,000	85,900
Agway, Inc.	- 0 -	74,500
Farmland Industries	27,200	73,838
Tesoro Petroleum Co.	- 0 -	64,000
Pennzoil Co.	8,500	62,600
Apco Oil Corp.	10,000	58,670
Husky Oil Co.	5,000	59,000
United Rfg.	5,500	58,000
National Coop. Rfg. Assn.	20,000	54,150
Total of 22 Companies	239,200	3,181,440

1 These capacities are as reported by the Bureau of Mines, except that they include the capacity of the Virgin Island refinery of Amerada Hess on 12/1/74 as reported by the Federal Energy Administration. The 1951 data are for the present firm or its linear predecessor. A zero indicates that the company was not a refiner on 1/1/51 and did not become a refiner by acquiring a company that was refining on 1/1/51, although subsequent to its entry into refining it may have acquired such a firm.

not inhibited further refiner entry. It should be noted that certain government programs (notably the oil import program and state prorationing systems) have had the effect of limiting availability of crude supplies during this period.

Pipelines - Refiner access to crude supplies is intimately related to the crude pipeline system. The ownership of the pipeline system is heavily dominated by the top twenty refiners. Intuitively, this might suggest monopsony (single buyer) power of the major's gathering lines over independent producers, and control over the flow of crude to independent refiners, both of which would constitute anticompetitive behavior. However, most pipelines operate under I.C.C. or state common carrier regulations which would restrict abuses. Complaints to the I.C.C. from independent producers and refiners concerning alleged pipeline abuses have been few in number.¹ To independently review the effectiveness of its regulations, the Interstate Commerce Commission has instituted an investigatory proceeding² into anticompetitive conduct by pipelines. The results of this investigation should relate directly to the issue of exertion of market power by pipeline owners.

¹See statement of George M. Stafford, Chairman of the I.C.C., before the Special Subcommittee on Integrated Oil Operations - Senate Interior Committee; Dec. 12, 1973 (Part 3, p. 901).

²I.C.C. order served February 24, 1975; Ex Parte Proceeding No. 308 (sub.-No. 1).

It has also been suggested that the majors have created a barrier to entry for independent pipeline companies by refusing to grant pipeline throughput agreements. Under such an agreement, a shipper would guarantee a certain level of pipeline throughput for a specified number of years and would assume some liability if there were a deficiency in throughput. It is not clear to what extent non-owner shippers have any business incentive to participate in such agreements, especially in view of I.C.C. regulations concerning common carrier status (which dictate serving all shippers) and prohibitions against rate discrimination (which would preclude a pipeline granting discounts to those non-owner shippers that have assumed liabilities under a throughput agreement). Further, it is not clear to what extent any (major or independent) non-owner shipper has granted such throughput agreements

Marketing - Over the last three years, refiners have been increasing their supplies of gasoline, distillates and residual products to nonbranded independent marketers. This increased access to supplies would help these nonbranded independent marketers to increase their market shares. From 1972 to 1975, the percentage of refiner gasoline sales sold to nonbranded independent marketers increased from 14.4 percent to 17.7 percent¹. The refiners have made nearly twice as much

¹See table 14, Section II.

gasoline available to nonbranded independent marketers as they themselves have sold through their own refiner-owned-and-operated retail outlets. During this same period, refiner sales of middle distillate to nonbranded independent marketers increased from 20.2 to 23.2 percent of total refiner sales of middle distillate; sales of residual fuel to nonbranded independent marketers increased from 15.4 percent to 16.2 percent of total refiner sales of residual fuel. With the witnessed increase in refiner sales to nonbranded independent marketers, there does not seem to be a supply access squeeze for these non-integrated marketers.

Majors' Relationship with OPEC

Perhaps one of the most important issues regarding divestiture is how the dissolution of the majors' vertically integrated structure might impose some restraints on the pricing power of the OPEC cartel. The contention that divestiture would lower the OPEC price seems to be based on the following assertions:

- (1) The major integrated companies are performing the vital function of prorating production among the cartel members and are thereby enhancing the stability of the OPEC cartel.
- (2) The major integrated companies do not have an interest in seeking lower OPEC prices, since the OPEC price determines the price for their domestic crude production operations, which the majors would like to keep high.

The prorationing argument incorporates the concept that the stability of the OPEC cartel depends upon some mechanism that allocates production among all member countries so as to equate total OPEC supply to quantity demanded at the cartel-set price. Owing to the absence of formal production agreements among the OPEC members, it has been asserted that this prorationing function has been performed by the major integrated oil companies. Because each of the major integrated companies has a number of production affiliates in different OPEC countries, and many of these foreign affiliates operate with other majors through joint ventures (such as ARAMCO), it is asserted that these major integrated companies are in a position to allocate production among OPEC countries. The conclusion that the majors serve to stabilize the OPEC cartel depends upon the validity of both the premise that quantity prorationing is necessary for the maintenance of the cartel price, and the finding that major companies are able to set production in each of the member countries. However, the majors' power to adjust production rates has been diminished as the OPEC member countries have continued to nationalize oil production assets. Furthermore, strict quantity prorationing need not be a necessary condition for cartel stability so long as at least one member of the cartel (notably Saudi Arabia) is willing and able to adjust its own output so as to balance total cartel supply with total demand. The operation of the OPEC cartel is typified by the joint member agreement that

sets only the price of Saudi marker crude. The member countries (other than Saudi Arabia) individually apply their own adjustments to this price when determining the prices of their own crude. Thus, allocation of production among member countries is a function of the relative prices of the crudes, subject to Saudi Arabia's acceptance of the remaining share of the market (which would sometimes mean lowering its production in order to maintain the cartel).

In this case, the integrated companies would adjust their liftings of crude in response to the prices set by various host governments. Each company would have the incentive to seek lower crude costs so as to allow their refined product prices to be competitive with those of other companies. Further, market demand would increase with lower product prices. This factor, coupled with the fact that most integrated companies are net crude buyers, would mitigate the tendency to support the OPEC price in the hopes of sustaining higher domestic crude prices.

A recent FEA report¹ to Congress found that there already exist substantial incentives to crude importers to lower the OPEC price, but that the companies are currently unable to accomplish this objective. Among the conclusions of the study were the following:

¹Report to the Congress on the Feasibility of Lowering the Price of U.S. Oil Imports by Providing Incentives to Domestic Producers/Importers (March 1976).

- (1) Substantial commercial incentives exist for companies to bargain for the lowest available price for oil imported into the United States. The companies act to attain the lowest cost compatible with secure long-term supplies and refinery capacity.
- (2) The inability of the companies to reduce prices significantly below their current levels is a result primarily of the dominant position of OPEC in the world petroleum market and the poor bargaining position of companies and consuming governments.

It does not seem reasonable that divested operations would be in any stronger bargaining position with regards to the OPEC cartel than they are in their present integrated state. One aspect of this is that in the event of a crude shortage the divested refiners (who would not have their own crude supplies) might feel pressured into bidding inordinately high prices for crude in order to maintain refinery throughput. This was experienced during the 1973-74 embargo when two large U.S. independent refiners bid \$17 and \$22/bbl for Iranian and Nigerian crude¹. These bids were made before the January, 1974 doubling of OPEC crude prices to \$11.65/bbl.

¹Petroleum Intelligence Weekly, December 17, 1973, pp. 1-2, December 31, 1973, pp. 5

V. POTENTIAL ECONOMIC IMPACTS OF VERTICAL DIVESTITURE

In view of possible advantages to vertical integration as discussed in Section III, some potential economic effects¹ of imposing vertical divestiture on the petroleum industry can be delineated. At the outset, it should be noted that an analysis of the economic impacts of vertical divestiture should include a review of both benefits and any losses of efficiency that may be associated with vertical divestiture. The benefits would stem from the alleged increased competition that may be fostered by divestiture action. These benefits could take several possible forms: reduced barriers to entry which might promote entry by more efficient operations; reduction in prices to the extent that any excess profits or inefficiencies are being sheltered by market power; and decreased reliance on foreign supplies in the event that domestic exploration would be carried out more intensively in a non-vertically integrated environment. The realization of any of these potential benefits depends on the ability of divestiture to explicitly effect requisite changes. If anticompetitive behavior is partly responsible for the status quo situation, then it would be

¹Economic effects are taken to refer primarily to effects on factors such as prices, outputs, employment, resource allocation, etc., as distinct from "purely" financial factors (mainly capital investment). The two concepts are obviously inter-related and are identified separately simply as a means of focusing attention on each.

incumbent on divestiture to rectify this behavior enroute to bringing the desired benefits. Whether divestiture could accomplish either the intermediate (reducing anticompetitiveness) or the ultimate goal is open to substantial question.

The long-term disadvantages¹ of divestiture stem from foregone operating efficiencies with vertical integration. The existence of efficiencies associated with vertical integration is also a subject of intense controversy. (That is, do such efficiencies really exist?) It has been suggested², nonetheless, that in eliminating vertical integration, divestiture could cause:

- o Increased managerial and administrative "overhead" as compared to that which integration makes possible.
- o Increased working stock and reduced capacity utilization due to less coordinated internal scheduling. Higher transaction costs due to eliminating internal transfers that act as substitutes for market transactions.
- o Instability of earnings prompted by elimination of investment diversification.

¹Questions of transitory (short-term) legal and financial effects are handled in Section VI next.

²See, for example, William A. Johnson, et. al., Competition in the Oil Industry (Washington, D.C.: The George Washington University Energy Policy Research Project, 1976), pp. 54-55; and American Petroleum Institute, "Response to the Majority Staff Memorandum of the Senate Antitrust and Monopoly Subcommittee Regarding Vertical Divestiture in the Petroleum Industry" (March 29, 1976), p. 20.

- o Increased risks associated with lower security of supplies.
 - o Increased cost of capital due to reduced firm size.
- An in-depth analysis of the long-term disadvantages of divestiture must first assess the validity of each of these arguments and then attempt to quantify each in terms of increased costs to society.

VI. VERTICAL DIVESTITURE. AN ANALYSIS OF TRANSITIONAL EFFECTS

Introduction

The final passage of legislation requiring vertical divestiture would set in motion an administrative and legal process designed to transfer control over a major portion of the petroleum industry's assets to others. Basically, control may be transferred in one of two ways: (1) the assets may be sold to third parties not affected by the bill, or, (2) new successor companies could be established, the shares of which would be owned pro rata by the original companies' shareholders. In the latter case, the prohibited assets would then be "spun-off" into the new company, which would function as an independent entity. The original company would retain no form of control over the several spin-off companies formed to operate the divested assets.

S. 2387 recognizes that there are many practical administrative and legal difficulties inherent in the process of reorganizing an entire industry within a short period of time. The bill establishes a procedure for corporate planning of the details and sequence of divestiture events, and provides for the approval of divestiture plans by the Federal Trade Commission. This is intended to insure that all persons affected by a company's divestiture plan are treated fairly, and that the plan will accomplish the objectives of the bill in the required time. If divestiture is not accomplished

within five years, a company will be subject to suit by the Department of Justice and to civil penalties.

The purpose of this analysis is to examine the procedure established by the bill, in order to determine how it will work and what difficulties may be encountered in the transitional period.

Phase I - Formation of a Divestiture Plan

The first phase of the transition would entail the formation of acceptable divestiture plans by the petroleum companies affected by the new law. The process of designing a divestiture plan is difficult because a company must fairly and equitably take into account the diverse and often competing interest of its shareholders, employees, creditors and customers. The drafters of a divestiture plan must also insure that the necessary action will be completed within five years and that the successor companies are allocated an equitable share of the original company's assets and liabilities in order to compete effectively in the post-divestiture market.

There are probably enough inherent difficulties to prevent a company from formulating an acceptable plan without some form of guidance from the Federal Trade Commission (FTC), the government agency responsible for approving the plans.



The FTC Role

The first part of the FTC's involvement will be to make a series of decisions as to the proper approach an affected company should take in designing a divestiture plan. This will involve more than establishing a standard format and topics to be addressed; the FTC will have to analyze carefully each of the legal and practical difficulties inherent in simultaneously splitting up 18 of the country's largest corporations. On the basis of this analysis, the FTC will specify the type of treatment each plan must give to each issue and decide in advance what possible actions in furtherance of divestiture may be unacceptable. The consequences of these decisions will be discussed later.

Requests for Data

In deciding how to approach the problem of divestiture, the FTC will also have to determine what data it needs from the companies. S. 2387 gives the FTC power to require reports from the companies within the first 120 days (and later, if necessary). The data will cover detailed listings of each company's assets classified in accordance with the definitions used in the bill. The FTC will have to further define terminology used in S. 2387, since these definitions are not precise enough to resolve all questions relating to how an asset should be classified. Even if the affected companies agree with the FTC definitions, it may be very difficult for any of

the companies to comply within the period of time allotted.

However, extensions of time are possible.

Information requested by the FTC will most likely not be limited to a company's assets, since divestiture involves a fair apportionment of liabilities and equitable treatment for the various classes of persons affected by divestiture. The request for data will probably have to cover all major aspects of each company, including, for example, its capital structure, labor agreements, domestic and foreign business contracts, joint operations, intangible business assets and the like.

It seems reasonable to expect the initial 120-day period to expire with litigation concerning the requested data already in progress. The various actions, whether brought by the companies or the FTC, will presumably first be heard by FTC administrative law judges, with the possibility of an appeal in the special Petroleum Industry Divestiture Court established by the bill, and ultimately to the Supreme Court on an expedited basis. While numerous legal issues will be involved in the litigation, key issues might turn on Congressional intent, the reasonableness of the FTC classifications of prohibited assets, the scope of the data requested and the relatively brief period the affected companies would have to furnish the requested information.

Divestiture Plan Guidelines

At the same time that information as to company operations is being requested, the FTC will formulate and publish guidelines governing the acceptable content of divestiture plans. The guidelines will take the form of either rules, regulations or orders and must consequently be issued in accordance with the requirements of the Administrative Procedure Act governing notice and opportunity to comment.

The guidelines will anticipate the major controversies involved in the breaking-up of a company and may cause the companies to attempt to enjoin their issuance or seek other administrative remedies. If so, the litigation process summarized earlier may recur.

Formation of Divestiture Plans

Whatever the outcome of this litigation, companies intending to comply with the bill will begin to formulate detailed divestiture plans based on the guidelines.

Realistically, some of the preparatory work may already have been done by those companies that anticipated divestiture legislation. However, no company will have completed its plan since the nature of the issues to be treated requires instructions from the FTC. At a minimum, each plan will have to include consideration of the following:

- (1) A determination of which fixed business assets are associated with which corporate operations and must be divested.
- (2) A choice of method for divesting which may require a tax ruling from the IRS as to consequences of a spin-off, sale of assets, or other disposition.
- (3) Compliance with corporate charter, by-laws, and the laws of the state in which incorporated as to the legal procedure to be followed to make the reorganization a valid corporate act.' This may, depending on how S. 2387 is interpreted, also include the procedures for winding-up and liquidating a corporation under the above laws and the Bankruptcy Act.
- (4) Finding and selecting appropriate buyers if assets are to be sold, including negotiation of contingent purchase agreements and the terms of sale. This process must avoid violation of the antitrust laws. Note that the one year exemption from Section 8 of the Act of October 8, 1974, relating to interlocking directorates, provided by S. 2387 may be unrealistically short.
- (5) Contingent renegotiation of contracts for financing (such as indentures, loan agreements, note purchase agreements and the like), employee labor contracts, pension plans, concession agreements with foreign governments, joint ventures, supply agreements (such as through-put agreements, charters, and leases), and all other agreements in which the parent company faces materially altered business circumstances or some form of penalty, such as acceleration of indebtedness, if it proceeds to divest.
- (6) Acceptable allocation of intangible business assets and all liabilities. In general, this process must work so as to leave all successor entities in a tenable business position after divestiture in order to accomplish the purpose of the bill.
- (7) Certain state law investment requirements must be satisfied in order for successor entities to qualify as legal investments in those states.

Most of the seven steps set forth above would be difficult for any company to accomplish quickly under optimal conditions. The difficulties of the task are compounded by the uncertainties inherent in treating all corporate assets and liabilities rather than only a few. In addition, the imprecise definitions used in S. 2387 increase the difficulties of planning post-divestiture operations. For instance, the bill specifies what forms of control over specific assets would be prohibited. "Control" is defined to include not only actual ownership or use of interlocking directorates, but also "contractual relations which substantially impair the independent business behavior of another person." It is necessary for the bill to contain a clause of this sort since one of its purposes is to prevent reintegration between functional entities through long-term contracts. But it would be impossible for a company to know, either at the planning stage or after divestiture, whether its contemplated contractual relationships with suppliers or customers constituted a prohibited form of control. Even if general agreement could be reached as to the basic meaning of the definition and the criteria to be used in applying it, it is unlikely that a standard interpretation applying to all cases could be reached. Each particular contract or class of contracts would have to be examined individually to determine whether their purpose was to impose a prohibited form of control. The companies affected by the definition would still have to make the normal

contractual arrangements needed to operate a business, but would do so without knowing whether a number of their contracts could later be invalidated. The uncertainty caused by this one definition could be a substantial impediment to an orderly transition.

Financial Implications During the Transitional Period

Because of these uncertainties, financing problems could be severe. For instance, in most debt financing, a lender will stipulate that a technical default exists if all or a substantial portion of the assets that form the collateral for the loan have been disposed of by the borrower. Similarly, many financing agreements contain cross-default clauses where a technical default in one loan will accelerate the indebtedness in all other outstanding loans. Anticipating the threat of acceleration, oil companies might negotiate with their creditors to arrange an accommodation for the problems of accelerated indebtedness. However, if all companies went through this process simultaneously, lenders might insist on better terms, securing the loans with what they perceived to be the most viable assets after divestiture. In such a situation, lenders could put great pressure on the affected companies to, among other actions, curtail capital investment programs so as to provide cash to repay the outstanding debt over the shortest period possible. Thus, it is clearly possible that forced divestiture could put some companies in a position

where the repayment of existing debt would preclude new capital investments for some period of time.

With respect to the affected companies' incentive to make capital investments during the transition period, prior to the time vertical divestiture would be implemented, several hypotheses seem to be justified:

- o New investments in all but the most profitable areas would tend to be curtailed because of difficulties in raising new external financing including the refinancing of maturing issues, the possibility of shortened repayment schedules on outstanding debt, uncertainties about the values to be received from the sale of assets, and uncertainties about the profitability of certain companies following divestiture. Forecasting the size of the shortfall in capital investments is particularly difficult since it is contingent on many unknowns. Nevertheless, given all of the above factors, the potential magnitude of such a shortfall would seem to be quite large.
- o Investments in new large energy projects would seem particularly apt to suffer, since they require commitments to invest large amounts of money over long periods of time.
- o Investments in partially completed facilities would likely be completed especially for those in an advanced stage of construction, since abandoning such projects could result in large losses.
- o The cutback in the level of capital investments by divested firms could create profitable investment opportunity for other unaffected petroleum companies which might seize the opportunity to increase their level of new investment.

With respect to the ability of affected companies to raise capital externally, there is no question that the capital markets would, to some extent, react negatively to the uncertainties created by vertical divestiture. Given this situation, the following hypotheses are put forward regarding the

ability of the affected companies to raise external capital during the transition period:

- o There is substantial doubt about whether the sale of new unsecured long-term debt issues, including the refinancing of maturing issues, would be possible until lenders could ascertain what corporate entity would be reasonable for debt repayment. Under current bills this hiatus could run 1 - 1 1/2 years or longer if legal delays are encountered. In addition, should the FTC or some other body be given the power to rewrite loan covenants, it would seem unlikely that significant amounts of new debt investments could be attracted for many years unless they were exempted from FTC reformation, and thus given a preferred position over existing creditors' rights.
- o Once it is known what assets and liabilities are to be allocated to each of the divested corporate entities, it will still be difficult to sell long-term unsecured debt securities for some companies since many institutional investors will consider a company as an investment possibility only after it has demonstrated an ability to carry on relatively independent profitable operations for 3 to 5 years.
- o Some amount of secured long-termed debt, such as mortgages on specific buildings, may be possible since the basic security of the loans would be the asset rather than the creditworthiness of the parent company. However, the potential of such financing, with the possible exception of loans secured by future oil production, would be limited by the specialized nature of many of the oil companies' assets. In addition, to protect their existing investments during a highly uncertain period, existing lenders may have a legitimate reason to attempt to block any such new financing, particularly if they were not provided equal security.
- o It is unclear what the impact on the availability of unsecured short-term seasonal loans would be. However, should short-term lenders become concerned about being "locked in" (i.e., their loans not being fully repaid over a short time period), then they

would have many of the same concerns as the long-term unsecured lenders.

- o Some amount of short-term credit, secured by accounts receivable and/or inventories could likely be arranged during the transition period. However, existing long-term and short-term lenders may have legitimate reasons to attempt to block any such financings, particularly if their existing investments were not given equal security. On balance, it appears sound to conclude that for some period of time the great uncertainties associated with implementing divestiture would raise the cost of capital to many companies and seriously affect their ability to attract external capital.

If the companies and their creditors are unable to agree upon a solution to the problems of debt acceleration and apportionment, the divestiture plans submitted by the companies would be unilaterally favorable to their own interests, leaving resolution of the problem for settlement in the FTC hearings process or subsequent litigation. The plan approval hearings may be an adequate forum for resolving the issue if the FTC is given the power to apportion liabilities and deal with debt acceleration and cross default clauses. Even so, a number of constitutional questions will remain to be litigated concerning the FTC's attempted apportionment of debt.

Furthermore, depending on the final wording of the bill, the process of settling financing and contractual disputes could have to be undertaken for foreign as well as domestic assets. Foreign entities and governments asserting claims for breach of contract, failure of collateral and the like, would probably be able to enforce their rights before divestiture plans are approved and implemented because foreign courts

could expedite such cases and provide remedies which would not be stayed pending the outcome of FTC adjudicatory hearings.

Hence, foreign claimants may be in the highly favorable position of being able to enforce their claims even before divestiture begins in earnest. Moreover, foreign interests could use their claims as leverage in order to obtain more favorable terms if the contracts were renegotiated. All of this could work to the benefit of foreign interests and to the detriment of domestic interests, including U.S. shareholders. It also makes the process of planning divestiture extremely difficult since it would not be possible to determine what foreign assets would be available for distribution to successor companies at the time of domestic disposition.

Internal Corporate Problems

Aside from undertaking planning in the areas mentioned above, the companies would also have to make provision for the following types of internal corporate problems:

- o Increased demands on managerial time for resolution of litigation stemming from divestiture.
- o Training new managers, workers and technical experts to perform duplicate functions in successor companies.
- o Acquiring certain business assets such as new office, communications and computer software facilities needed for successor companies.
- o Rebudgeting to allow for higher costs after divestiture including duplicated services, advertising, litigation expense, new tax consequences, formation

and distribution of the shares of successor entities and the like.

- o Revising previously scheduled developmental and operational projects in light of changed circumstances.
- o Supplementing existing sources of financing if litigation hinders recourse to traditional sources.
- o Reexamining continued commercial viability of retaining non-divested assets (e.g., company-owned tankers).

The final step required for the completion of the first phase is compliance with any requirements of corporate law necessary to make the actions contemplated in the divestiture plan a valid corporate act. Since a sale or disposal of assets is involved, a company's shareholders would have to approve the plan. The legislation would, of course, prevail if shareholders disapprove the plan, but a number of complex legal issues would still remain to be resolved. In this regard, it should be noted that other mandatory divestitures, such as those required under existing antitrust laws, may not provide a useable precedent for resolving the legal issue. In either case, minority interests may litigate the fairness of the treatment accorded them under the plan when the plan is acted on by the company and when it is reviewed by the FTC.

Flow Charts

The charts presented here and elsewhere in the narrative, are designed to illustrate the necessary steps at each stage of the transition. Although the charts provide a schematic representation of the probable sequence of events in relation

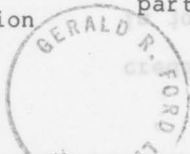
to a time-line, most estimates of how long a given event will take are conjectural. The actual time needed for each event will vary with the progress of litigation. Figure 1 illustrates the various events involved in Phase I of vertical divestiture.

Phase II - Divestiture Plan Approval

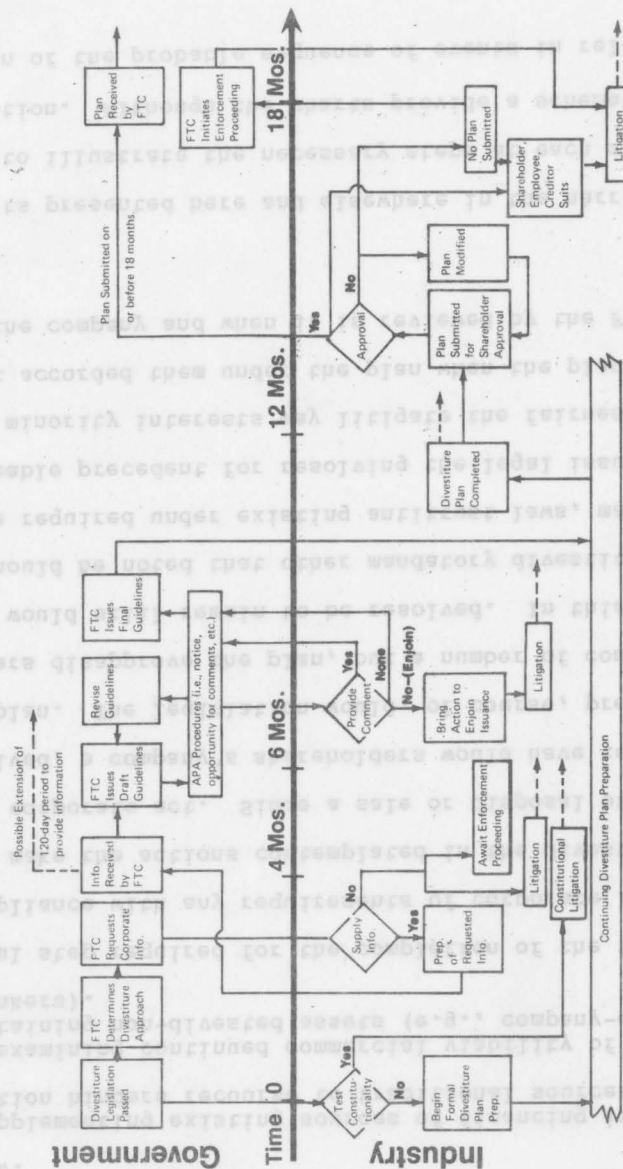
Under the schedule called for by the bill, final divestiture plans will be submitted to the FTC after 18 months. Some of the practical difficulties of completing the plan, as well as the main areas of ongoing litigation were mentioned in the preceding section. The plan approval process would begin with many, if not all, of the important questions still outstanding.

It is possible that not all companies would be ready or willing to submit divestiture plans when due under the law. This could necessitate the filing of enforcement actions attempting to require submission. In any event, the legality of an FTC order requiring submission of a plan and the validity of the underlying statute would be squarely at issue and provide the basis for full litigation of the basic legal issues inherent in divestiture.

Assuming that companies did submit final divestiture plans, the approval process would begin as soon as the Administrative Procedure Act's notice and other procedural requirements had been met. Notice would be given to all affected parties, which include shareholders, employee organizations,



Phase I: Vertical Divestiture Fig.1



creditors, customers, partially owned subsidiaries, co-partners in joint ventures and all others with an interest in outcome of the divestiture.

Each class of person affected by divestiture could intervene or otherwise seek representation at each adjudicatory hearing for the approval of each plan. As 18 companies are directly affected by the bill, there would be at least that many hearings. However, a company could permissably submit multiple plans, each requiring a separate hearing. In addition, an undetermined number of smaller pipeline companies which met the test for a "petroleum transporter" and which also owned or controlled any interest in any production, refinery or marketing asset, would also have to have divestiture plans approved. The number of adjudicatory hearings might be as high as 25 or 30.

Plan Evaluation Hearings

The FTC must evaluate each plan on the basis of (a) whether it is fair and equitable to each class of affected persons mentioned above; and (b) whether it will result in complete divestiture within the specified period. At a minimum, the FTC will make a determination whether the plans meet these criteria in the following respects:

- (1) Allocation of assets and liabilities of predecessor integrated companies among newly constituted successor companies.

- (2) Restructuring of rights of shareholders and persons holding options or warrants to purchase predecessor company stock.
- (3) Restructuring of the rights of public and private creditors, including foreign public and private creditors. May include rewriting contractual provisions to prohibit acceleration by lenders. May require negotiation of cross-guarantee arrangements or joint and several liability among successors for parent's obligations.
- (4) Revision of many commercial contracts (especially financing agreements) where divestiture will result in the possibility of material breaches or the accelerated indebtedness of oil companies.
- (5) Revision of existing labor agreements to allow for changed circumstances after divestiture.
- (6) Revision of numerous employment contracts, pension and profit sharing plans, leases, insurance policies, etc.
- (7) FTC must coordinate with FPC and ICC regarding pipeline matters, SEC regarding reporting new status, etc.

Aside from the various classes of persons affected by the hearing process, a number of government agencies have direct or indirect interests in the result of divestiture. The agencies could in theory intervene in the hearing process but would be more likely to assert their interests through the normal government channels or by filing amicus curiae briefs. These agencies include the ICC, FPC, FEA, NLRB, Department of Interior, State, Treasury, ERDA, SEC, Pension Benefit Guaranty Corporation and state governments.

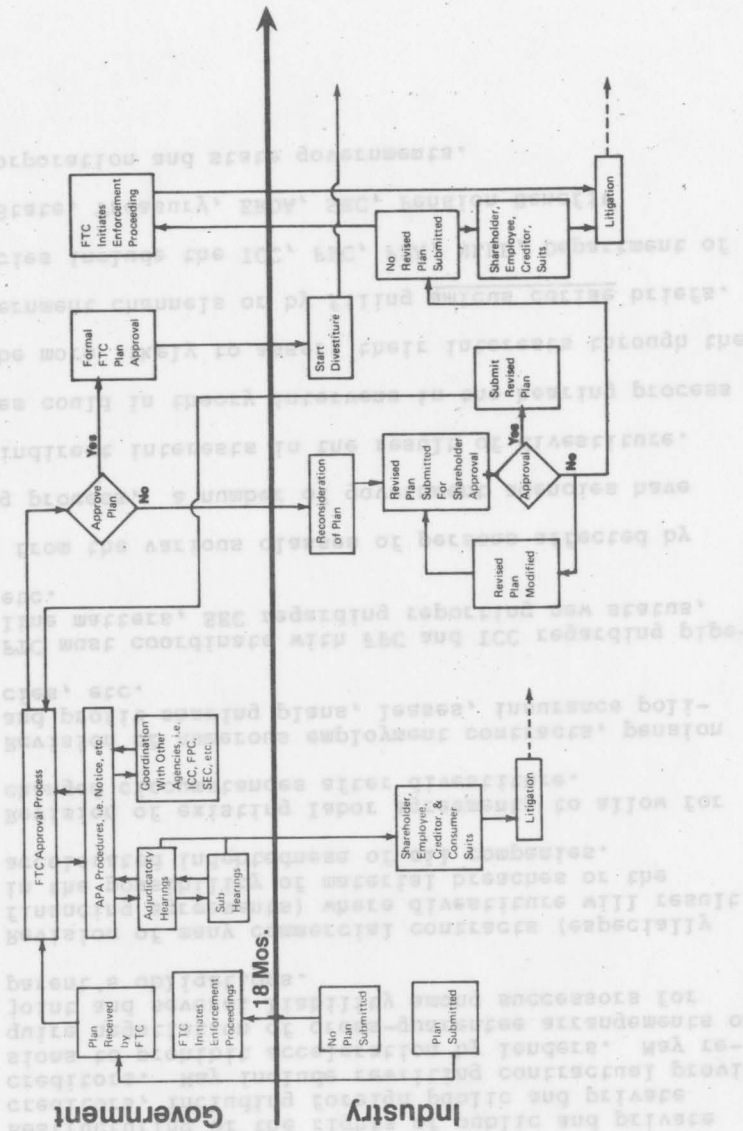
This suggests that the adjudicatory hearings may be complicated proceedings where the whole range of possible issues will be aired and ultimately litigated. However, the five-year period permitted for divestiture requires the quick resolution of the many actions stemming from the hearings process.

The establishment of a special court to hear appeals, as provided in the Hart bill, should facilitate relatively quick dispositions of most of the issues, since many of the issues arising from a given hearing will be similar, or identical, to the issues produced by the other hearings. However, the Petroleum Industry Divestiture Court may become overburdened by the number of administrative appeals filed within a short period of time and by the practical complexity of the issues it must resolve.

Each time the FTC hearing process results in disapproval or modification of a plan, certain repetitions in the procedures described above will have to be made. At the least, a company will have to reconsider its divestiture plan in light of FTC orders and submit a revised plan for approval.

Figure 2. shows the sequence of events in the second phase of divestiture.

Phase II: Vertical Divestiture Fig.2



Phase III - Implementation

After a divestiture plan has been approved, the actual process of forming new companies and dividing assets and liabilities would begin. If a plan involves sales of assets, buyers will have to be found and sales contracts negotiated in accordance with prevailing market conditions. This process must be carefully scheduled and spread out over a number of years in order to avoid undesirable disruptions in the orderly supply of petroleum products.

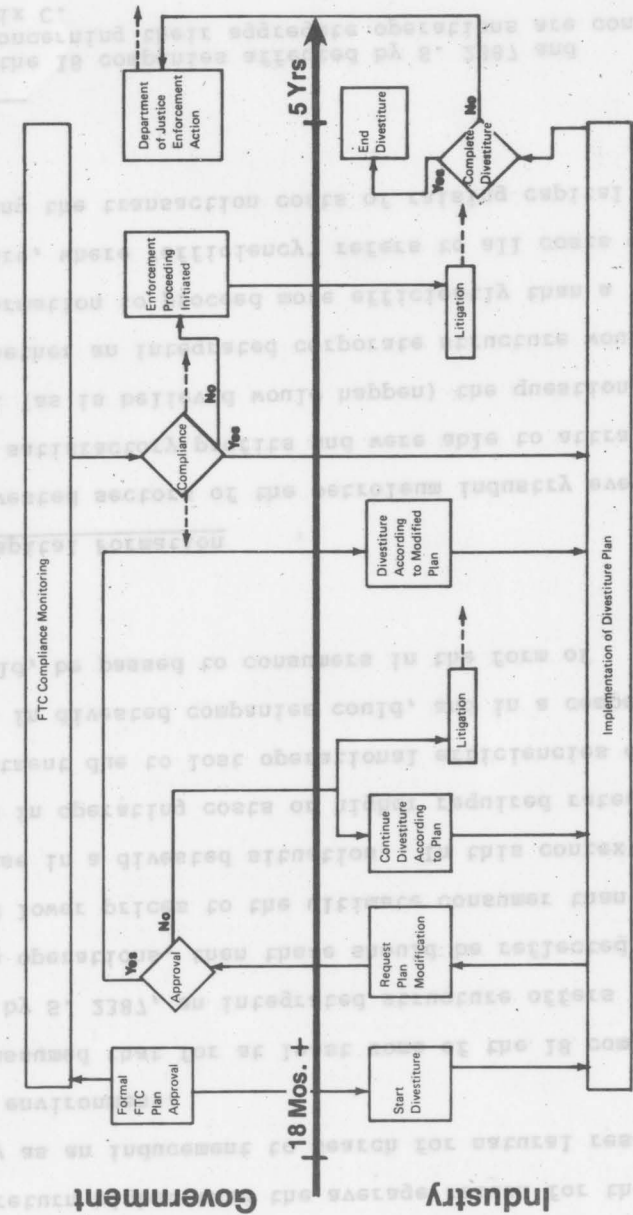
It is inevitable that questions will arise as to whether the method of actual divestiture conforms to the requirements of the final FTC order. In some cases, it may prove necessary to modify the FTC order to make it conform to the changed circumstances of the market. Even if good faith compliance efforts are assumed, a further delay from litigation of these matters may be anticipated.

Finally, after five years and without regard to how the divestiture process has actually proceeded, companies will be liable for civil penalties if they continue to own or control any prohibited assets. This entails still further enforcement proceedings either by the FTC or the Department of Justice. It is possible that some companies may have refused to cooperate with the FTC in any phase of the process, pending a definitive resolution of the major constitutional issues by the Supreme Court. If so, the final enforcement proceedings

will be complex, possibly leading to unilateral FTC decisions as to the quickest method of divesting with or without an approved company-drafted plan.

Figure 3 shows the events of the third phase of divestiture.

Phase III: Vertical Divestiture Fig.3



VII. LONG-TERM FINANCIAL IMPLICATIONS OF VERTICAL DIVESTITURE

Historically, the rate of return on net worth for the petroleum industry has been close to that of other industries. According to one source¹, for the period 1965 through 1975, the weighted average return on net worth of U.S.-based petroleum companies was 13.5 percent, compared to 12.7 percent for all industry (excluding petroleum, transportation, financial companies and public utilities). However, the petroleum industry average is distorted on the high side because of the large OPEC-induced crude and product price increases of 1973 and 1974. For the period 1965-1972, the petroleum industry return on net worth was 11.8 percent, versus 12.4 percent for all industry (excluding petroleum and the other previously mentioned companies).

One implication is that over a lengthy period of time, since petroleum industry earnings have not been excessive, it might be difficult to attract adequate amounts of new capital if the relative rate of return on investment for the petroleum industry as a whole is reduced significantly.

If it is assumed the weighted average return on net worth of the companies that result from divestiture would compare favorably with that of industry in general, the inferred return (based on historical data) would be approximately 13 per-

¹First National City Bank (New York). See Table 5.

cent. Exploration and producing companies might be expected to maintain a return higher than the average return for the entire industry as an inducement to search for natural resources in a risky environment.

If it is assumed that for at least some of the 18 companies¹ affected by S. 2387, an integrated structure offers efficiencies in operations, then these should be reflected in lower costs and lower prices to the ultimate consumer than would be the case in a divested situation. In this context then, increases in operating costs or higher required rates of return on investment due to lost operational efficiencies or increased risks in divested companies could, and in a competitive market would, be passed to consumers in the form of higher prices.

Efficiency of Capital Formation

Even if divested sectors of the petroleum industry eventually achieved satisfactory profits and were able to attract adequate capital (as is believed would happen) the question remains as to whether an integrated corporate structure would allow capital formation to proceed more efficiently than a divested structure, where "efficiency" refers to all costs of capital, including the transaction costs of raising capital.

¹A list of the 18 companies affected by S. 2387 and financial data concerning their aggregate operations are contained in Appendix C.

The discussion below addresses this issue from several aspects.

After the implementation of divestiture, which could take many years, it would most likely be difficult for the new organizations to acquire external capital for at least a few years, until they establish a reliable financial record. Therefore, divestiture would seem likely to inhibit the flow of capital and raise the cost of capital to the divested industry. This situation could possibly be offset by a program of U.S. Federal loan guarantees, directed subsidies or government purchase and subsequent operation of faltering companies. Such a program, however, would impose costs on the U.S. economy.

The separation of the various integrated sectors of the petroleum business would mean there would be no internal mechanism for transferring funds from cash surplus to cash short sectors (e.g., from production to refining, or vice versa). This might necessitate maintaining a higher aggregate level of working capital than would be required if the companies were not divested and consequently increase the total amount of necessary external financing as well as financing costs.

Given the capital intensive, fixed cost, nature of the petroleum industry, many investors put a premium on relative stability of operations which provides, on a continuing basis, adequate earnings capable of maintaining debt service. The stability of operations results from the coordination of

exploration, production, transportation, refining and marketing operations that are vertically integrated. In addition, the large size of the integrated companies gives many investors confidence in their ability to withstand substantial unexpected adversity. This large size and operational stability can enable integrated companies to raise large amounts of capital on relatively favorable terms. Therefore, if divestiture takes place, reduced size and potentially weakened operational stability could make financing by the segmented organizations more difficult to obtain and more costly. A partially offsetting factor which could provide some operational stability after divestiture would be for the divested segments to enter into long-term supply contracts¹. A series of contracts would seem most appropriate. For example, a refinery would have a greater degree of operational stability if it had long-term contracts for both the purchase of crude oil and the sale of refined products, rather than agreements for just the purchase of crude, or only the sale of products.

Lenders would probably not view long-term contracts as providing nearly as much operational stability as an integrated structure because of risks which long-term contracts may not cover adequately. For example, in an integrated situation, if one part of the business, such as marketing, were not

¹However, under the Hart bill, companies may not be permitted to enter into some types of long-term supply contracts.

profitable over a period of time, the other segments could support the unprofitable area until profitable operations could be resumed. It would be difficult for long-term contracts to provide a comparable degree of stability. To do so, the contracts would have to assure each segment some minimum level of earnings or a minimum percentage of combined earnings of all segments.

It would seem that should divestiture occur, allowing long-term contractual relationships between the divested segments of the industry would be of great assistance, if not absolutely essential, to financing many projects, such as large pipelines or refineries. However, even if such contracts are allowed, the creditworthiness and credit capacity of the segments would probably be lower, and the cost of capital higher than in an integrated structure.

The effect of divestiture on the ability of the industry to finance large projects (such as Alaskan oil or natural gas transportation systems) could be deleterious. As was mentioned, long-term contractual relationships may offer one means of arranging financing for large, risky long-lead time projects. However, such an approach might present a problem because financing could become very complicated. Instead of dealing with several large integrated companies, which might have the capacity to finance the project directly, it might be necessary to form a consortium consisting of a greater number of producing, refining, and possibly even marketing companies,

in order to achieve an aggregate credit capacity large enough to bear the risks of the project. The presence of a greater number of non-integrated companies could make it difficult to arrange financing terms and contractual obligations that would be satisfactory to lenders and the many companies involved.

In summary, it appears that capital formation could be achieved more efficiently with the existing vertically integrated structure, rather than with a government induced divested structure.

CONGRESS

SESSION

S. 2387

(Note.—Fill in all blank lines except those provided for the date, number, and reference of bill.)

IN THE SENATE OF THE UNITED STATES

Mr. Philip A. Hart

introduced the following bill; which was read twice and referred to the Committee on

A BILL

(Insert title of bill here)

To restore and promote competition in the petroleum industry, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That this Act may be cited as the "Petroleum Industry Competition Act of 1976."

FINDINGS AND PURPOSE

Sec. 2. (a) Findings. --The Congress finds and declares that--

(1) this Nation is committed to a private enterprise system and a free market economy, in the belief that competition spurs innovation, promotes productivity, prevents undue concentration of economic, social, and political power, and helps preserve a democratic society;

(2) vigorous and effective enforcement of the antitrust laws and reduction of monopoly and oligopoly power in the economy can contribute significantly to reducing prices, unemployment, and inflation;

APPENDIX A

S. 2387



(3) existing antitrust laws have been inadequate to maintain and restore effective competition in the petroleum industry; and

(4) the extraordinary dimensions of the remedy required by this Act necessitate expedited judicial supervision of the divestitures and attendant actions required by this Act.

(b) Purpose. --It is the purpose of the Congress in this Act to facilitate the creation and maintenance of competition in the petroleum industry, and to require the most expeditious and equitable separation and divestment of assets and interests of vertically integrated major petroleum companies.

TITLE I--INDUSTRY COMPETITION

DEFINITIONS

Sec. 101. As used in this title--

(a) "person" means an individual person or a corporation, partnership, joint stock company, trust, trustee in bankruptcy, receiver in reorganization, association, or any organized group whether or not incorporated. It does not include any authority of the United States or of the several States;

(b) "control" means a direct or indirect legal or beneficial interest in or legal power or influence over another person, directly or indirectly, arising through direct, indirect, or interlocking ownership of capital stock, interlocking directorates or officers, or contractual relations which substantially impair the independent business behavior of another person;

(c) "affiliate" means a person controlled by, controlling, or under or subject to common control with respect to any other person;

(d) "asset" means any property (tangible or intangible, real, personal, or mixed) and includes stock in any corporation;

(e) "commerce" means commerce among the several States, with the Indian tribes, or with foreign nations; or commerce in any state which affects commerce among or between a State and a foreign nation;

(f) "energy resource" means crude oil, natural gas liquids and condensate;

(g) "refine" means to change by any operation the physical or chemical characteristics of petroleum or petroleum products, exclusive of the operations of passing petroleum through a separator to remove gas, placing petroleum in settling tanks to remove basic sediment and water, dehydrating petroleum and generally cleaning and purifying petroleum;

(h) "refined product" means any product, whether liquid or gas, which is produced by a petroleum refinery;

(i) "marketing asset" means any asset used in the sale and distribution of gasoline or fuel oil, including diesel and distillate, to ultimate consumers at a retail motor fuel outlet, other than the initial sale with transfer of ownership to customers at the refinery.

(j) "operate" means engaging in the business of selling gasoline and diesel, directly or indirectly, through any agent who receives any commission, compensation or payment because of the sale of such product;

(k) "production asset" means --

(A) natural deposits of crude oil, or condensate and natural gas liquids;

(B) any asset used primarily in the exploration for, development of or production of an energy resource including, but not limited to, an interest in real property, whether or not such real property is developed or undeveloped;

(C) geological and geophysical information; and

(D) any interest in an energy resource produced by others;

(l) "refinery asset" means any asset used in the refining of an energy resource;

(m) "transportation asset" means any asset used in the transportation within the United States by pipeline, or gathering line of crude oil or refined product;

(n) "major marketer" means any person which, during the calendar year 1974 or in any subsequent year, alone or with affiliates, marketed or distributed 110,000,000 barrels of refined product within the United States.

(o) "major producer" means any person which, during the calendar year 1974 or in any subsequent calendar year, alone or with affiliates, produced within the United States either a total of 36,500,000 barrels of crude oil, condensate and natural gas liquids, or whose interest in crude oil, condensate and natural gas liquid production totalled 36,500,000 barrels;

(p) "major refiner" means any person which, during the calendar year 1974 or in any subsequent calendar year, alone or with affiliates, refined within the United States 110,000,000 barrels of refined product, including that refined by another refiner under a processing agreement;

(q) "petroleum transporter" means any person which transports crude oil or refined product by pipeline in commerce;

(r) "Outer Continental Shelf" means all submerged lands lying seaward and outside of the area of lands beneath navigable waters as defined in section 2 of the Submerged Lands Act (67 Stat. 29) and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control;

(s) "State" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and the Trust Territory of the Pacific Islands, and the Outer Continental Shelf;

(t) "Commission" means the Federal Trade Commission; and

(u) "prohibited asset" means any marketing asset, production asset, refining asset or transportation asset, the retention of which is prohibited by section 102 of this Act.

UNLAWFUL RETENTION

Sec. 102. Notwithstanding any other provision of law, five years after the date of enactment of this Act, it shall be unlawful --

(a)(1) For any major producer to own, or control, any interest in any refinery asset, transportation asset, or market-

(2) For any petroleum transporter to own or control any interest in any production asset, refinery asset, or marketing asset;

(3) For any major refiner or major marketer to own or control any interest in any production asset or transportation asset.

(b) For any person who owns any refining asset, production asset, or marketing asset to transport any energy resource in which he has any interest, by means of any transportation asset in which he has any interest.

UNLAWFUL OPERATION

Sec. 103. Upon enactment of this Act, it shall be unlawful for any refiner to operate, either directly or indirectly, any marketing asset which it did not operate prior to January 1, 1976.

EXEMPTIONS

Sec. 104.

(a) The Commission may exempt from the operation of section 102 any prohibited assets, the market value of which is five million dollars or less and which were acquired prior to January 1, 1976, where the retention of such assets will be consonant with the purposes of this Act and will have no significant adverse effect on competition.

(b) In order to facilitate the purposes of this section, the Commission is authorized to exempt any corporation formed or reorganized as a result of compliance with this section from the prohibitions contained in section 8 of the Act of October 5, 1914 (38 Stat. 732; 15 U.S.C. 19) for a period not to exceed one year.

REPORTS

Sec. 105. Each person subject to section 102 and such other persons as may be designated by the Commission, shall within one hundred and twenty days from the date of enactment of this Act, unless extended by order of the Commission, and at such other times subsequent thereto as the Commission may designate, file with the Commission such information and reports about the assets of such person and such other reports as the Commission may require.

ENFORCEMENT

Sec. 106.

- (a) The Commission, in accordance with such rules, regulations or orders as it deems appropriate to carry out the purposes of this Act, shall require each person subject to the provisions of Section 102 to submit within eighteen months of the date of enactment of this Act, a plan or plans for divestment of the prohibited assets. If, after notice and opportunity for hearings as provided under section 554 of title 5, United States Code, the Commission shall find the plan, as submitted or as modified by Commission order, necessary or appropriate to effectuate the provisions of this Act and fair and equitable to affected persons, the Commission shall approve the plan by order and shall take all necessary actions to enforce the plan; except that no plan shall be approved which will not substantially accomplish divestment of prohibited assets by any major producer, major refiner or petroleum transporter on or before five years from the date of enactment of this Act;
- (b) The Commission shall institute suits or actions only in the Petroleum Industry Divestiture Court established under title II of this Act, for such relief as is appropriate to assure compliance by any person with this Act, including, but not limited to, orders of divestiture, declaratory judgments, mandatory or prohibitive injunctive relief, interim equitable relief, the appointment of temporary or permanent receivers or trustees, civil penalties, and punitive damages for willful failure to comply with lawful Commission orders.
- (c) In carrying out the provisions of this Act, the Commission is authorized to utilize all powers conferred upon it, and all sanctions associated therewith, by any other provision of law.

PENALTIES

Sec. 107.

- (a) Any person who violates any provision of this Act shall forfeit and pay to the United States a civil penalty of not more than \$100,000 in the case of an individual, or not more than \$1,000,000 in the case of a corporation. Such penalties shall accrue to the United States and may be recovered in a civil action brought by the Commission. Failure to obey any order of a court pursuant to this Act shall be punishable by such court as a contempt of court.
- (b) Any person who violates a lawful order of the Commission issued pursuant to this Act shall forfeit and pay to the United States, for each violation, a civil penalty of not more than \$100,000 which shall accrue to the United States and may be recovered in a civil action brought by the Commission. Each separate violation of such an order shall be a separate offense, except that in the case of a violation through continuing failure or neglect to obey an order of the Commission, each day of continuance of such failure or neglect shall be deemed a separate offense.

TITLE II--PETROLEUM INDUSTRY DIVESTITURE COURT

ESTABLISHMENT

Sec. 201. There is hereby created a court of the United States to be known as the Petroleum Industry Divestiture Court (hereinafter referred to in this title as the "court") which shall consist of three or more judges to be designated by the Chief Justice of the United States from judges of the United States district courts and circuit courts of appeals.

JUDGES

Sec. 202. The Chief Justice of the United States shall designate one of such judges as chief judge of the court and may from time to time, designate additional judges for such court and revoke previous designations. The chief judge may, from time to time, divide the court into divisions of three or more members and any such division may render judgment as the judgment of the court.

REFERENCE JURISDICTION

Sec. 203. The court shall have the powers of a district court with respect to the jurisdiction conferred on it by this Act. The court or a panel thereof may, at any stage of a proceeding under this Act, refer the proceeding or any part thereof or any issue therein to a referee in bankruptcy to hear and determine any and all matters not reserved to the court or panel by this Act, or to referee as a special master, to hear and report generally or upon specified matters, or to a special master for such action with respect thereto as the court or a part thereof may direct.

TRANSFER JURISDICTION

Sec. 204. (a) A single judge or panel of the court may exercise all functions of the Judicial Panel on Multidistrict Litigation as provided under section 1407 of title 28, United States Code, with respect to any matter before the court.

(b) The Judicial Panel on Multidistrict Litigation shall exercise no function with respect to any matter before the court.

GENERAL JURISDICTION

Sec. 205. The court shall have exclusive jurisdiction, without appeal except as otherwise provided in this Act, of all actions and suits brought under this Act or which relate to any matter affected by the operation of this Act and the resolution of which is necessary to the expeditious implementation of any provision of this Act or of any divestiture required by this Act.

RULES

Sec. 206. The court shall exercise its powers and prescribe rules governing its procedure in such manner as to expedite the determination of cases of which it has jurisdiction under this Act.

APPEAL

Sec. 207. The court may fix and establish a table of costs and fees to be approved by the Supreme Court of the United States but the costs and fees so fixed shall not exceed with respect to any item the costs and fees charged in the Supreme Court of the United States. Within thirty days after entry of a judgment or order, interlocutory or final, by the court a petition of a writ of certiorari may be filed in the Supreme Court of the United States, and thereupon the judgment or order shall be subject to review by the Supreme Court in the same manner as a judgment of a circuit court of appeals of the United States. The Supreme Court shall advance on the docket and expedite the disposition of all causes filed therein pursuant to this section. The court and the Supreme Court upon review of judgments and orders of the court shall have exclusive jurisdiction. Except as provided in this section, no court, Federal, State, or Territorial, shall have jurisdiction or power to consider any appeal involving any action or suit brought under this Act or any matter affected by the operation of this Act and the resolution of which is necessary to the expeditious implementation of any provision of this Act or any divestiture required by this Act.

CLERK AND EMPLOYEES

Sec. 208. (a) The court may appoint a clerk who shall be subject to removal by the court. The court may appoint or authorize the appointment of such other officers and employees in such number as may be approved by the Director of the Administrative Office of the United States Courts.

(b) The officers and employees of the court shall be subject to the removal by the court or, if the court so determines, by the clerk or other officer who appointed them, with the approval of the court.

(c) The clerk shall pay into the Treasury all fees, costs, and other monies collected by him and make returns thereof to the Director of the Administrative Office of the United States Courts.

LAW CLERKS AND SECRETARIES

Sec. 209. The judges of the court may appoint such law clerks and secretaries as may be necessary.

LIBRARIAN, MARSHAL, AND BAILIFFS

Sec. 210. (a) The court may appoint a librarian and necessary library assistants who shall be subject to removal by the court.

(b) The court may appoint a marshal, who shall attend the court at its sessions, be custodian of its courthouse or chambers and offices, have supervision over its custodial employees, take charge of all property of the United States used by the court or its employees, and perform such other duties as the court may direct. The marshal shall be subject to removal by the court. The marshal, with the approval of the court, may employ necessary bailiffs. Such bailiffs shall attend the court, preserve order, and perform such other necessary duties as the court or marshal may direct. The bailiffs shall receive the same compensation as bailiffs employed for the district courts of the United States.

SEAT

Sec. 211. The principal seat of the court shall be in the District of Columbia. The court may sit at such times and places within the United States as the court may designate.

SEAL

Sec. 213. The court shall have a seal which shall be judicially noticed.

SESSIONS

Sec. 214. The time and place of the sessions of the court shall be prescribed by the chief judge pursuant to rule of the court.

CONFLICTS

Sec. 215. No judge of the court, receiver in bankruptcy or special master shall hear or determine any matter in which he has a conflict of interest.

APPROPRIATIONS

Sec. 216. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

EXTRAORDINARY ITEM	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET INCOME AFTER										
EXTRAORDINARY INCOME	0	122	5	7	110	121	345	12	197	197
NET INCOME AFTER TAX	1797	1934	2000	2421	2500	2500	2500	2500	2500	2500
MINORITY INTEREST	15	11	10	17	10	10	10	10	10	10
EPI INCOME TAXES	1594	1952	1990	2404	2490	2490	2490	2490	2490	2490
NET INCOME BEFORE TAXES	2951	3000	1010	817	810	810	810	810	810	810
10% OF DEPRECIATION	2212	2212	2212	2212	2212	2212	2212	2212	2212	2212
OTHER CHARGES	51	75	5	0	0	0	0	0	0	0
INHERENT EXPENSE	527	200	112	222	222	222	222	222	222	222
NET INCOME	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
INCOME TAXES	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
AND EXPENSES	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
OPERATING COSTS	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
DEPRECIATION	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
10% OF DEPRECIATION	2212	2212	2212	2212	2212	2212	2212	2212	2212	2212
REVENUE	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NON-OPERATING	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
REVENUE	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
EXPENSES	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
OPERATING	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
REVENUE	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
EXPENSES	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
OPERATING	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

APPENDIX B

PRO FORMA FINANCIAL STATEMENTS

Pro Forma Financial Statements

The tables in this Appendix present pro forma financial statements aggregated for the group of 18 companies effected by proposed divestiture legislation. Aggregate information covers both foreign and domestic operations. The firms included are:

- o Amerada Hess
- o Ashland
- o Atlantic Richfield
- o Cities Service
- o Continental Oil
- o Exxon
- o Getty/Skelly
- o Gulf
- o Marathon
- o Mobil
- o Phillips
- o Shell
- o Standard Oil of California
- o Standard Oil of Indiana
- o Standard Oil of Ohio
- o Sun Oil
- o Texaco
- o Union Oil of California

FINANCIAL INFORMATION COMPANY
 12000 WILSON AVENUE, SUITE 1000
 DALLAS, TEXAS 75243
 (214) 750-2000

CURRENT DOLLARS - 4/26/76

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

SUMMARY INCOME STATEMENT

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
REVENUES:										
GROSS OPERATING REVENUE	40,422	44,658	50,375	54,998	60,875	66,362	83,483	91,177	115,423	204,404
NON-OPERATING REVENUE	1,019	1,173	1,256	1,522	1,908	2,046	2,554	1,830	2,598	4,352
TOTAL REVENUE	41,440	45,831	51,631	56,519	62,783	68,408	86,036	93,007	118,020	208,755
DEDUCTIONS:										
OPERATING COSTS AND EXPENSES	30,061	33,044	37,205	40,457	45,076	48,791	60,953	65,472	80,321	150,599
TAXES OTHER THAN INCOME TAXES	1,668	1,866	2,287	2,562	3,373	4,199	4,275	4,896	5,951	6,871
WRITE OFFS	3,567	3,850	4,167	4,554	4,888	5,282	6,254	6,636	7,288	8,686
INTEREST EXPENSE	291	360	475	663	895	1,040	1,303	1,445	1,611	1,855
OTHER CHARGES	27	12	2	0	0	0	23	21	36	14
TOTAL DEDUCTIONS	35,613	39,131	44,135	48,236	54,231	59,312	72,808	78,470	95,208	168,024
NET INCOME BEF TAXES	5,827	6,700	7,495	8,284	8,552	9,096	13,228	14,537	22,813	40,731
EST INCOME TAXES	1,624	2,029	2,333	2,703	2,950	3,534	6,422	7,996	12,080	25,668
MINORITY INTEREST	72	77	76	71	101	96	206	221	326	559
NET INCOME AFTER TAX	4,131	4,594	5,086	5,497	5,486	5,466	6,600	6,320	10,407	14,504
EXTRAORD INCOME	0	135	2-	3	170-	1	157-	292-	75	181
NET INCOME AFTER EXTRAORDINARY ITEM	4,131	4,729	5,084	5,500	5,315	5,467	6,443	6,028	10,482	14,685

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

SUMMARY BALANCE SHEET

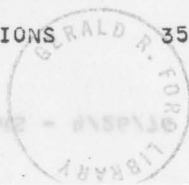
	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
ASSETS:										
CURRENT ASSETS										
CASH	1,465	1,677	1,836	1,718	1,905	1,890	2,997	3,192	4,338	6,472
MKTBL SECURITIES	2,811	2,737	2,900	3,692	3,212	3,383	3,734	4,305	7,218	9,969
ACC & NOTES REC'BL	7,180	8,624	9,794	10,829	11,994	12,979	16,317	18,231	22,795	31,462
INVENTORIES	4,410	4,845	5,413	5,846	6,268	6,990	9,511	9,399	11,745	21,752
OTHER	7	25	22	266	294	375	489	370	494	653
TOTAL CUR ASSETS	15,764	17,908	19,963	22,352	23,672	25,617	33,048	35,496	46,590	70,308
INVEST & ADVANCES	2,478	2,663	3,034	3,789	4,320	4,958	7,128	7,398	7,812	7,956
NET PROPERTY PLANT AND EQUIPMENT	32,067	35,464	40,030	45,680	51,028	54,469	65,109	67,472	71,272	80,615
OTHER ASSETS	1,409	1,555	1,725	2,135	2,616	2,477	3,274	3,560	3,408	3,824
TOTAL ASSETS	51,792	57,596	64,751	73,955	81,636	87,521	108,558	113,925	129,082	162,703
LIABILITIES AND NET WORTH:										
CURRENT LIABILITIES										
ACCOUNTS PAYABLE	3,837	4,651	5,098	5,725	6,374	6,652	9,624	11,139	16,019	27,289
NOTES & LOANS PAYB	1,088	1,683	2,087	2,324	3,097	3,482	4,295	4,573	3,566	5,734
TAXES PAYABLE	2,223	2,681	2,621	2,752	3,068	3,686	4,406	4,616	6,434	9,923
OTHER	1,100	1,092	1,451	1,626	1,959	2,008	2,577	2,743	3,645	4,666
TOTAL CUR LIABIL	8,248	10,106	11,256	12,627	14,499	15,828	20,902	23,070	29,664	47,612
LONG TERM DEBT	5,273	6,551	8,410	11,043	12,314	13,878	17,334	17,919	18,656	20,761
OTH. RESERVES/CREDIT	1,424	1,569	1,900	3,573	3,979	4,232	5,366	6,284	7,629	9,871
MINORITY INTEREST	743	795	861	892	941	995	2,360	2,353	2,497	2,964
SHAREHOLDERS' EQUITY										
PREFERRED	219	206	311	379	375	1,190	302	296	283	303
COMMON	35,885	38,325	42,010	45,441	49,528	51,398	62,294	64,002	70,353	80,992
TOTAL EQUITY	36,104	38,275	42,322	45,819	49,903	52,588	62,596	64,298	70,637	81,295
TOTAL LIABILITIES AND NET WORTH	51,792	57,596	64,751	73,955	81,636	87,521	108,558	113,925	129,082	162,703

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
FINANCIAL ANALYSIS OF A GROUP OF EIGHTEEN PETROLEUM COMPANIES (MILLION DOLLARS)										
SUMMARY SOURCE AND USE OF FUNDS										
SOURCE OF FUNDS:										
CASH EARNINGS	7,819	8,551	9,405	10,408	10,881	11,186	13,217	13,342	18,829	25,288
LONG TERM DEBT ISSUED	1,042	1,824	2,243	3,580	2,528	3,236	4,065	2,853	2,926	4,099
PREFERRED & COMMON STOCK ISSUED	73	174	257	386	244	401	117	161	411	107
SALE OF ASSETS AND OTHER TRANSACTIONS	389	487	734	402	784	575	496	1,856	2,077	3,615
TOTAL SOURCES	9,323	11,036	12,640	14,781	14,437	15,398	17,896	18,212	24,242	33,109
USE OF FUNDS:										
CAPITAL EXPENDITURES	5,908	7,242	8,176	9,184	9,439	9,331	11,367	11,524	12,672	19,795
INVESTMENT AND ADVANCES	274	470	374	685	571	489	719	496	459	820
DIVIDENDS TO SHAREHOLDERS	2,129	2,305	2,518	2,782	2,994	3,076	3,402	3,421	3,662	4,229
DIVIDENDS TO MINORITY INTERESTS	51	54	56	60	61	61	163	106	152	186
LONG TERM DEBT RETIRED	324	678	549	948	1,791	1,679	1,672	2,264	2,340	2,411
PREFERRED & COMMON STOCK RETIRED	292	101	75	104	132	147	121	121	455	98
TOTAL USES	8,963	10,751	11,734	13,763	14,988	14,783	17,443	17,932	19,741	27,540
CHANGE IN WORKING CAPITAL										
	340	285	905	1,018	551	615	453	280	4,500	5,569

FINANCIAL ANALYSIS (F A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

INCOME STATEMENT

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
GROSS OPERATING REVENUE (EXCLUDING SALES & EXCISE TAX)										
CRUDE & REFINED	34,058	36,924	41,501	44,934	49,687	54,289	68,901	75,701	96,078	177,049
NATURAL GAS	1,473	1,606	1,690	1,887	2,156	2,446	2,889	3,524	4,075	5,324
CHEMICAL PRODUCTS	2,943	3,480	3,851	4,459	4,922	4,924	6,057	6,940	8,464	13,761
OTHER	1,882	2,582	3,352	3,718	4,110	4,703	5,636	6,012	6,605	8,270
TOTAL OP REV	40,422	44,658	50,375	54,998	60,875	66,362	83,483	91,177	115,423	204,404
NONOPERATING REVENUE										
DIVIDENDS	693	778	780	510	208	438	398	107	116	160
INTEREST	213	258	269	336	445	479	668	615	853	1,720
SALE OF ASSETS	39	42	34	40	57	37	39	38	37	28
EQUITY INCOME	0	4	37	489	968	918	1,221	847	1,299	2,060
OTHER INCOME	75	95	136	147	231	175	228	224	292	383
TOTAL NON-OP REV	1,019	1,173	1,256	1,522	1,908	2,046	2,554	1,830	2,598	4,352
TOTAL REVENUE	41,440	45,831	51,631	56,519	62,783	68,408	86,036	93,007	118,020	208,755
DEDUCTIONS										
OPERATING COSTS AND EXPENSES	30,061	33,044	37,205	40,457	45,076	48,791	60,953	65,472	80,321	150,599
TAXES OTHER THAN INCOME TAXES	1,668	1,866	2,287	2,562	3,373	4,199	4,275	4,896	5,951	6,871
WRITE-OFFS										
DEPRE/DEPL/AMORT	2,717	2,970	3,290	3,641	3,855	4,227	5,142	5,433	6,011	6,732
CANCELLED LEASES	282	295	305	321	402	394	426	432	529	793
DRY HOLE COSTS	536	559	577	570	637	633	634	738	756	1,180
OTHER	32	26	5-	21	6-	29	53	32	8-	20-
TOTAL	3,567	3,850	4,167	4,554	4,888	5,282	6,254	6,636	7,288	8,686
INTEREST EXPENSE	291	360	475	663	895	1,040	1,303	1,445	1,611	1,855
OTHER CHARGES	27	12	2	0	0	0-	23	21	36	14
TOTAL DEDUCTIONS	35,613	39,131	44,135	48,236	54,231	59,312	72,808	78,470	95,208	168,024



FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
INCOME STATEMENT										
NET INCOME BEF TAXES & MINORITY INTEREST	5,827	6,700	7,495	8,284	8,552	9,096	13,228	14,537	22,813	40,731
INCOME TAXES										
FEDERAL	407	636	670	768	900	1,055	929	874	1,375	2,250
STATE & FOREIGN	1,217	1,423	1,663	1,935	2,050	2,479	5,493	7,122	10,706	23,418
TOTAL INCOME TAX	1,624	2,029	2,333	2,703	2,950	3,534	6,422	7,996	12,080	25,668
MINORITY INTEREST	72	77	76	71	101	96	206	221	326	559
NET INCOME BEF EXTRAORDINARY ITEM	4,131	4,594	5,086	5,497	5,486	5,466	6,600	6,320	10,407	14,504
-DOMESTIC	2,767	3,216	3,545	3,771	3,693	3,491	3,344	3,474	3,891	6,131
-FOR/WEST HEMIS	498	485	598	1,758	696	743	1,179	917	1,644	1,696
-FOR/EAST HEMIS	866	893	943	1,094	1,097	1,232	2,077	1,928	4,872	6,676
EXTRAORD INCOME--NET	0	135	2-	3	170-	1	157-	292-	75	181
NET INCOME AFTER EXTRAORD INCOME	4,131	4,729	5,084	5,500	5,315	5,467	6,443	6,028	10,482	14,685
SALES & EXCISE TAXES NOT INCLUDED ABOVE =	6,131	6,583	7,226	8,291	9,241	9,813	15,287	16,783	19,563	20,338

INCOME STATEMENT
FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

BALANCE SHEET

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
CURRENT ASSETS:										
CASH	1,465	1,677	1,833	1,718	1,905	1,890	2,997	3,192	4,338	6,472
MKTBL SECURITIES	2,811	2,737	2,900	3,692	3,212	3,383	3,734	4,305	7,218	9,969
ACCIS & NOTES REC	7,180	8,624	9,794	10,829	11,994	12,979	16,317	18,231	22,795	31,462
INVENTORIES:										
CRUDE & PRODUCTS	3,702	4,155	4,626	5,012	5,374	5,968	8,144	8,080	10,326	19,190
MATLS & SUPPLIES	623	632	681	730	786	873	1,168	1,136	1,256	2,339
OTH. MERCHANDISE	85	58	106	104	107	148	199	183	162	223
TOT INVENTORY	4,410	4,845	5,413	5,846	6,268	6,990	9,511	9,399	11,745	21,752
OTHER	7	25	22	266	294	375	489	370	494	653
TOTAL CUR ASSETS:										
DOMESTIC	10,505	11,530	12,614	13,730	14,941	16,018	15,959	17,317	19,996	NA
FOREIGN	5,271	6,378	7,349	8,622	8,758	9,599	17,089	18,195	26,595	43,239
TOTAL CUR ASSETS	15,764	17,908	19,963	22,352	23,672	25,617	33,048	35,496	46,590	70,306
INVST & ADVANCES:										
DOMESTIC	481	866	841	1,351	1,431	1,596	1,654	1,563	1,578	2,005
FOREIGN	1,990	1,797	2,193	2,438	2,862	3,362	5,474	5,835	6,234	5,951
TOTAL	2,478	2,663	3,034	3,789	4,320	4,958	7,128	7,398	7,812	7,956
PROPERTY/PLANT/EQUIP (DOMESTIC)										
GROSS INVESTMENT:										
PRODUCTION	25,358	26,649	28,774	31,509	34,394	35,575	36,154	37,605	40,637	46,819
TRANSPORTATION										
CRUDE & PROD PIPES	2,519	2,278	2,463	2,647	2,947	3,186	3,388	3,517	3,649	4,603
N GAS TRANSMISSION	0	320	348	377	391	405	481	483	499	519
MARINE	592	614	686	819	928	986	971	776	921	914
OTHER	264	300	345	360	400	413	413	425	465	468
TOT TRANS	3,375	3,585	3,841	4,202	4,666	4,990	5,253	5,200	5,533	6,505
PROCESSING	10,197	11,362	12,796	14,003	15,703	16,927	17,619	18,001	18,689	21,060
MARKETING	6,203	6,935	7,783	8,515	9,813	10,654	11,685	11,651	11,792	11,508
OTHER	1,134	1,397	1,679	1,870	2,159	2,397	2,611	2,618	2,753	3,359
TOT GROSS INVEST	46,265	49,927	54,873	60,100	66,736	70,543	73,323	75,074	79,404	89,250
ACCUM RESERVES:										
PRODUCTION	13,093	13,789	14,848	15,430	16,816	17,761	18,404	18,965	20,134	22,142
TRANSPORTATION										
CRUDE & PROD PIPES	1,426	1,355	1,422	1,501	1,622	1,682	1,721	1,747	1,776	1,886
N GAS TRANSMISSION	0	125	136	146	154	167	208	216	231	247
MARINE	325	352	391	468	494	520	526	394	521	536
OTHER	130	140	181	152	184	189	188	197	203	195

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

BALANCE SHEET

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOT TRANS	1,881	2,051	2,121	2,267	2,453	2,558	2,643	2,554	2,730	2,864
PROCLSSING	5,893	6,230	6,683	7,055	7,722	8,185	8,419	8,635	9,016	9,796
MARKETING	2,261	2,415	2,589	2,677	2,992	3,177	3,514	3,524	3,730	3,792
OTHER	451	533	591	667	776	855	931	847	944	1,127
TOT RESERVES	23,580	25,011	26,833	28,095	30,760	32,536	33,911	34,525	36,555	39,720
NET INVESTMENT:										
PRODUCTION	12,264	12,860	13,925	16,079	17,576	17,814	17,751	18,639	20,502	24,677
TRANSPORTATION										
CRUDE & PROD PIPES	1,092	923	1,041	1,146	1,325	1,503	1,667	1,770	1,873	2,718
N GAS TRANSMISSION	0	194	212	231	237	238	273	267	268	272
MARINE	267	262	294	351	434	466	445	382	400	378
OTHER	135	160	164	208	217	224	225	227	262	273
TOT TRANS	1,493	1,534	1,720	1,935	2,213	2,432	2,610	2,646	2,803	3,641
PROCLSSING	4,303	5,132	6,113	6,949	7,981	8,743	9,200	9,367	9,673	11,264
MARKETING	3,942	4,520	5,194	5,838	6,622	7,477	8,171	8,127	8,062	7,716
OTHER	682	864	1,087	1,204	1,383	1,542	1,680	1,771	1,608	2,233
TOT NET INVEST	22,685	24,915	28,040	32,004	35,976	38,007	39,412	40,549	42,848	49,531
PROPERTY/PLANT/EQUIP (FOREIGN)										
GROSS INVESTMENT:										
PRODUCTION	7,036	7,944	8,568	9,549	10,300	11,092	14,808	15,467	16,351	18,004
TRANSPORTATION										
CRUDE & PROD PIPES	604	565	618	664	820	849	977	1,140	1,146	1,094
N GAS TRANSMISSION	0	37	38	39	3	4	18	17	22	32
MARINE	1,609	1,673	1,857	2,190	2,399	2,712	4,226	4,746	5,748	6,618
OTHER	11	12	93	22	26	31	33	36	33	37
TOT TRANS	2,224	2,268	2,606	2,935	3,248	3,595	5,255	5,938	6,949	7,980
PROCLSSING	3,892	4,440	5,087	5,764	6,371	7,116	13,161	13,481	14,084	15,121
MARKETING	3,261	3,762	4,368	4,688	5,090	5,503	9,728	9,984	16,171	10,474
OTHER	462	389	441	419	458	522	1,189	1,397	1,231	1,312
TOT GROSS INVEST	16,656	18,622	21,069	23,375	25,468	27,828	44,142	46,267	48,820	52,691

BALANCE SHEET

(MILLION DOLLARS)
EIGHTEEN PETROLEUM COMPANIES
FINANCIAL ANALYSIS OF A GROUP OF

FINANCIAL ANALYSIS OF A GROUP OF
 LIGHTEN PETROLEUM COMPANIES
 (MILLION DOLLARS)

BALANCE SHEET
 (CONTINUED)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
ACCUM RESERVES:										
PRODUCTION	3,274	3,819	4,095	4,397	4,693	5,094	7,002	7,389	8,041	8,470
TRANSPORTATION										
CRUDE & PROD PIPES	295	262	278	302	348	390	420	463	494	512
N GAS TRANSMISSION	0	10	13	14	0	1	3	3	4	6
MARINE	550	617	704	675	884	982	1,502	1,637	1,674	1,871
OTHER	3	3	52	17	12	13	19	22	6	9
TOT TRANS	848	892	1,047	1,174	1,245	1,386	1,944	2,124	2,166	2,380
PROCESSING	1,778	2,031	2,237	2,347	2,527	2,768	5,426	5,494	5,804	6,303
MARKETING	1,232	1,389	1,593	1,680	1,820	1,954	3,714	3,811	9,983	4,240
OTHER	308	137	110	100	130	164	359	527	370	415
TOT RESERVES	7,202	8,267	9,079	9,699	10,415	11,366	18,445	19,345	20,396	21,807
NET INVESTMENT:										
PRODUCTION	3,761	4,125	4,475	5,151	5,607	5,998	7,806	8,078	8,310	9,534
TRANSPORTATION										
CRUDE & PROD PIPES	309	304	340	362	472	458	557	677	653	582
N GAS TRANSMISSION	0	27	25	24	3	3	16	14	17	26
MARINE	1,059	1,057	1,153	1,315	1,515	1,731	2,724	3,109	4,075	4,947
OTHER	8	9	41	39	13	17	14	14	39	45
TOT TRANS	1,377	1,396	1,559	1,761	2,003	2,209	3,311	3,814	4,784	5,601
PROCESSING	2,115	2,409	2,851	3,437	3,644	4,348	7,736	7,987	8,280	8,818
MARKETING	2,028	2,373	2,775	3,008	3,270	3,548	6,014	6,174	6,188	6,234
OTHER	174	252	331	319	328	358	830	870	862	897
TOT NET INVEST	9,455	10,555	11,990	13,676	14,052	16,462	25,697	26,922	26,424	31,084
PROPERTY/PLANT/EQUIP (WORLDWIDE)										
TOTAL GROSS INVEST	62,923	68,676	75,942	83,475	91,203	98,371	117,464	121,341	128,223	142,142
TOTAL RESERVES	30,835	33,212	35,913	37,795	41,175	43,902	52,356	53,870	56,951	61,527
TOTAL NET INVEST	32,087	35,464	40,030	45,680	50,028	54,469	65,109	67,472	71,272	80,615
OTHER ASSETS:										
DOMESTIC	1,111	847	954	1,415	1,581	1,441	1,525	1,632	1,534	1,682
FOREIGN	293	708	771	720	1,035	1,036	1,748	1,912	1,874	2,142
TOTAL	1,409	1,555	1,725	2,135	2,616	2,477	3,274	3,560	3,408	3,824
TOTAL ASSETS:										
DOMESTIC	34,783	38,158	42,449	48,500	53,928	57,063	58,550	61,061	65,956	NA
FOREIGN	17,010	19,439	22,302	25,455	27,708	30,458	50,008	52,864	63,126	82,416
TOTAL	51,792	57,596	64,751	73,955	81,636	87,521	108,558	113,925	129,082	162,703

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

BALANCE SHEET
(CONTINUED)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
CURRENT LIABILITIES:										
ACCOUNTS PAYABLE	3,837	4,651	5,098	5,725	6,374	6,652	9,624	11,139	16,019	27,289
NOTES & LOANS PAY	1,088	1,683	2,087	2,324	3,097	3,482	4,295	4,573	3,566	5,734
TAXES PAYABLE	2,223	2,681	2,621	2,752	3,068	3,686	4,406	4,616	6,434	9,923
OTHER	1,100	1,032	1,451	1,826	1,959	2,008	2,577	2,743	3,645	4,866
TOTAL CUR LIAB.	8,248	10,106	11,256	12,627	14,499	15,828	20,902	23,070	29,664	47,812
LONG TERM DEBT:										
DOMESTIC	4,114	4,910	6,400	7,706	8,388	9,421	10,635	10,837	12,167	14,056
FOREIGN	1,083	1,641	2,010	3,338	3,926	4,457	6,699	7,082	6,489	6,705
TOTAL	5,273	6,551	8,410	11,043	12,314	13,878	17,334	17,919	18,656	20,761
DEFERRED CREDITS & OTHER RESERVES:										
DOMESTIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOREIGN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL	1,424	1,569	1,900	3,573	3,979	4,232	5,366	6,284	7,629	9,871
MINORITY INTEREST:										
DOMESTIC	58	61	84	92	98	96	927	861	912	1,144
FOREIGN	685	734	777	800	842	899	1,434	1,492	1,585	1,620
TOTAL	743	795	861	892	941	995	2,360	2,353	2,497	2,964
NET WORTH:										
PREFERRED STOCK	219	206	311	379	375	1,190	302	296	283	303
COMMON STOCK	8,326	8,456	8,603	7,849	8,461	8,116	8,967	8,988	6,947	9,940
CAPITAL SURPLUS	4,613	4,899	4,211	6,556	7,409	7,315	7,798	7,957	7,789	7,935
RETAINED EARNINGS	22,946	24,970	28,211	31,036	33,658	35,967	45,528	47,058	53,618	63,116
TOTAL SHARE- HOLDERS' EQUITY	36,104	38,275	42,322	45,819	49,903	52,588	62,596	64,298	70,637	81,295
TOTAL LIABILITIES AND NET WORTH	51,792	57,596	64,751	73,955	116,366	87,521	108,558	113,925	129,082	162,703
TOTAL LIABILITIES AND PREFERRED STOCK	15,907	19,528	22,740	28,514	32,108	36,123	46,265	49,923	58,729	81,711
NET ASSETS:										
DOMESTIC	24,794	26,266	28,527	31,584	34,525	35,068	35,404	36,219	38,057	44,758
FOREIGN	11,091	12,059	13,485	13,857	15,003	16,330	26,889	27,783	32,296	36,233
TOTAL NET ASSETS	35,885	38,325	42,010	45,441	49,528	51,398	62,294	64,002	70,353	80,992

CURRENT DOLLARS - 4/26/76

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
FINANCIAL ANALYSIS (F A GROUP OF EIGHTEEN PETROLEUM COMPANIES (MILLION DOLLARS)										
SOURCE AND USE OF FUNDS										
** SOURCE OF FUNDS	514	410	514	492	517	493	572	438	420	950
CASH EARNINGS:										
NET INCOME BEFORE EXTRAORDINARY	4,131	4,594	5,086	5,497	5,486	5,466	6,600	6,320	10,407	14,504
WRITEOFFS										
DEPRE/DEPL/AMORT	2,717	2,970	3,290	3,641	3,855	4,227	5,142	5,433	6,011	6,732
CANCELLED LEASES	282	295	305	321	402	394	426	432	529	793
DRY HOLE COSTS	536	559	577	570	637	633	634	738	756	1,180
OTHER	32	26	5-	21	6-	29	53	32	8-	20-
TOTAL WRITEOFF	3,567	3,850	4,167	4,554	4,888	5,282	6,254	6,636	7,288	8,686
MINORITY INTEREST	72	77	76	71	101	96	206	221	326	559
OTHER NONCASH CHGS	50	31	76	287	406	343	156	165	808	1,540
TOTAL CASH EARN.	7,819	8,551	9,405	10,408	10,681	11,186	13,217	13,342	18,829	25,288
EXTRAORDINARY INCOME--NET	0	135	2-	3	170-	1	157-	292-	75	181
LONG TERM DEBT ISSUE	1,042	1,824	2,245	3,580	2,528	3,236	4,065	2,853	2,926	4,099
STOCK ISSUED:										
PREFERRED STOCK	3	15	45	2	1	1	5	5	1	50
COMMON STOCK	70	157	212	384	243	400	112	156	410	57
TOT STOCK ISSUED	73	174	257	386	244	401	117	161	411	107
OTHER TRANSACTIONS	389	352	736	404	954	574	653	2,148	2,001	3,434
TOTAL SOURCE OF FUNDS	9,323	11,036	12,640	14,781	14,437	15,398	17,896	18,212	24,242	33,109

SOURCE AND USE OF FUNDS
(MILLION DOLLARS)
FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

SOURCE AND USE OF FUNDS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
** USE OF FUNDS										
CAPITAL EXPENDITURES										
DOMESTIC CAP EXPEND										
PRODUCTION	2,289	2,438	2,814	3,638	3,413	2,778	2,472	3,622	4,589	7,794
TRANSPORTATION										
PIPELINES	108	103	184	153	142	283	268	183	225	1,018
N GAS TRANS	0	21	30	34	26	16	32	13	19	24
MARINE	21	18	22	33	96	79	97	58	86	73
OTHER	25	48	30	33	43	40	44	39	44	50
TOT TRANSPORT	154	190	265	253	307	418	441	293	374	1,165
PROCESSING	781	1,326	1,274	1,264	1,329	1,454	1,392	1,162	1,230	2,277
MARKETING	734	995	1,031	980	1,096	1,254	1,303	989	730	525
OTHER	110	246	321	267	272	334	367	286	272	668
TOTAL DOMESTIC	4,103	5,193	5,704	6,404	6,417	6,238	5,976	6,351	7,194	12,430
FOREIGN CAP EXPEND										
PRODUCTION	974	915	994	1,227	1,334	1,282	1,823	1,800	1,978	3,629
TRANSPORTATION										
PIPELINES	31	30	67	77	59	45	144	107	80	66
N GAS TRANS	10	14	10	11	1	0	3	2	5	7
MARINE	79	93	137	250	366	339	580	699	1,206	1,354
OTHER	21	10	2	3	3	3	3	4	4	6
TOT TRANSPORT	111	131	206	331	429	387	731	812	1,295	1,433
PROCESSING	267	428	695	664	685	813	1,660	1,456	1,232	1,446
MARKETING	403	413	463	484	517	550	1,049	925	817	719
OTHER	136	165	94	74	57	61	128	180	156	138
TOTAL FOREIGN	1,811	1,949	2,472	2,780	3,022	3,093	5,392	5,173	5,478	7,365
TOT CAP EXPENDITURES	5,908	7,242	8,176	9,184	9,439	9,331	11,367	11,524	12,672	19,795
INVESTMENT AND ADVANCES										
	274	470	374	685	571	489	719	496	459	820
OBLIGATIONS RETIRED:										
LONG TERM DEBT										
REPAID/REFUNDED	95	179	122	384	1,171	721	644	1,247	1,023	1,097
TRANS TO CURRENT	229	499	427	565	619	959	1,028	1,018	1,317	1,314
PREFERRED STOCK	1	11				52	37	38	5	3
COMMON STOCK	291	90	75	101	124	83	84	84	451	95

FINANCIAL ANALYSIS OF A GROUP OF
EIGHTEEN PETROLEUM COMPANIES
(MILLION DOLLARS)

SOURCE AND USE OF FUNDS

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
TOTAL RETIREMENT	616	780	623	1,053	1,922	1,826	1,793	2,386	2,795	2,509
CASH DIVIDENDS PAID										
COMMON STOCK	2,069	2,236	2,449	2,711	2,845	2,924	3,257	3,283	3,527	4,098
PREFERRED STOCK	60	70	69	71	149	152	145	138	135	132
TOTAL	2,129	2,305	2,518	2,782	2,994	3,076	3,402	3,421	3,662	4,229
MINORITY INTEREST	51	54	56	60	61	61	163	106	152	186
TOTAL DIVIDENDS	2,180	2,359	2,574	2,842	3,055	3,137	3,564	3,526	3,814	4,415
TOTAL USE OF FUNDS	8,983	10,751	11,734	13,763	14,988	14,783	17,443	17,932	19,741	27,540
CHANGE IN WORKING CAPITAL	340	265	905	1,018	551-	615	453	280	4,500	5,569
TOTAL USE OF FUNDS AND CHANGE IN W.C.	9,323	11,036	12,640	14,781	14,437	15,398	17,896	18,212	24,242	33,109