PIRINC

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VERTICAL DIVESTITURE AND OPEC:

A Critical Examination of the Arguments for Vertical Divestiture of U.S. Foreign Oil Operations

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The Petroleum Industry Research Foundation, Inc. (PIRINC) is a non-profit organization whose primary function is the study of petroleum economics and related matters.

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Introductory Note

This report was prepared by the Petroleum Industry Research Foundation, Inc. under a contract let by the American Petroleum Institute. The study was executed with the understanding that it was to be an independent evaluation of the subject covered. Therefore, the opinions expressed in this study are solely those of the authors and are not meant to represent either those of the API or any corporate entity.

Special Note

This report was completed just prior to the OPEC Ministerial Conference of December 15-20, 1976, at which a number of changes affecting prices and production levels were announced for 1977. We have not attempted to incorporate these changes in our study since their full significance is not yet clear. However, as of now, it does not seem that the decisions taken at the Conference will affect any of the conclusions reached in our study on the subject of Vertical Divestiture and the International Oil Industry.

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The period since the Arab oil embargo and the OPEC price increases of 1973 has been marked in the U.S. by a series of public reexaminations of our energy posture. The basic questions asked again and again are whether our existing energy institutions are adequate for the new era which the events of 1973 have brought about and whether these events could have been prevented, or at least mitigated, had our energy policy and institutions been different. In particular, the role of the U.S. oil companies, at home and abroad, has come under considerable scrutiny. A number of changes to affect the structure and operations of these companies have been proposed, such as federal chartering of major oil companies, creation of a government operated federal oil and gas corporation, and a government oil import policy.

The most radical change, however, is the proposed vertical divestiture of all major integrated oil companies into separate independent producing, pipeline and refining-marketing segments. The proposal has found its expression in Senate Bill S.2387, the Petroleum Industry Competition Act of 1976, which was passed by the Senate Committee on the Judiciary with an 8-7 vote on June 15, 1976.

The Principal Features of S.2387

Briefly, S.2387 would legislate that within five years of its enactment it would be unlawful:

(a) (1) for any major producer to own, or control, any interest in any refinery asset, transportation asset, or marketing asset;
(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.

The bill defines a major producer as one who produced in 1974 or any subsequent year 36.5 million barrels of crude oil in the U.S. or had interest in such a level of production. A major refiner is defined as one who refined 110 million barrels in 1974 or thereafter in the U.S. A major marketer is one who marketed or distributed 110 million barrels in the U.S. in or after 1974. Production and refining assets are defined in customary terms without geographic or other limitations. Transportation assets are pipeline facilities in the U.S. or

Altogether, the largest 18 U.S. oil companies are expected to be immediately affected by the bill, according to the Senate Judiciary Committee. A list of these companies is found in the Appendix to thi report.

Passage of the Act or similar legislation would result in a basi restructuring of the U.S. oil industry in its domestic and foreign operations. A number of analyses exist of the domestic impact of S.2387. While some of these analyses also address themselves to the international aspects of the proposed divestiture,* no comprehensive separate study of this particular aspect has been published. This report will therefore address itself exclusively to the foreign implications of S.2387.

Foreign Aspects of S.2387

The first thing to be said about the international aspects of S.2387 is that the bill itself makes no direct reference to them either in its preamble or any of the substantive sections. As pointed out, it specifically limits to domestic activities the criteria of production, refining and marketing size which determine whether a company is subject to the Act. It also specifically excludes foreign pipelines from divestiture. It contains no such exclusion for foreign production and refining. Thus, by implication, an integrated U.S. oil company subject to the Act by virtue of the size of its domestic activities must also divest its refining from its production activities abroad. Or, if it operates only one of these sectors abroad the operation could not be owned by a domestic company active in another sector.

Arguments for Divestiture of Foreign Operations

Although the extension to foreign operations is only implicit in the bill, it is clearly the intent of its authors and its supporters in

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*See, for instance, Implications of Divestiture: A Treasury Department staff study - June 1976, Chapter II and Part V.

the Senate Judiciary Committee. In fact, one of their principal arguments for the bill is that its international impact will weaken the pricing power of OPEC and thus, exert a downward pressure on world oil prices. The Judiciary Committee's Majority Staff Report on S.2387 makes this quite clear, as the following paragraphs from the Report's overview section show:*

> "The international oil market is controlled by the Organization of Petroleum Exporting Countries (OPEC). Contrary to what they would have us believe, the international companies are not playing an adversary role toward this cartel. In many important respects, their interests are closer to those of the cartel than to those of the consuming nations. Willingly or unwillingly, the companies are in the position of providing services for the cartel which it could not perform as well for itself.
>
> "The OPEC cartel has always had a fundamental problem. To succeed, a cartel must divide markets and limit production. For economic and cultural reasons, the member countries, while able to agree on price increases, have been unable to make formal agreements to allocate the limits on production. In short, competitive tensions already exist within the cartel.
>
> "But this has not substantially weakened the cartel price, because the international companies, not the member countries, have served as the distributors or rationers for the cartel. ...For the major oil companies, it means a secure supply of crude oil at discount prices to keep their refineries running at peak efficiency and their product pipelines full. It also means that they determine what competitors get crude oil, when and under what conditions. For OPEC countries, the deal means not only that they have a "home for their crude" but that the price will remain propped up by production limits dictated by their marketers.
>
> ....It also should be remembered that the international companies have minimal interest in low prices. Each OPEC price increase also boosts the value of their oil and other energy reserves outside of OPEC.
>
> "In summary, it is the contention of the majority of the Committee that:
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> ....Vertical integration permits the major international petroleum companies to keep stable relations with the OPEC cartel, forestalling agressive shopping by major refiners for the cheapest crude price. Such aggressive shopping could put a strain on the cartel price."

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* Petroleum Industry Competition Act of 1976, Report of the Committee on the Judiciary, United States Senate, pages 4 and 5 - 1976.

A somewhat similar position was expressed in a staff memorandum dated March 30, 1976 on the subject of companies affected by proposed divestiture legislation by Walter S. Measday, chief economist of the Senate Anti-Trust and Monopoly Subcommittee. Mr. Measday states that:

> "First, the international companies have crude reserves outside of OPEC, especially in the United States, whose value increases as the OPEC price goes up.
>
> "Second, the international companies have very strong interests in preserving their special relationship with the OPEC countries. While the companies current profit of 22¢ a barrel is low compared to their historic profit, it is quite high by any other standard and is nothing they would want to lose...
>
> "It is simply not worthwile for the major companies to jeopardize this by being too aggressive as purchasers. In the end, their interests are those of the producers not those of the purchasers.
>
> "The logic of divestiture is not a simplistic notion that small companies bargain harder, rather it is to put at least part of the industry on our side of the bargaining table."

The remainder of this study examines the justification of the "OPEC Argument" for vertical divestiture of the major U.S. oil companies and analyzes its intended as well as unintended consequences.

<u>OPEC and the Oil Companies in the 1960's</u>

At the heart of the"OPEC Argument"for divestiture is the fundamental relationship between that organization and the multinational oil companies which operate in its territories and offtake its oil. A starting point for our inquiry is therefore a brief historic account of how and why OPEC came into existence and what its and the Major companies' interaction was from its inception to the great price explosion of late 1973 and early 1974.

OPEC was founded in September 1960 by Venezuela, Iran, Iraq, Saudi Arabia and Kuwait as a direct consequence of a series of price declines posted by oil companies in Venezuela and the Middle East. The declines reflected the fact that a temporary oil shortag brought on in late 1956 and the first half of 1957 by the closure o the Suez Canal had turned into a surplus after the reopening of the Canal. Thus, the price increases posted during the shortage were followed by two reductions, one in February 1959 and the other in August 1960, which together more than offset the increases. Both reductions were strongly opposed by the major oil exporting countri and directly led to the formation of OPEC in September 1960. In fa one of the earliest OPEC policy recommendations was that member cou tries should forthwith enter into negotiations with oil companies "with a view to ensuring that oil produced in Member Countries sha be paid for on the basis of posted prices not lower than those whi applied prior to August 1960."*

OPEC's interest in posted price restoration stems from the fa that these prices were the basis for the determination of tax and royalty payments. OPEC's perceived interest lay therefore in the maximization of these prices, since they determined government uni income. The companies,on the other hand, looked on posted prices reflecting prevailing market values. When market conditions forced them to lower prices they expected the host governments to share in the decline in the form of lower tax and royalty receipts

*Abdul Amir Kubbah, <u>OPEC Past And Present</u>, Petro-Economic Research Center, Vienna, 1974. p. 39.

Thus, the relationship between the international oil companies and OPEC began as an adversary argument over the distribution of the margin between real crude oil costs and real crude oil prices. Broadly speaking, this relationship has continued until OPEC abrogated all form of price negotiations in October 1973.

Prior to 1971 the contact between the two entities was somewhat comparable to that typically existing between a labor union and a company management. The union's periodic requests for wage increases are opposed by management as unwarranted under existing market conditions but eventually a compromise is reached somewhere between the union's original demand and the prevailing wage level. It is important to understand the nature of this relationship, since the "OPEC Argument" for divestiture rests to a large extent on the assumption of a commonality of interests between OPEC and the international oil companies.

The oil companies for a long period ignored OPEC's request for higher posted prices. However, they refrained from any further reduction in posted prices after August 1960, even though market conditions would have warranted it. These conditions were now met by discounts off the posted prices, borne entirely by the companies, since tax and royalty calculations continued to be based on posted prices. In the words of OPEC's then Secretary General, Nadim Pachachi of Iraq, the organization had succeeded in "effectively freezing that managerial prerogative of unilateral and arbitrary adjustment of crude oil prices."*

In subsequent moves OPEC requested that royalty payments be no

*Ibid., p. 38.

longer credited against the 50% income tax prevalent in most member countries. In the view of OPEC's acting chief of information, "the companies produced elaborate counter arguments (to the royalty issue). They used all kinds of dilatory tactics and procrastination to gain time."* Eventually they accepted OPEC's demand in return for specified temporary allowances off posted prices for tax purposes. The net result was a relatively modest increase in government revenues.

Since this increase was made in the face of declining market prices (*i.e.*, growing discounts off posted prices), the net effect was that the increase in OPEC's per barrel revenue required an approximately corresponding decrease in oil company profit margins. While exact figures of these divergent trends are not available, the following table shows that for Saudi Arabian light crude oil the trend of the producing companies' acquisition cost (production cost plus taxes and royalties) and company profit margins moved in opposite directions between 1960 and 1970. Since production cost remained unchanged at approximately 10¢/bbl during this period, the increase in acquisition cost reflected entirely higher payments to government. This is reflecte more clearly in Appendix Table I which shows the trend of increasing payments to OPEC members for the period 1960-70.

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*Ibid., p. 43

Table I

ARABIAN LIGHT (34^{o} API) CRUDE OIL PRICES,
ACQUISITION COSTS AND MARGINS, 1958-1976 (Annual Averages)
$/bbl

I Period 1958-1970

	POSTED	ESTIMATED MARKET PRICE	ACQUISITION COST*	ESTIMATED NOTIONAL MARGIN
1958	2.08	1.83	1.12	0.71
1959	2.08	1.70	1.12	0.58
1960	1.90	1.53	0.98	0.55
1961	1.80	1.45	0.98	0.47
1962	1.80	1.42	0.98	0.44
1963	1.80	1.40	0.98	0.42
1964	1.80	1.33	0.98	0.35
1965	1.80	1.33	1.01	0.32
1966	1.80	1.33	1.01	0.32
1967	1.80	1.33	1.01	0.32
1968	1.80	1.30	1.02	0.28
1969	1.80	1.28	1.02	0.26
1970	1.80	1.26	1.04	0.22

II Period 1971-1976

	POSTED	ESTIMATED MARKET PRICE	ACQUISITION COST*	ESTIMATED NOTIONAL MARGIN
1971	2.23	1.66	1.41	0.25
1972	2.48	1.84	1.56	0.28
1973	3.29	2.91	2.21**	0.70****
1974	11.58	10.77***	9.61**	1.16****
1975	11.53	10.72***	10.50**	0.22
1976	12.38	11.51***	11.28**	0.23

*Consists of government revenue plus production cost.
**Includes phase-in, bridging, and buyback/participation cost estimates, in applicable periods.
***93% of average posting. These estimates can be considered the price at which prepared to enter into new third party sales.
****For comments on these margins see pages 15-18.

In retrospect one can say that until the spring of 1970 the negotiating powers of the two sides seemed approximately balanced. The oil companies accepted some of OPEC's demands, rejected others and reached compromises on most. As we have seen, the result was a modest increase in OPEC unit revenues and a more significant decrease in oil company profit margins because the companies not only had to pay more taxes to OPEC but also had to contend with falling market prices. For instance, between 1960 and 1970 the tax paid cost on Saudi Arabian light crude rose from about 98¢ to 104¢ per barrel while the average company margin dropped from 55¢ to 22¢.

The first intimations of an impending change in this situation came in June 1968 when OPEC adopted its "Declaratory Statement of Petroleum Policy in Member Countries." The statement declared that Members must not only exercise permanent sovereignty over their hydr carbon resources but must do so with the aim of securing the maximum benefit for their own countries. This can be done best, according to the Statement, if the countries undertake the resource exploitation directly, as far as possible. If foreign capital is required it mus be under government supervision and returns must not exceed "reasona levels" which are to be determined by the government. All such arra ments, says the statement, must be open to revision as justified by the principle of "changing circumstances". Under the same principle the Statement asks for government participation in the ownership of concessions under existing contracts and the renegotiation of such contracts. Finally, it states that posted or tax reference prices should be determined by the Government and be coordinated with prices in other OPEC member countries.

One recent analysis of OPEC's strategy argued that in its Declaratory Statement

> "OPEC had formulated a grand charter that, if implemented, would transfer from companies to countries full control at the upstream end of operations, leaving the companies in a merely technical, though adequately remunerated, capacity....How soon and how far OPEC would be able to implement its program depended on political and economic circumstances and OPEC's skill in exploiting them."*

It is difficult to see how an organization with these aims and the principal target against which these aims were directed (the oil companies) could be on the same side of the bargaining table, as staff economist Measday of the Senate Antitrust Subcommittee has claimed.

OPEC's Move Toward Unilateralism

The first evidence of a basic change in OPEC's negotiating posture was the Libyan price negotiation of 1970. It was the first time the oil companies actually had to negotiate a posted price level. Up until then they had just set it (although they had not done so in 10 years). Much has been written about the Libyan negotiations. In essence, the companies which had been arguing with the regime of King Idris over a 10¢/barrel increase were faced after the coup which brought Colonel Qaddafi to power with a demand for a 44¢ increase. Their strong resistance to this demand is a matter of record. It is

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*D.A. Rustow and J.F. Mugno, OPEC: Success and Prospects, New York University Press, New York, 1976, pp. 8-9.

acknowledged in the hearings on the multinational oil corporations held by Senator Church in 1974* and also in a recent book on Libyan oil written by a Libyan government official from the Libyan-OPEC point of view.**

The companies eventually had to accept a 30¢/barrel increase in the posted price with a 2¢ annual escalation for five years and an immediate rise in the tax rate from 50% to 55%. In retrospect this may seem like a modest increase. But at the time it was an unheard of jump, raising the cost of Libyan crude oil by 24% and netting the government more than $300 million in additional income in the first year.

The pressure put on the companies by Colonel Qaddafi's regime consisted both of production cutbacks sufficiently large to create a worldwide tanker shortage*** and explicit threats of total shutdown and/or nationalization. Eventually, the companies were given a one-week ultimatum to agree to the higher price or have their production halted.

There is clear evidence that the companies sought support from the U.S. State Department in resisting Libya's demands and that such support was denied.**** In fact, the State Department informed the

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*Multinational Oil Corporations and U.S. Foreign Policy, A Report by the Senate Subcommittee on Multinational Corporations, January 2, 1975, pp. 121-125.

**Shukri Mohammed Ghanen, The Pricing of Libyan Crude Oil, Adams Publishing House, Tripoli, 1975.

***The reduction in Libyan output had to be made up by shipments from the Persian Gulf which is located much further from U.S. and European markets than Libya, and required therefore more tankers. The tanker shortage was greatly exacerbated by Syria's "non-political" 8-month delay in repairing a break in the Trans-Arabian Pipeline in May 1970.

****Forbes, "Don't Blame the Oil Companies: Blame the State Department," April 15, 1971, p. 69. See also Multinational Oil Corporations and U.S. Foreign Policy, op. cit., passim.

oil companies at the time that it considered Colonel Qaddafi's original demand for a 44¢ increase reasonable, both on economic and political grounds. Even later when the snowball effect of the Libyan price increase became visible and the State Department became concerned, its policy did not change. As the Department's then chief oil strategist, Mr. James Akins, explained later, "The question was: How much pressure could we put on them (OPEC)? We just weren't prepared to back up our position. We couldn't have taken a confrontation."* Perhaps the evaluation was correct. But,in hindsight, the consequences of this preoccupation with short-term supply availability and the downgrading of price and other economic considerations were staggering. The Libyan price and tax increase led to requests for a similar price increase at the Persian Gulf which was granted at Teheran in February 1971. This, in turn, led to another price increase in Libya. After that came a series of further price increases to offset declines in the exchange rate of the dollar. At the same time, demands were made for government participation in the companies' crude oil production. This was equivalent to a tax increase since the companies had to buy back part of the "participation" crude from the government at a higher cost than their own ("equity") crude oil.

Finally, on October 9, 1973 the oil companies and OPEC met for the last time to discuss the issue of posted prices. OPEC had previously announced that the five-year price agreement reached at Teheran in February 1971 had become obsolete for a variety of reasons and wanted

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*<u>Forbes</u>, <u>op</u> <u>cit</u>., p. 70.

a substantial upward revision of posted prices. The oil companies initially offered an 8% increase, then a 15% increase. OPEC's spokesman, Saudi Arabian oil minister Yamani, countered with a request for a 100% increase. In the words of the report of Senator Church's subcommittee (p. 149): "The OPEC Group threatened unilateral action in terms so unmistakably firm that the industry team concluded that it would be fruitless to make another offer..."

The companies therefore asked for a two-week adjournment of the meeting to consult with their headquarters and appropriate government agencies. Six days later, meeting without the companies in Kuwait in the midst of the Arab-Israeli war, OPEC unilaterally announced a 70% increase in prices. On December 22, OPEC met again without the companies, this time in Teheran, and announced a second unilateral price increase of 130%. Since then more increases in the cost of OPEC crude have taken place both in the form of higher OPEC postings and extensions and increases of government participation in crude oil production and nationalization of concessions, with the former concessionaires continuing to have access to part of the oil but at a higher cost than before.

Conflict or Commonality of Interests

The point of this rather sketchy account of the history of oil prices since the inception of OPEC is that throughout this period OPEC and the oil companies sat at opposite sides of the bargaining table and, as long as there were negotiations, the two sides fought hard over every price change because each perceived its interest to be different from the other. For much of this period -- until mid-1970 -- market prices were determined by market conditions over which neither side had sufficient control to manipulate them. Thus, the two antagonists played a zero-sum game in which the betterment of one could only come at the expense of the other. OPEC was the winner in this game but not by very much. From 1970 on both sides became increasingly aware of a new factor which eventually overshadowed everything else: that a sovereign government and a private business firm are not equal bargaining partners, particularly if the government has the full backing of other governments with similar interests. When the OPEC nations started to put this discovery into practice the oil companies tried to get support from their home country governments to balance the scales. But for whatever reasons -- and they may well have been sound ones* -- this support was specifically denied them from Tripoli in 1970 to Teheran in 1971 to Vienna in October 1973. Neither did the companies receive more than token support from home on the issue of nationalization between 1971 and 1973 when Algeria, Libya and Iraq took over several U.S. and U.K. oil companies, largely for political reasons, unaccompanied by acceptable compensation offers.

The message of all this became increasingly clear to OPEC: the oil companies (particularly the U.S. ones) were apparently not policy instruments of their governments but just commercial enterprises

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*One reason may be that U.S. domestic excess crude oil producing capacity which had protected the U.S. against most conceivable types of import interruptions since the early 1950's had disappeared by the end of 1971.

fending for themselves and, thus, unequal matches for OPEC's combined strength. It was when OPEC understood the full extent of this new reality that its members stopped negotiating oil prices and started to dictate them. The first and most drastic actions following this realization were the price increases of October and December 1973. There is no question that their magnitude was affected by the concurrent events of the Arab-Israeli war and the resulting politically motivated reduction in Arab oil exports which caused a global fear of shortages. However, the maintenance and further increases of these prices when the feared shortage gave way to a record surplus of available OPEC producing capacity from mid-1974 to 1976, as well as the acceleration in the move towards full or partial nationalization of foreign companies on terms dictated by OPEC, are clear evidence that the transfer of power from market forces to a producer-government cartel was a fundamental political change of historical proportions -- part of the "revolution of rising expectations" which our and other western governments have long recognized as an inevitable and legitimate movement in the world of less developed countries.

The integrated structure of the international oil industry did not contribute to the success of that revolution. It would be difficult to argue that a nonintegrated industry consisting of a larger number of smaller and, hence, weaker firms would have been more successful in preventing the transformation of the world's oil structure in the first half of the 1970's than the large international majors with their massive power of worldwide downstream facilities. It would be equally difficult to argue that the Majors did not wish to prevent this transformation in which OPEC nationalized their vast oil reserves without compensation, bought their capital equipment much below its market value and abolished their traditional role in setting production levels and posting prices. What the Majors did was to avoid open resistance to OPEC but roll with the punches in order to maintain for themselves some sort of position in the new order of world oil.

The Companies' Profit Margins

Of course, all this transfer of economic power from the companies to OPEC did not destroy them, nor did OPEC seek to do so -- any more than a successful labor union would seek to destroy the management from which it has just wrested spectacular concessions. In fact, as the table on page 20 shows, at times during the transition period from 1971 to 1974 the major operating companies' notional profit margins* were substantially higher than in earlier periods. This has naturally given rise to assertions that the Majors were beneficiaries of OPEC's pricing policy and therefore must have supported it. However, these assertions should be qualified by the following considerations: From the beginning of 1973 until late summer world crude oil supplies were relatively tight for a number of reasons, such as an exceptional

*The computed difference between their crude cost and indicated third-party sales prices which may differ from the companies' internal transfer prices or from actual prices paid in the market by third parties.

increase in world oil demand, a temporary bottleneck in the expansion of Saudi Arabian producing capacity, and production limits imposed by Kuwait and Libya. As a result, market prices rose and so did the profit margin on these prices. OPEC and its pricing policy had little, if anything, to do with this temporary development. Another point is that it simply took OPEC a while to fine-tune its pricing policy so as to set the Majors' profit margin at the level it intended to. An oil pricing policy which attempts at the same time to maximize producing country revenue and minimize (but not eliminate) producing company revenue requires a certain amount of trial and error. OPEC typically followed a learning curve in its familiarization with the complexities of the interrelations between posted prices, market prices, equity crude costs and buy-back prices. But whenever it thought it saw evidence that the companies' profit had risen, it took action to bring the margin do again. In fact, this was the principal reason for calling the companies to Vienna in October 1973.

It was also the reason for the changes initiated by a group of Persian Gulf producers at a meeting in Abu Dhabi in November 1974 at which posted and buy-back prices were lowered but royalty and tax rates were raised, with the result that market prices offered by OPEC for third-party transactions (the same as buy-back prices) were reduced while costs for the producing major companies at the Persian Gulf rose substantially. This cut the latter's profit margin very sharply, since the companies could obviously not sell or transfer oil at prices above those established by OPEC members for their own third-party sales. The decisions taken at Abu Dhabi were candidly explained by Saudi Arabian oil minister Sheik Ahmed Zaki Yamani in a lecture in Zurich a month later:

> "The primary reason for the convening of the Abu Dhabi meeting was to look into reducing the posted prices as often proposed by Saudi Arabia. Our purpose in wanting to reduce posted prices was to alleviate the hardships of the consumers. Reducing posted prices entails reducing our prices for direct crude sales and forcing the oil companies' sale prices down to equivalent levels.
>
> "Since the oil companies were realizing excessive profits that could not be justified, it was also decided to raise income tax and royalty rates to 85 percent and 20 percent respectively."*

A table comparing costs, prices and notional profit margins before and after the Abu Dhabi conference in November 1974 is shown on page 20 for Saudi Arabian light (34^{0} API) crude oil (Marker Crude). Comparable figures for 1976 are also shown. It should be pointed out that the notional company margin of $1.32/bbl shown in the first column is merely the mathematical difference between the actual acquisition cost and 93% of the posted price. In real market transactions during the summer of 1974 the prices obtained by the companies in spot and contract sales to third parties were generally significantly less than the theoretical 93%-of-posted price. Thus, in early August an authoritative trade publication reported spot prices for Arabian light crude at $9.60-9.80 and "long-term pricing patterns closer to $10."** In early September the same publication reported spot prices for September delivery at $10/bbl.***

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*Middle East Economic Survey, 20 December 1974, p.2. A similar point was contained in the official communique of the OPEC Minister's Conference of September 12-13, 1974 which also referred to "the excessive margin of profits still being made by the international oil majors on their upstream operations." Petroleum Intelligence Weekly, September 23, 1974, p. 6.

**Petroleum Intelligence Weekly, August 12, 1974, p. 4.

***Petroleum Intelligence Weekly, September 2, 1974, p. 3.

It appears therefore that Sheik Yamani's and OPEC's references to "excessive" profit margins and the actions to reduce them were caused less by the actual margins obtained by the companies in the market than by the fact the established maximum margins enabled the companies to sell below OPEC's own sales price formula (93% of posted price), thus threatening the budding volume of direct sales by OPEC's national oil companies.

	$/bbl		
	9/1/74	11/15/74	10/1/75-12/31/7
Posted Price	11.65	11.25	12.38
Estimated Production Cost	0.10	0.12	0.28
Royalty	1.69 (14.5%)	2.25 (20%)	2.48 (20%
Income for Tax Purposes	9.86	8.88	9.62
Income Tax	5.42 (55%)	7.55 (85%)	8.18 (85%
Total Government Revenue	7.10	9.89	10.66
Tax Paid Cost of Equity Crude	7.21	9.92	10.94
Buy-Back Price	11.05*	10.46	11.51
Published Saudi Price for Direct Sales (93% of posted)	10.83	10.46	11.51
Average Cost to Company**	9.51	10.24	11.28
Computed Notional Company Margin	1.32	0.22	0.23

Source: International Crude Oil and Product Prices, 15 April 1976. Middle East Petroleum and Economic Publications, Beirut, Lebanon, p. 100.

*94.8% of Posted Price
**40% Equity Crude, 60% Buy-Back Crude

Apparently the 22¢ margin determined at the September 1974 meeting was the approximate long-term profit level that OPEC had in mind for the producing companies, for it has maintained it ever since, as is shown in the above calculation. In October 1975, when OPEC raised posted prices for Saudi Arabian light crude by $1.13 to $12.38 and market prices by $1.05 to $11.51, the notional profit margin for Aramco remained more or less unchanged.*** In other major OPEC countries company profit margins, operating fees or discounts off market prices range also between 15¢ and 40¢ per barrel. The only significant exception is

***Considering the fact that production costs had risen to about 28¢/barrel.

Indonesia where the margin is currently in the area of $1.25/bbl.

Thus, however one wishes to characterize the relationship between OPEC and the major oil companies, the facts are that since OPEC's ascension to power world oil prices have risen to an all time high, as have the per barrel earnings of the producing countries, but the profit margins of the companies have been drastically reduced.

This is at variance with the Senate Judiciary Committee's picture of a strong bond of common interest between the two groups.

Nationalization and Access to OPEC Oil

Next, we must examine the question of the companies' access to crude oil under the new OPEC regime. Here we have to differentiate between nominal access and practical access to OPEC crude. Nominally, private oil companies have lost control over most of the OPEC crude oil to which they had exclusive access under the concession or other type of contractual agreements in existence throughout the postwar period until about 1972. In virtually all OPEC member nations crude oil production has either been fully nationalized or the government has taken a "participation" share of at least 51% of the concession crude to sell either directly to any customer it chooses or to sell back to the concessionaire at full market price. Thus, the volume of "equity" crude oil, i.e., the volume companies are deemed to own by virtue of concession or similar types of agreements, has dropped from about 95% of total OPEC production in 1971 to around 30% in mid-1976.*

*This assumes that in both years royalty payments were made in cash rather than in oil. Under the concession agreements governments have a choice to take them in either form.

But while the companies lost much of the nominal equity crude as their concession agreements were altered or abrogated, in many instances they continued to maintain long-term contractual access to OPEC crude at acquisition costs below market prices. Thus, they did not become open market buyers of OPEC crude to the same extent to which they lost their equity crude. However, even if we take these new forms of access into account, the share of OPEC oil reserved for the companies has declined and the outlook is for further declines. The following table shows the changes in the long-term contractual access to OPEC crude of U.S. oil companies in the last five years. The 1971 data reflect mainly traditional concession agreements between companies and host governments while the data for 1976 show the approximate oil volumes currently received by these companies under a variety of long-term contracts with the same governments. The balance of the OPEC oil is disposed of partly by non-U.S. private companies, such as British Petroleum, Royal Dutch Shell, and Compagnie Francaise des Petroles, and partly through direct sales by OPEC state companies.

Table II

ESTIMATED CONTRACTUAL ACCESS OF CURRENT OR FORMER CONCESSIONAIRES TO CRUDE OIL OUTPUT OF THEIR HOST COUNTRIES
(000 b/d)

OPEC MEMBERS	1971 (Annual) TOTAL	FIVE U.S. MAJORS	OTHER U.S.	FOREIGN (INCL. OPEC STATE CO'S)	January-September 1976 TOTAL	FIVE U.S. MAJORS	OTHER U.S.	FOREIGN (INCL. OPEC STATE CO'S)
Saudi Arabia[a]	4,769	4,498	92	179	8,342	7,757	81	504
Iran	4,540	1,451	346	2,743	5,641	1,545	400	3,696
Kuwait[a]	3,197	1,463	91	1,643	1,895	500	79	1,316
Iraq	1,694	402	-	1,292	1,999	-	-	1,999
UAE: Abu Dhabi	934	136	-	798	1,575	69	-	1,506
Dubai[b]	125	12	50	63	311	31	143	137
Sharjah[b]	-	-	-	-	38	-	38	-
Qatar	431	53	-	378	492	18	-	474
Libya	2,761	781	1,560	420	1,879	285	1,016	596
Algeria	786	-	3	783	962	-	-	962
Nigeria	1,531	359	13	1,158	2,034	534	63	1,437
Gabon[b]	115	-	-	115	217	-	-	217
Indonesia	891	782	-	109	1,493	629	268	596
Venezuela	3,549	2,200	354	995	2,274	1,195	120	959
Ecuador[b]	4	-	-	4	180	132	-	48
Total	25,327	12,137	2,509	10,680	29,350	12,695	2,208	14,451
Percent Shares	100.0	47.9	9.9	42.2	100.0	43.3	7.5	49.2

Note: Five U.S. Majors: Exxon, Gulf, Mobil, Standard of California, Texaco. Where applicable, total production has been allocated proportionally to non-government concessionaires.

a) Includes Neutral Zone.
b) Not OPEC members until after 1971.

Source for 1976 data: Petroleum Intelligence Weekly, International Crude Oil and Product Prices (Parra, Ramos & Parra) and PIRINC estimates.
Source for 1971 data: OPEC Annual Statistical Bulletin 1971.

According to the table, the U.S. oil companies' share of the disposal of OPEC oil has declined from 58% to 51% in the last five years. The reason for the decline lies entirely in the growth of state companies whose direct sales to parties other than their current or former concessionaires have risen from 4% of total OPEC production in 1971 to an estimated 24% in the first nine months of 1976. Such sales have been notably successful for Abu Dhabi, Iraq, Iran, Algeria, Kuwait, Qatar and Venezuela. These countries have all demonstrated the ability of governments to move their own crude in the world market.

Thus, Abu Dhabi's National Oil Company (ADNOC) announced in March that it expected to sell this year about 435,000 b/d to companies other than their two foreign operating companies (Abu Dhabi Petroleum Company and Abu Dhabi Marine Areas) or their affiliates. The increase in ADNOC sales both in number of customers and as a share of the country's production is shown below. For 1977 the company seeks to sell 40% of total production through its own outlets.

	1973	1974	1975	1976
% of Total Abu Dhabi Production Sold Directly	2.4%	6.4%	10.6%	30.0%
Number of Buyers	1	5	7	20

Qatar, another Persian Gulf OPEC member, is reportedly disposing of 114,000 b/d, or about 23% of its total production, directly. Its principal direct customers are two U.S. refining companies, Amerada Hess and Charter Oil, and a German refinery, Union Rheinische.

Among OPEC's giants Iran is a particularly interesting case. In 1973 the National Iranian Oil Company (NIOC) and the Iranian Oil Participants Ltd. consortium* made an agreement under which the "stated quantities" of crude oil going to NIOC for direct exports would grow gradually from 200,000 b/d in 1973 to 1.5 million b/d in 1981. The agreement is currently being revised, with indications that NIOC will ask for a larger volume of oil in the future.

NIOC has staged a remarkably successful direct sales push this year, particularly with its heavy crude oils which are more difficult to dispose of than lighter quality crudes. In 1975 NIOC sold 306,000 b/d, or 6% of Iran's total exports, to some 20 customers. NIOC sold about 750,000 b/d to 26 customers in the first half of 1976, and approximately 800,000 b/d in the third quarter. Thus, for 1976 as a whole NIOC's direct sales will undoubtedly exceed the "stated quantity" of 600,000 b/d provided in the 1973 agreement for the year 1976.

Kuwait nationalized its oil industry in December 1975. Prior to the takeover BP and Gulf, the two co-owners of the Kuwait concession, had lifted an annual average of 2.4 million b/d. After nationalization they were permitted 950,000 b/d for five years. Thus, Kuwait is now selling directly about as much oil as Gulf and BP together. Prior to 1974, virtually all of Kuwait's oil was lifted by Gulf and BP.

Iraq, which nationalized its oil industry in stages with the final stage occurring at the end of 1975, is now selling some 2 million b/d

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*The group of international oil companies active in Iran since the formation of the Consortium in 1954.

directly to foreign customers. Five years ago all of its oil was sold by the international oil companies which made up the membership of the Iraq Petroleum Company and the Basrah Petroleum Company.

All of these changes clearly indicate a dramatic increase in the number of national crude oil sellers and a corresponding decline in the shares controlled by the old established sellers, i.e., the international oil companies. Whether this development is desirable for oil importing countries is by no means clear. What is clear is that the dynamic reordering of world oil exports of the last few years is an ongoing process and far from completed.

Saudi Arabia's Special Role

There is one major exception to the development described above: Saudi Arabia. Saudi Arabia has not followed the trend of other OPEC members in assigning an increasing share of crude oil to their national oil companies for direct sales abroad. Instead, it has continued to let the four major U.S. oil companies which own Aramco dispose of well over 90% of total exports. In fact, as Table II shows, if Saudi Arabia is left out, the share of OPEC crude oil controlled by U.S. companies declined much more rapidly - from 49% in 1971 to 34 % in the first nine months of 1976.

The reason that Saudi Arabia has not followed the OPEC trend has been explained by its oil minister and other officials as a matter of commercial preference. Saudi Arabia is unwilling at this stage to create the large bureaucratic apparatus required to dispose directly of the very large volumes of crude oil it produces. For the time being it prefers, therefore, to let Aramco with its secure, long-term, high volume worldwide outlets continue to dispose of most of the country's crude oil.

It is this specific relationship between Aramco and Saudi Arabia which is behind many of the general charges that U.S. oil companies and OPEC are not true economic antagonists but actually provide services for each other and share a commonality of economic interests which does not coincide with the interests of the consuming countries.

To assess these charges we must ask the question whether Saudi Arabia's continuing relationship with Aramco is a reflection of the country's self-perceived weakness or strength. Could a switch to a substantial volume of direct sales by Saudi Arabia's state oil company threaten the existing and projected level of oil earnings -- per barrel or total? Or is Saudi Arabia sufficiently confident of its ability to impose price, production and export conditions unilaterally on Aramco to treat the company as a technical executor of its sovereign will rather than a negotiating partner who can offer and demand concessions?

To a large extent the answer is given by Saudi Arabia's unique role in OPEC and, indeed, in world oil supplies. Here are some of the facts which underlie this role:

(1) Saudi Arabia holds the largest oil reserves of any country in the world. Its current official proved reserves of 113 billion barrels* are 80% higher than those of the next largest country (Iran)

* Including Saudi Arabia's share of the Neutral Zone.

and equal to nearly 30% of the thirteen OPEC members' total proved reserves. In addition, Saudi Arabia has some 70 billion barrels of probable reserves which are almost as certain as its proved reserves.

(2) At its current maximum allowable annual production level of 8.5 million barrels daily Saudi Arabia can probably continue to produce for about 60 years, even if it does not find another barrel of oil which is extremely unlikely (in 1975 alone it added 4 billion barrels to its proved reserves).

(3) Saudi Arabia's current productive capacity of about 12 million b/d is nearly twice that of Iran, which has OPEC's second largest productive capacity, and accounts for 31% of OPEC's total oil producing and spare capacity.

(4) Financially, Saudi Arabia will account this year for 53% of OPEC's total Current Account surplus of $46 billion according to a recent U.S. Treasury study. By 1980 it is expected to account for 75-90% of OPEC's surplus.

(5) At current oil prices Saudi Arabia can reduce its production by about 5.5 million b/d, according to its oil minister Sheik Ahmed Zaki Yamani,* without any significant negative effect on its internal economy. Independent studies have confirmed this estimate.

The clear implication of the facts enumerated above is that Saudi Arabia has the power and the will to dictate oil policy rather than negotiate it. Its strength comes from the unique combination

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*Supplement to Middle East Economic Survey, 25 October 1974. A panel discussion on the World Energy Situation, Washington, D.C., 4 October 1974.

of its immense oil reserves, a small population and a rather limited internal economic potential outside the oil sector. As a result, Saudi Arabia can at will increase its production sufficiently to create a major oil surplus which would threaten prevailing price levels, or it can curtail its output sufficiently to create a global supply tightness with consequent upward pressure on prices.

Thus, the question whether Aramco's and Saudi Arabia's true economic interests coincide or conflict has really become moot. Aramco is permitted to stay on for the time being (even though it will shortly be fully nationalized) because it has demonstrated a high degree of technical and commercial competence which makes it useful but not essential to Saudi Arabia's oil policy. This is not to deny that Aramco and its owners derive substantial benefits from having preferential access to the world's largest crude oil source. But if they were denied this access the loss would be almost entirely theirs and not Saudi Arabia's, whose price structure would be unaffected, since it is not based on Aramco's support or acquiescence but on the country's unique position as a petroleum producer.

Allocating OPEC Production

The next question we must examine in our analysis of the relationship between OPEC and the international oil companies is what makes OPEC's price determination stick. According to the Senate Judiciary Committee's Report cited earlier, "To succeed, a cartel must divide markets and limit production." OPEC has been unable to do this by itself, says the Report, but this has not weakened the cartel price "because the international oil companies, not the member countries, have served as the distributors or rationers for the cartel."

The last sentence of the above statement makes the error of equating rationing with distributing. The oil companies are of course the *de facto* distributors of a large (but shrinking) share of OPEC oil, just as any commercial buyer is in effect a distributor of his supplier's merchandise. Consequently, they affect the production levels of OPEC members just as any supplier's output is determined by the volume of merchandise purchased by his customers.

But that is a far cry from being "rationers for the cartel." To play such a role the oil companies would have to operate under some sort of master plan or grand scheme designed to maintain OPEC's unity and, hence, its price solidarity by allocating production with the aim of minimizing competitive rivalry among its members. The Senate Committee Report does not suggest the existence of such a master plan or scheme and no other serious study has offered any evidence of it. But, as pointed out, unless the charge of production allocation and limitation by the companies implies such a purpose, it is meaningless. It becomes therefore important to test this charge against the available evidence, which the Senate Committee report has failed to do.

To start, we must ask ourselves what production allocation scheme would benefit OPEC most, if its purpose is to contain internecine competition. Obviously, such a scheme would require some form of equitable distribution of increases or decreases in the total demand for OPEC oil from an accepted base period. There are several criteria by which this can be accomplished:

Changes in demand in either direction could be equally apportioned, as far as possible, among all members; demand changes could be apportioned on the basis of members' relative needs to maximize oil revenues because of population and import requirements; the allocation could be made on the basis of members' relative spare productive capacity; or it could be related to reserve/production ratios of members. Probably one could think of a number of other criteria.

The crucial question is, does an examination of historic production changes in the various OPEC countries reveal any overall pattern that could reasonably be interpreted as a functioning system designed to maintain OPEC unity? The following table shows quarterly changes in the production of the nine largest OPEC members as well as quarterly changes for total OPEC production. The period is from the end of the Arab oil embargo in March 1974 to September 1976, the latest data available.

Table III

OPEC PRODUCTION - QUARTERLY PERCENTAGE CHANGES
2ND QUARTER 1974 - 3RD QUARTER 1976

From: To:	2nd Q 74 3rd Q 74	3rd Q 74 4th Q 74	4th Q 74 1st Q 75	1st Q 75 2nd Q 75	2nd Q 75 3rd Q 75	3rd Q 75 4th Q 75	4th Q 75 1st Q 76	1st Q 76 2nd Q 76	2nd Q 76 3rd Q 76
Saudi Arabia*	- 2.8	0.5	-18.4	- 7.4	19.9	-13.4	17.6	6.4	2.9
Kuwait*	-25.7	6.5	- 5.0	- 4.8	7.2	-19.1	3.1	- 2.9	13.2
Iran	- 3.0	- 1.2	- 4.0	- 7.4	8.7	-14.4	7.8	9.4	3.8
Iraq	- 0.3	15.8	- 0.3	13.2	5.8	- 8.5	- 9.9	-24.4	57.6
Abu Dhabi	- 6.0	-20.6	-23.0	61.0	11.5	- 5.9	0.3	- 0.6	4.2
Libya	-22.3	-25.4	- 4.1	32.0	45.4	- 8.6	- 1.5	14.0	3.2
Nigeria	- 1.7	- 2.5	-17.0	-12.9	10.8	10.0	0.3	6.6	- 3.3
Indonesia	- 6.4	- 7.5	- 0.8	- 3.2	11.3	2.8	5.1	2.4	- 0.5
Venezuela	- 4.7	- 0.9	- 7.5	- 6.7	- 5.4	-12.6	- 0.5	18.4	2.0
Total OPEC**	- 6.4	- 1.8	-10.1	- 0.9	11.1	- 8.8	4.9	4.3	5.1

Source: Appendix Table II

*Excluding Neutral Zone
**Includes also Neutral Zone, Qatar, other U.A.E., Algeria, Gabon and Ecuador.

Clearly, the table reveals no discernable overall pattern of production changes that would fit the criteria of being OPEC-beneficial. The quarterly swings shown are much too strong, too uneven and too inconsistent to be considered either beneficial or part of a grand design. Thus, Saudi Arabia, the richest OPEC member, most able to absorb production declines and least in need of additional oil earnings, moves in only four of the ten quarters down more or up less than OPEC as a whole. Iran, which has an urgent need to maximize oil revenues, does better than OPEC production as a whole in five quarters and less well in the four others. Abu Dhabi shows a decline of 23% in one quarter followed by a 61% increase in the next. Libya shows similarly large erratic movements in both directions. So does Iraq. No efficient or effective allocator would permit such random distribution of production changes among members nor such wide fluctuations, certainly not if he had the interests of the allocated at heart.

Determinants of Price and Output levels

What are the real reasons for these fluctuations in production among OPEC members? Quite simply, market factors. Even under OPEC cartel prices these factors still affect the relative value of crude oils. At its price setting meetings OPEC only announces an official price for its so-called marker crude -- Saudi Arabian light crude of 34^{0} API gravity,f.o.b. Ras Tanura loading port. All other crude oil prices are then set by individual members based on their perceived differential value of each crude oil from the marker crude. These differentials, which are often substantial, reflect the fact that crude oil is not a fungible commodity but consists of many different types which have different markets and different refiner customers. The table below which shows the current selling and posted prices for some of the world's more important types of crude oils illustrates these variations in market values. As can be seen, the range runs from a low of \$11.04/bbl for heavy Arab crude oil to \$13.19 for the lightest Nigerian crude oil.

Table IV

BASIC SALES PRICES AND POSTED PRICES OF SELECTED OPEC CRUDES, MID-1976
\$/bbl

CRUDE AND GRAVITY	SALES PRICE	POSTED PRICE
MIDDLE EAST:		
Arab Light-34	11.51	12.38
Arab Medium-31	11.28	12.13
Arab Heavy-27	11.04	11.87
Iran Light-34	11.62	12.50
Iran Heavy-31	11.33	12.18
Kuwait-31	11.23	...
Abu Dhabi:		
Murban-39	11.91	12.82
Qatar Marine-36	11.66	12.54
Iraq Kirkuk-36	11.65-.70	...
AFRICA:		
Algeria:		
Zarzaitine-41	13.00-.05	...
Nigeria:		
Brass River-43	13.19	13.91
Libya Es Sider-37	12.40	16.26
Libya Brega-40	12.62	16.35
FAR EAST:		
Indonesia:		
Sumatra Light-35	12.80	...
CARIBBEAN & SOUTH AMERICA:		
Venezuela:		
Tia Juana-26	11.32	...
Oficina-35	12.80	...

Source: Petroleum Intelligence Weekly, Special Supplement, August 2, 1976.

The reasons for the price differentials are many: Different crudes yield different shares of the various products. Heavy crudes generally yield larger portions of fuel oils while light crudes generally yield larger portions of naphtha and gasoline. Thus, the relative values of light and heavy crude oils are based on the relative demand of the various oil products which, in turn, are determined partly seasonally and partly by economic conditions. Similarly, the value of crude oils is affected by its relative sulfur content. Low-sulfur crudes traditionally have had some premium value because they are less corrosive on refining equipment. But, in addition, their value is determined by the crude oil needs of refineries designed to process low-sulfur crude oil (many U.S. refineries) as well as the requirements of markets with governmental regulations restricting the emission of sulfur from fuel oils. Finally, the continuous changes in world tanker rates have different effects on different producing countries reflecting variations in hauling distances to principal markets.

OPEC officials are fully aware of the complexities and difficulties of adjusting crude oil prices to the marker crude price in such a way as to reflect the true market value differentials. They also know that these differentials are fluid because they are based on the dynamics of oil products markets in consuming countries and on world tanker market conditions over neither of which OPEC exercises control. OPEC's recognition of these facts of life of world petroleum economics was reflected in a decision taken at its ministerial conference in Bali, Indonesia, last May to adopt a differential value system for crude oil pricing which recognizes inherent limitations in fixed differentials and the need for members to price crudes more flexibly and more in accordance with prevailing market conditions. The proposal, which is still being worked out, represents an official recognition on OPEC's part that market forces cannot be ignored in setting price differentials between OPEC crudes.

The fluctuations in production volumes shown in Table III can largely be explained by the fact that these forces were ignored by OPEC price setters. Since additional volumes of crude were readily available from virtually all OPEC members throughout the period, a company finding that one type of crude had become more expensive relative to another type could, within limits, reduce its offtake of the first and increase that of the second. This is precisely what happened. For instance, if one compares first half 1975 sales with the same period of 1976, one finds that producers of heavy crudes, such as Kuwait and Venezuela, registered actual declines in output, while producers of light crudes -- Libya, Abu Dhabi, Nigeria -- showed increases. The following figures summarize this.

	January - June 1975 (000 b/d)	January - June 1976 (000 b/d)	
Kuwait	1,890	1,624	
Venezuela	2,529	2,200	
	4,419	3,824	-13.5%
Libya	1,149	1.831	
Abu Dhabi	1,191	1,552	
Nigeria	1,715	2,009	
	4,055	5,392	+33.0%

Source: Appendix Table II

These divergent movements reflect the fact that world demand for fuel oils showed no improvement during this period while demand for gasoline and naphtha moved up sharply. Hence, lighter crudes were more in demand than heavier ones and quoted sales prices for the former rose by some 20-25¢/bbl while those of the latter dropped by 5-10¢/bbl since October 1975, the date of OPEC's last general price increase.*

Thus, we must conclude that there is no empirical evidence whatever of any systematic conscious allocation or limitation of OPEC crude production levels by the oil companies. Production declined or rose in each member country in reaction to market forces and to changing price differentials relative to the OPEC-enforced marker crude price.

The evidence also shows that the oil companies were by no means indifferent to those price differentials and, within the limitation imposed by the OPEC marker crude system, adjusted their liftings so as to pay the lowest possible composite price for their crude oil requirements. Given the sharp competition in products markets and the virtual absence of profit margins on foreign downstream operations since the end of the embargo, this concern with OPEC crude price differentials seems entirely plausible from the point of view of the companies' economic self-interest. In other words, there are exploitable price differentials within the OPEC price structure which force companies to shop as aggressively as possible for the lowest

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*Petroleum Intelligence Weekly, Special Supplement, August 2, 1976 cost crude in order to remain competitive.

OPEC's Mode Of Operations

Next, we must ask, how does OPEC manage to function without any allocation of its output either by the companies or by the cartel itself? According to the Senate Subcommittee report, no cartel can maintain itself without effective production allocation. Yet, OPEC is evidently maintaining itself with spectacular success. This suggests that the OPEC cartel and the type of cartel the Senate report is talking about are very different entities.

Historically, cartels as well as commodity agreements have usually operated by allocating market shares and putting constraints on supplies. This was an indirect approach to price control, necessitated by political or commercial inability to exercise effective direct control over prices. But the ultimate aim was always profit maximization, not output constraint.

OPEC, being an organization of sovereign governments with all the attendant powers, does not have to take this indirect approach. It simply established an official "marker" price for its most widely sold type of crude oil, adjusted all other crudes to the marker price, taking account of quality and transportation differentials, enforced the established price levels through the power of government and offered to sell all the oil offtakers wanted at those levels, up to each government's physical or otherwise established production ceiling.*

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* For a more theoretical analysis of this process, leading to the same conclusion, see Robert Mabro, "OPEC After the Revolution." Journal of International Studies, London School of Economics, Winter 1975-76.

OPEC did originally experiment with production control and prorationing schemes.* However, when these schemes revealed potential internal dissensions which threatened the organization they were abandoned and OPEC concentrated instead on direct price enforcement which it soon found to be far more effective and less divisive than production control.

A comment may be in order at this point about self-imposed production ceilings by individual OPEC members. Most members have established such ceilings. These may reflect conservation policies, reservoir engineering considerations, limitations to the ability to absorb additional oil earnings or a variety of political considerations. A case in point is Saudi Arabia whose current annual production ceiling of 8.5 million b/d is about 3 million b/d below its physical producing capacity. In the first nine months of 1973 demand for OPEC oil at times bumped against the imposed ceilings of some members (Kuwait, Libya), contributing to supply tightness and price increases. In the 3 years since the embargo, production ceilings have had little impact on supply availability because actual production rarely reached them. However, with the current recovery in demand, they may once again exert upward pressure on prices. Yet, there is very little the oil companies or the importing countries (short of diplomatic persuasion) can do about it. As pointed out, these ceilings represent the considered

*F.R. Parra, The Development of Petroleum Resources under the Concession System, OPEC, Vienna, 1964, p. 35; OPEC resolutions No. I-1 (1960), No. II-13 (1961), No. VII-50 (1965).

its Chairman of the Board as saying* "Crude oil prices outside OPEC have also increased, though not as much as those in OPEC countries. Oil companies, including Exxon, have obtained some benefits from these increases." Of course, the increased prices were also responsible for the sharp rise in U.S. drilling activities in the last 3 years and probably made some marginal North Sea discoveries commercially producible.

However, the benefits to the companies have been greatly muted by governmental action in all four countries. Each in its own way has adopted a policy of deliberately uncoupling earnings on domestic crude oil operations from OPEC prices and thus greatly mitigating the potential for windfall gains. Let us first look at the policy adopted by the U.S. which accounts for most of the privately produced non-OPEC crude oil. About 56% of U.S. crude production is currently classified as "old" oil, 30% as "new" oil and 14% as stripper well oil. All but the last category of production is under federal price control and, hence, is not affected by changes in OPEC prices.

The largest category, "old" oil, has not benefited at all from the multi-hundred percent OPEC price increase of 1973/74, since its current price of $5.16/bbl is only 32% above the level of May 1973**, or slightly less than the increase in the U.S. wholesale price index during the same period. Congress has also removed the percentage depletion allowance on most U.S. oil production in January 1975. This action, which

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* The Oil Daily, June 23, 1976, p. 5.

**May 1973 is the base period for price control of "old" oil. The price was then $3.90/bbl.

was largely a response to the OPEC-induced average domestic oil price increase, has reduced the real profit margin on "old" oil below the May 1973 level.

The price of the 30% of U.S. production, classified as "new" oil, did initially rise nearly in line with OPEC prices which is more than it would have risen otherwise. However, in December 1975 Congress passed the Energy Policy and Conservation Act under which "new" oil prices were rolled back to about $2 per barrel below the landed cost of OPEC oil and became subject to direct government control until April 1979.

Oil produced from stripper wells (less than 10 b/d) was freed from price control in August 1976 and moves now approximately in line with OPEC oil. However, most stripper wells are in the hands of independent producers who would not be affected by divestiture.

Thus, between December 1975 and April 1979, all U.S. oil prices, except stripper well output, will remain unaffected by OPEC price movements so that any OPEC price increase will have almost no beneficial fall-out on U.S. domestic prices.

What happens after April 1979 is speculative at this point. The intent of Congress appears to be to put price controls on a stand-by status at that time which means they would still loom over domestic prices. It is likely that Congressional policy towards lifting price controls will be strongly influenced by the then existing differential between "new" domestic oil and world market prices. The larger the spread between them the more likely it is that Congress will continue some form of price control on "new" oil. This possibility was clearly recognized by FEA Administrator Frank G. Zarb at the time the Energy Policy and Conservation Act was signed.* Hence, a significant increase

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*FEA Memorandum for the President; from Frank G. Zarb; Subject H.R.7014/S.622: The Energy Policy and Conservation Act. Tab E and Tab H.

in OPEC prices over the next three years may actually be undersirable for U.S. producers while no increase or a modest one may help them achieve their objective of ending price controls.

Regarding "old" oil, given its very large differential with world prices, it is likely that it will either be subject to further price control after the present law expires or to a windfall profit tax. Both actions would prevent producers of "old" oil from reaping the benefit of OPEC prices in the foreseeable future.

Another consideration in determining how an integrated U.S. oil company would be affected by an OPEC price increase is its domestic self-sufficiency ratio, i.e., the relationship between its domestic crude oil requirements and its domestic crude oil production. As pointed out, until April 1979 this consideration is academic since nearly all domestic crude oil production is price-controlled and allocated equally among all refiners. If and when the price controls are lifted an increase in OPEC prices would mean higher profits on a company's own domestic crude oil production and higher costs for the crude oil it refines. The net impact on profit or loss depends on the company's self-sufficiency ratio as well as its ability to pass the increase through to products prices under prevailing market conditions.

Table V

DOMESTIC CRUDE OIL PRODUCTION, REFINERY THROUGHPUT AND REFINED PRODUCT SALES OF 18 INTEGRATED COMPANIES:* 1975
(000 b/d)

	(1) Net Crude & NGL Production	(2) Refinery Throughput	(1)/(2) Self-Sufficiency Ratio %	Refined Product Sales
Exxon	846.0	1,182.0	71.6	1,561.0
Texaco	759.0	957.0	79.3	1,318.0
Shell	555.0	977.0	56.8	987.0
Standard Oil (Indiana)	534.0	975.0	54.8	1,004.0
Gulf (a)	425.5	749.6	56.8	805.7
Mobil	342.0	752.0	45.5	822.0
Standard Oil of California	383.4	928.0	41.3	1,029.0
Atlantic Richfield	370.3	653.5	56.7	660.4
Getty (b)	288.4	253.7	113.7	279.9
Union	254.4	456.5	55.7	434.9
Sun	257.5	502.0	51.3	552.1
Phillips	244.3	501.0	48.8	555.0
Continental	206.0	324.0	63.6	379.0
Cities Service	200.9	255.4	78.7	361.7
Marathon	174.9	286.1	61.1	307.2
BP-Sohio	27.6	364.4	7.6	351.1
Amerada Hess (c)	98.5	519.0	19.0	523.0
Ashland	21.6	330.9	6.5	455.3

*According to the Senate Judiciary Committee Majority Report on S.2387 (p. 17), these 18 companies meet one or more of the criteria for divestiture.

Source: National Petroleum News, Factbook Issue, Mid-May 1976.

(a) Gross
(b) Source: Annual Report, includes Skelly.
(c) Includes Virgin Islands

In the U.K. and Norway where the "government take" (royalties and taxes) on North Sea crude production averages 69% and 75% respectively of the companies' net pre-tax revenue, an increase in prices due to a rise in the cost of OPEC oil would of course primarily benefit the two governments. Both reacted to the OPEC price increases of 1973/74 by imposing special petroleum taxes whose purpose is to transfer the bulk of the companies' benefits from these increases to the state treasuries. Assuming no additional taxes or other forms of profit constraints in response to future OPEC price increases, the companies would derive some benefit from such increases.

But the benefit would be the effect and not the cause of OPEC's pricing policy which, as we have seen, has been unilaterally determined by OPEC and its individual members without negotiation or consultation with private oil companies since at least October 1973. This has made the oil companies' position on OPEC prices irrelevant because they lack the power to influence them. It will be recalled that when the companies still did engage in price negotiations with OPEC they invariably argued for lower prices.

International Consequences of Divestiture

The international effect of vertical divestiture would be to prohibit U.S. oil producers from owning foreign refineries and U.S. oil refiners from owning foreign production. The volume of oil required by the divested refineries would not be affected, since they would presumably continue to operate (albeit under a different ownership). The supply of OPEC oil sold to the divested refineries would also remain the same, since the divestiture would of course not bring forth any new oil supplies. Inasmuch as refineries require a steady flow of oil, the divested plants would probably sign long-term contracts with their suppliers which would probably be either the divested producer segments of former integrated companies or OPEC state oil companies. It is not at all clear why such an arrangement should lead to lower prices, since it does not strengthen the power of the refiners nor weaken that of their crude suppliers.

For as long as OPEC maintains reasonably effective price control over its oil production and as long as production outside OPEC is substantially insufficient to meet world demand, no reshuffling of existing buyer-seller relations is likely to undermine OPEC's commanding position in setting world prices.

However, divestiture could create a number of international conflicts and complications for U.S. oil companies operating abroad. There is strong evidence that some foreign governments in producing and consuming countries may not favor the vertical divestiture of foreign oil companies operating within their borders. Furthermore, some countries may simply object to any changes in local oil company operations brought about by foreign, and especially U.S., legislation.

Suppose the Saudi Arabian government does not wish to see a corporate separation of Aramco's producing facilities from its Ras Tanura refinery or a separation of Getty's production and refining facilities in the Neutral Zone? What does the affected company do? Violate or circumvent U.S. law? Incur the disapproval and consequent sanction of the host government, including possible expulsion? Or try to remove itself from U.S. jurisdiction which would not be in the national interest and certainly not the intent of the proposed legislation?

These are the kinds of conflicts U.S. companies could find themselves involved in if S.2387 or some such legislation were to become law.

Similar possibilities for conflict exist in the consuming countries. It is not clear just how the governments of these countries might respond to a requirement from abroad that some companies operating in their territory be de-integrated, particularly since some of these governments do not perceive the ramifications of divestiture in the same way as might the United States. In fact, in some importing countries foreign oil companies were welcomed precisely because they were integrated which meant they provide access to overseas crude oil. This emphasis on integration is continuing. In the U.K. for instance, the development of North Sea oil has clearly been conceived of largely as an integrated operation with most of the producers expecting and expected to process the crude in their own refineries. Elsewhere, too, the interest in integration is growing, apparently to increase efficiency and improve negotiating power in dealing with OPEC suppliers -- precisely the reasons advanced here in favor of divestiture. In Japan, the Ministry of International Trade and Industry is reportedly encouraging the merger of 17 or 18 firms into two or three integrated private companies, while in France two state companies, Aquitaine, a refiner-marketer, and ERAP, an integrated company, were recently merged into a large new integrated company.*

Thus, an importing country which sees integration as an economically appropriate form might actively oppose divestiture. This opposition might take the form of diplomatic representations, retaliatory economic sanctions or, in the extreme, nationalization of assets. The opposition could be expected particularly where governments perceive divestiture as interfering with the opportunity to participate in international allocation plans for future emergencies or other forms of scarcity. The reciprocal of this perception, namely that integrated companies are the best guarantors of access to foreign crude in an emergency, was clearly expressed in the official report of the Commission of the European Communities published in December 1975, _The Behavior of the Oil Companies in the Community During the Period from October 1973 to March 1974_:

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*U.S. Treasury, June, 1976, _Implications of Divestiture_, p. 345.

"It also emerges from this report that during the crisis the dissimilar actions by member states were aimed at the urgent introduction of measures and gave the impression of an 'every man for himself' approach, which was scarcely in the Community spirit.

"During the same period, because of their international standing and experience, the oil companies made an important contribution to alleviating for the countries of the Community, the serious repercussions on their supplies of the decisions taken by the oil producing countries.

"This same crisis served, in fact, to highlight how effective and indispensable their influence is, and to bring home to economic observers and to the general public the power wielded by these larger companies and the limitations of any attempt at state intervention."

The size and value of the U.S. petroleum investment that could potentially be jeopardized by negative reactions abroad to both a U.S. desire for divestiture and any semblance of U.S. intervention in the industrial affairs of other nations is very substantial. The 18 Major U.S. companies own 6.1 million b/d of refining capacity in Europe, or about 30% of total European capacity. They also own nearly 6 billion barrels of crude oil reserves in the North Sea, equal to nearly 30% of total North Sea reserves. Significantly, six of the eleven major U.S. companies which found oil in the U.K. sector of the North Sea also have refineries in that country. In Canada 15 of the 18 U.S. majors are active. Together they accounted for about 860,000 b/d of production and over 1 million b/d of refining capacity in 1975. (All of the data are detailed in Appendix Tables III-V.)

With stakes of such immense values and with national oil companies becoming increasingly active not only in producing but also in consuming countries -- the U.K., Canada and France are recent examples -- there is a real possibility that full or partial nationalization of U.S. oil companies will be urged if they are perceived to be in conflict with their host country's oil policy. Vertical divestiture of U.S. companies in foreign countries could provide the justification for the advocacy of such action.

Even if foreign governments do nothing to countermand or prevent divestiture, it would still weaken the international position of the U.S. companies forced to undergo it, with a consequent decline in competition in the world oil industry. The reason is that these companies would become less competitive than their non-U.S. counterparts, in terms of efficiency, flexibility and security of supplies. They may also be shut out from exploring for new oil, particularly in the less developed countries. Many of these countries are known to want local refineries built when a sufficient level of production has been reached. Companies that are legally barred from meeting this demand would have a lesser chance to receive oil exploration rights than their competitors who have no such constraints. Inasmuch as the location of new oil reserves in new areas would probably do more to contain OPEC cartel prices than almost any other measure, a policy that might discourage U.S. company participation in foreign ventures would not be in the national interest.

U.S. Divestiture and Foreign Oil Companies

Our last point concerns the effect of the proposed divestiture legislation on foreign oil companies operating in the U.S.

Divestiture in the U.S. would of course apply equally to all oil companies operating here and meeting the established criteria, regardless of foreign or domestic ownership. However, several sponsors of S.2387 have held that the divestiture legislation also applies to the foreign activities of foreign oil companies operating in the U.S. They have said, in effect, if companies such as Shell or BP wish to continue to operate in this country after S.2387 becomes law they must also undergo divestiture in their own countries as well as in any other place they operate abroad. Here is how one of the sponsors of S.2387, Senator James Abourezk, has stated the issue in a colloquy with Mr. Frank N. Ikard, President of the American Petroleum Institute, during a Senate Hearing on September 26, 1975.

> "Senator Abourezk. Now, in your testimony you say that divestiture will hurt the competitive position of our majors overseas.
>
> "But my question to you is: What other oil companies besides Shell and British Petroleum have any position in the international market comparable to the five U.S. majors and, in fact, would not Shell and British Petroleum - in order to do business in this country - would they not have to divorce themselves from those operations? Would they not have to divest as well as the American companies?
>
> "Mr. Ikard. Well, that is the question I raise. I do not know the answer to that. I am suggesting by my question that, for instance, in a foreign company that controls a domestic corporation in this country, if the domestic corporation were forced to divest, then do you really accomplish anything because, even though you divest, the stock is still commonly held by whoever holds it somewhere other than the United States.
>
> "And I do not know. I am, again, posing a question, whether we can enforce our judgment on corporations that, in effect, do not do business in this country. So that is the question I raise. I just do not know the answer.
>
> "Senator Abourezk. My interpretation of it would be that if they want to do business here they would have to divest according to this act. I think this pretty well would rule them out as an integrated oil company if they wanted to do business here."

*Hearings before the Senate Judiciary's Subcommittee on Antitrust and Monopoly, September 26, 1975, p. 154.

The same point was stated even more clearly by another sponsor of the bill, Senator Philip A. Hart (Mich.) in an exchange of letters with Senator Quentin N. Burdick (N.D.) in April and May 1976. To Senator Burdick's question,

> "Is the bill also intended to apply (to) assets of foreign companies in foreign countries when those companies, by virtue of their holdings in the United States, are "major" producers, refiners or marketers in the United States (e.g. Shell or BP)?"

Senator Hart answers unequivocally,

> "Yes. Shell and BP would have to make a choice between abandoning their business in the United States and complying with the act."

To which Senator Burdick comments further,

> "This statement raises the legal question as to the effects of trying to govern a foreign company's foreign operations upon penalty of forcing it to abandon its United States operations. Problems with foreign governments could also result from mandating this choice."

If some foreign countries are likely to object to the mandated divestiture of U.S. companies operating abroad, there can be no doubt how these countries would react to any outside attempt to force their own companies to do so. If the affected foreign companies would then have to take the other option and withdraw from the U.S. market, some form of retaliation by the foreign company's home country could certainly be expected, particularly since the countries most likely to be affected by the U.S. action are in a strong position to enforce retaliation.

Common sense will probably prevent the occurrence of such a situation in real life. But the fact that this type of action is being seriously proposed by legislators may well indicate that the potential international ramifications of vertical divestiture are not appreciated by its advocates.

A P P E N D I X

Appendix
Table I

Payments—cents per barrel of Exports

Year	Kuwait	Saudi Arabia	Iran	Iraq	Abu Dhabi	Qatar	Others	Total ME	Libya	Total ME & Libya	Algeria	Nigeria	Ven zuel
1955	76.7	82.1	81.8	86.2		83.6	81.8	81.1		81.1			80.
1960	76.5	75.0	80.1	78.6		86.4	79.3	77.5		77.5			89.
1961	74.4	75.5	75.8	76.5		83.0	79.3	75.6	62.7	75.6			93.
1962	74.8	76.5	74.5	76.7	50.9	82.3	79.3	75.7	64.7	75.4			97.
1963	74.3	78.7	79.7	80.7	36.4	84.2	79.3	77.7	65.1	76.9			98.
1964	76.9	82.0	80.9	80.1	18.2	84.4	79.9	78.3	62.9	76.7			95.
1965	78.9	83.2	81.1	81.7	32.5	82.2	80.8	79.5	83.8	80.0			95.
1966	78.4	83.4	81.4	81.3	75.3	87.3	84.5	81.1	87.0	81.9			95.
1967	79.3	84.8	82.5	85.2	76.3	87.2	52.3	82.2	101.6	85.1			102.
1968	80.5	87.8	83.7	90.7	84.5	88.1	72.4	85.0	100.7	87.9	90.3		101.
1969	80.8	87.1	80.9	91.4	87.3	91.9	77.9	84.3	100.0	87.6	90.4		103.
1970	82.8	88.3	86.2	95.7	92.0	91.5	83.5	87.4	109.0	91.7	90.7	109.3	109.
1971	119.7	125.9	124.6	141.5	127.2	126.4	110.1	125.5	178.6	133.3	126.8	172.2	141.
1972	140.9	143.7	135.8	150.7	143.4	144.5	120.6	140.7	196.6	147.2	187.7	187.0	171.
Total 1963-1972	91.6	102.1	98.2	105.5	99.0	101.4	91.5	97.7	119.1	101.0			111.

Source: Petroleum Information Foundation, Inc., Paper No. 16, October 1973.

Appendix

Table II

QUARTERLY PRODUCTION OF OPEC MEMBERS
2ND QUARTER 1974 - 3RD QUARTER 1976
(000 b/d)

	2nd Q 74	3rd Q 74	4th Q 74	1st Q 75	2nd Q 75	3rd Q 75	4th Q 75	1st Q 76	2nd Q 76	3rd Q 76
Saudi Arabia*	8,575	8,332	8,370	6,827	6,325	7,584	6,566	7,723	8,216	8,454
Kuwait*	2,579	1,915	2,040	1,937	1,844	1,976	1,598	1,648	1,600	1,811
Iran	6,134	5,953	5,882	5,644	5,224	5,678	4,858	5,239	5,733	5,948
Iraq	1,758	1,752	2,029	2,023	2,291	2,424	2,219	2,000	1,511	2,381
Abu Dhabi	1,600	1,504	1,194	919	1,480	1,650	1,552	1,557	1,548	1,613
Libya	1,781	1,384	1,033	991	1,308	1,902	1,738	1,712	1,951	2,014
Nigeria	2,303	2,265	2,208	1,833	1,597	1,769	1,946	1,952	2,080	2,011
Indonesia	1,472	1,378	1,275	1,265	1,224	1,362	1,400	1,472	1,508	1,501
Venezuela	2,996	2,854	2,828	2,617	2,442	2,310	2,018	2,007	2,376	2,423
Other**	2,872	2,667	2,598	2,432	2,516	2,498	2,695	2,589	2,574	2,627
Total OPEC	32,070	30,004	29,457	26,488	26,251	29,153	26,590	27,899	29,097	30,583

*Excluding Neutral Zone
**Neutral Zone, Qatar, Other U.A.E., Algeria, Gabon and Ecuador.

Source: Oil & Gas Journal.

Appendix
Table III

EQUITY SHARES OF MAJOR U.S. OIL COMPANIES IN EUROPEAN REFINERY CAPACITY AS OF 1/1/76
(000 b/d)

	Continental	Exxon	Gulf	Marathon	Mobil	Phillips	Standard of California	Standard of Indiana	Texaco	Companies' Total	Country Total
Belgium	-	94	-	-	-	-	140	-	180	414	946
Denmark	-	72	90	-	-	-	-	-	-	162	226
France	-	281	57	-	197	-	66	-	65	666	3,312
W. Germany	13	504	-	70	305	-	45	-	205	1,142	3,103
Italy	-	439	81	-	150	-	72	95	22	859	4,082
Netherlands	-	320	94	-	125	-	205	-	95	839	1,985
Norway	-	108	-	-	-	-	-	-	-	108	259
Spain	-	80	45	-	-	-	51	-	51	227	1,323
U.K.	86	688	103	-	175	57	-	101	180	1,390	2,889
Others	-	116	15	-	49	-	-	-	100	280	2,164
Total	99	2,702	485	70	1,000	57	579	196	897	6,085	20,289

Sources: Annual Reports, direct company information, Oil & Gas Journal.

Appendix
Table IV

RESERVES OF MAJOR U.S. COMPANIES IN
BRITISH AND NORWEGIAN
AREAS OF THE NORTH SEA
(MM bbls)

	Great Britain	Norway	North Sea Total
Amerada Hess	170.4	37.0	207.4
Continental	386.4	290.0	676.4
Exxon	1,631.2	435.0	2,066.2
Getty	320.5	-	320.5
Gulf	386.4	-	386.4
Mobil	145.0	435.0	580.0
Phillips	121.1	914.2	1,035.3
Standard of California	213.2	-	213.2
Standard of Indiana	238.5	37.0	275.5
Texaco	26.1	-	26.1
Union	56.6	-	56.6
U.S. Company Total	3,695.4	2,148.2	5,843.6
Total Reserves	14,500	5,800	20,300

Source: European Petroleum Year Book, 1975.

Appendix
Table V

CANADIAN CRUDE OIL AND NGL PRODUCTION AND REFINING CAPACITY OF MAJOR U.S. OIL COMPANIES

	Net Production 1975 b/d	Refining Capacity (as of 1/1/76) 000 b/d
Amerada Hess	15,292	-
Ashland[1]	21,682	-
Atlantic Richfield	22,800	-
Cities Service[2]	6,100	-
Continental	77,963	-
Exxon	174,000	514.0
Gulf	79,900	374.8
Marathon	5,140	-
Mobil[2,3]	112,000	-
Phillips[4]	40,376	-
Standard of California	76,286	77.0
Standard (Indiana)	62,338	-
Sun	11,035	85.5
Texaco	139,000	108.8
Union	19,500	7.7
U.S. Company Total	863,412	1,167.8
Canada Total	1,444,000	2,076.1

(1) Includes royalty oil

(2) Crude Oil Only

(3) Gross Production

(4) Includes production and refining capacity of affiliate, in proportion to Phillips holdings.

Sources: Annual Reports and direct company information.

Appendix
Table VI

U.S. OIL COMPANIES AFFECTED BY S.2387*

Amerada Hess

Ashland

Atlantic Richfield

BP Sohio

Cities Service

Continental

Exxon

Getty

Gulf

Marathon

Mobil

Phillips

Shell

Standard of California

Standard (Indiana)

Sun

Texaco

Union

*According to the Report on S.2387 by the Senate Judiciary Committee.