No sector of U.S. opinion has been more badly misled by the pretense that Exxon, Texaco, and Mobil are "energy companies" than the energy industry itself. In particular, the apparent solid front of the "energy industry" in favor of deregulation of the price of petroleum products contains a bitter irony for petroleum companies with a commitment to exploration and development. Despite the quadrupling of oil prices and doubling of natural gas prices, exploration activity in the United States has shrugged off the expected benefit of the price-incentive to exploration. New petroleum sources development ground to a halt by the end of 1975 because companies with the will to explore were over their heads in debt as a result of Rockefeller financial policies, and terrorized by Rockefeller "environmentalist" agents. Under conditions of Rockefeller control of Federal energy policy and Texaco-Exxon-Mobil dominance of the energy market, price de-control cannot possibly have a significant impact on the development of new energy sources.

Dramatic Increase In Oil And Gas Industry Costs Is A Problem of Financing

In 1975, 9,214 new wells were drilled in the United States, below the 1966 figure of 10,313, and not substantially higher than the 1972 figure of 7,539. The relatively low level of exploration is a significant contributing factor to the current natural gas shortage, and is entirely inexplicable from the standpoint of price incentives to the petroleum industry.

As the pro-exploration oil companies themselves have argued, most of the excess revenues resulting from the oil price increase have been taken up in drilling and exploration costs. By 1974, the cost of exploration had risen to four times the 1971 figure; the cost per foot of drilling has been rising at an annual rate of roughly 25 per cent per year since the oil prices quadrupled in late 1973.

This exponential rise in costs breaks down principally into equipment costs, which have escalated significantly faster than the overall rate of capital goods inflation in the most critical sectors, and costs of land leasing, particularly in the highly speculative 1974 rush into offshore leases. But the underlying impetus for the rise in costs — and the principal factor depressing private-sector energy development — is the stupendous aggregation of high-interest debt in the oil and natural gas industry (Graph 1). Chase Manhattan's analysts report on a $4 billion increase in debt service charges to their Group of Petroleum Companies in 1975. Because the availability of energy-related capital goods and the financing of these capital goods involve a single operation, in which the elements of price and financing costs depend closely on each other, the cost-inflation problem is strictly a financial problem.

Since the 1973 rise in oil prices, the large commercial banks which dominate energy financing have been responsible for an anticipatory rise in industry costs, burning out the revenue advantage to the industry through a rise in strictly financial costs. Graph 1 shows that the external financing requirements of a key group

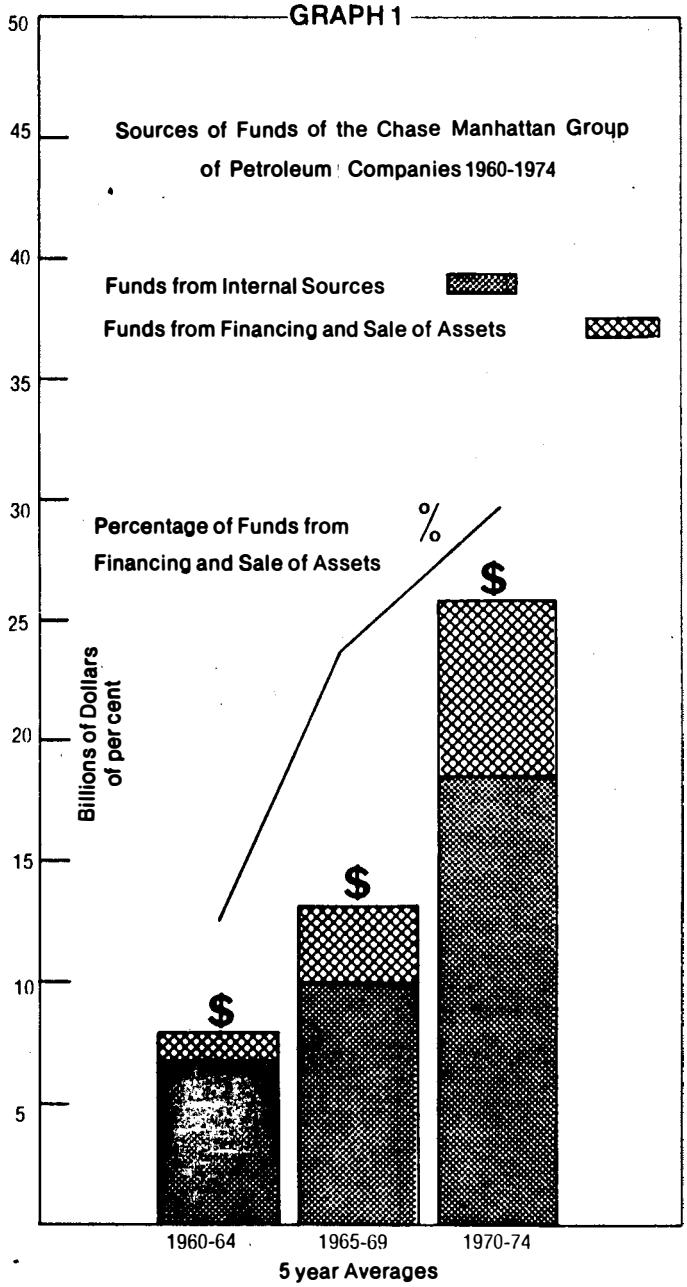
Comparison Of Price Of Capital Goods In The Energy Industry And All Industry

(1967=100)

	1971	1972	1973	1974	1975
OIL FIELD MACHINERY INDEX	122.6	127.3	133.2	157.8	196.3
YEAR-TO-YEAR PER CENT INCREASE				18.5%	24.4%
OIL WELL CASING INDEX	120.7	128.4	133.2	170.7	211.5
YEAR-TO-YEAR PER CENT INCREASE				28.2%	23.9%
ALL CAPITAL GOODS INDEX	116.6	119.5	123.5	141.0	162.5
YEAR-TO-YEAR PER CENT INCREASE				14.2%	15.3%

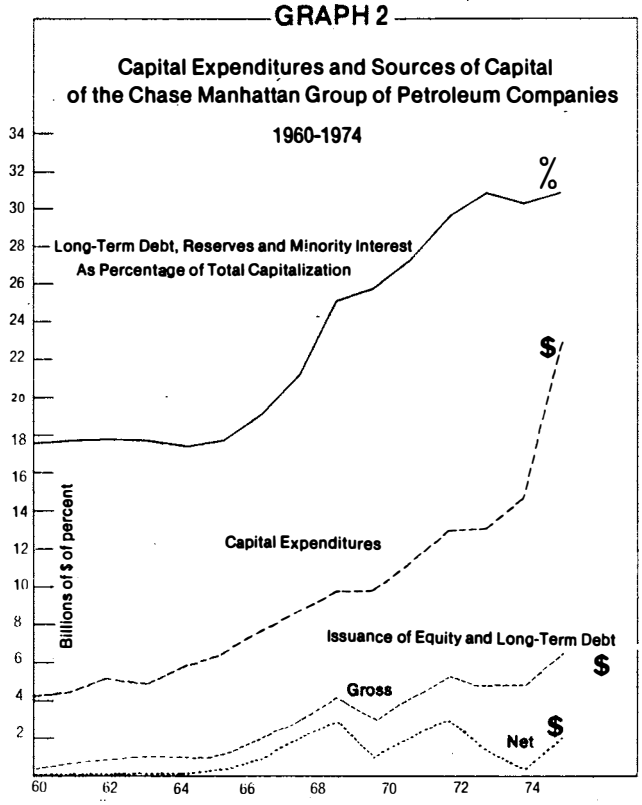
of petroleum companies have risen exponentially, from 12 per cent of total turnover in 1960-1964 to 30 per cent during 1970-74; industry sources estimate that the problem has worsened dramatically since then. Of this external debt, only a negligible volume has been financed through the long-term capital markets and the equity markets (Graph 2). All but 5 per cent of the $23 billion in capital expenditures made by the Chase Manhattan group of petroleum companies during 1974 depended on a variety of high-cost, short-term financial methods, the most typical of which are leasing of equipment at effective interest rates in excess of 20 per cent per year, and so-called production sharing arrangements.

GRAPH 1



Increasing dependence on external financing

GRAPH 2



Only a small margin of the external financing is long-term

To avoid confusion: although the large New York commercial banks are the dominant financiers for oil exploration and development, their terms of lending are no more onerous than those of the Republic National Bank of Dallas or the Bank of America, which have little sympathy for Rockefeller policies. Superficially the banking industry competes for such loans. But the overall conditions under which credit is issued in the United States have been determined by the explicitly New York policy of funneling loans out of the U.S. economy into speculative international loans, mainly tied to extractive raw-materials investment in the developing sector. The $300 billion volume of unpayable Third World debt, the largest portion of which is owed to the U.S. and principally New York banks, has committed the U.S. Federal Reserve to an inflationary policy of sustaining the banks at all costs, and created a monetary context in which sufficient volumes of long-term credit cannot be raised.

On the overall position of the thirty companies included in their study, Chase Manhattan's analysts report: "The Group's dependence on borrowed funds has risen dramatically. That fact is reflected in the size of the funds applied toward repayment of debt obligations. Reaching the $5 billion level in 1975 for the first time, long-term debt repayments were $1.2 billion more than the year before. Totaling $1.7 billion, investments and advances to affiliated companies nearly doubled. And $99 million was used for the retirement of stock. The total funds utilized amounted to nearly $37.2 billion. But, as indicated earlier, the various sources of funds provided

only $35.0 billion. To compensate for that deficiency, the Group drew upon its working capital in the amount of $2.1 billion." ("Financial Analysis of a Group of Petroleum Companies," Chase Manhattan, 1976). Of the $35 billion in funds expended, more than one-third derived from borrowings.

The debt position of the thirty companies in the Chase survey ignores the position of hundreds of so-called independent companies, who accomplish a disproportionately large share of new exploration. According to Independent Petroleum Association of America and numerous producers, the cash position of this group has worsened more dramatically than the position of the large companies studied by Chase, to the point that a majority of the "independent" producers are now at the brink of financial embarassment.

Secondly, in critical exploration areas such as offshore drilling, the debts incurred by petroleum companies represents only one aspect of the financing cycle. To this must be added the debts incurred by drilling contractors and rig-builders. In effect, most offshore drilling is financed two or three times over, and the end-product must bear double or triple interest charges (see below).

Financing and Energy Policy

The industry's underlying problem has surfaced in the unlikely forum of the Financial Accounting Standards Board, which is currently considering means of unifying accounting standards for the energy industry, under the direction of the Energy and Conservation Act of 1975. The oil majors employ a different form of accounting than the "independent" domestic producers, including substantial producers like Sun Oil and Pennzoil. The Aramco companies employ a bookkeeping device called "successful effort accounting," which entails the immediate writing-off of dry exploratory wells and capital equipment depreciation costs. The advantage in this is obvious. The major profits of, for example, Exxon, Texaco, and Mobil derive from extremely low-cost production in the OPEC countries, and integrated "downstream" refining and marketing, rather than development of new energy sources.

It would not be too much of an exaggeration to assert that the exploration and development activities of the Rockefeller oil organizations, the group with special access to Middle Eastern oil fields, represent a form of in-house tax shelter. Exxon, the largest U.S. oil company, devotes a portion of its earnings to capital investment that is among the smallest in the industry.

Nonetheless, Exxon managed to match its entire $500 million rise in corporate income tax between 1973 and 1975 with a nearly identical rise in depreciation tax write-offs. There is speculation among oil security analysts that Exxon, Texaco, and Mobil measure exploration current losses with actuarial precision strictly to obtain the resulting tax benefits, especially with the repeal of the oil depletion allowance.

By contrast, the independent oil companies employ "full cost accounting," according to which all exploration costs, regardless of success, are capitalized onto the books of the company. The revenue from successful wells ultimately pays the cost — it is hoped — of total expenditures. The company attempts to match its total revenue against both its costs and the debt-service attached to those costs. Particularly in the case of natural gas producers, whose product has increased in price more slowly than oil, the IPAA believes, only new price increases will enable a large proportion of independent producers to remain solvent.

The independents must use this form of accounting for two reasons. First, they have no incentive to write off costs on a current account basis, because their revenues from activities other than drilling and exploration are negligible in comparison to those of the majors. Secondly, since their earnings depend heavily on the commitment of venture capital, quarter-to-quarter fluctuations resulting from the uncertainties of successful exploration would produce extreme shifts in the balance-sheet position of the independent companies.

The differences between these accounting methods reflect a much more important policy question. Once Rockefeller allies such as Sawhill, Simon, Zarb and Schlesinger at the Federal Energy Administration and Rockefeller petroleum companies decide that all new development is a long-term no-win battle against the dimunition of available resources, and that the cost of energy to the economy must follow a rising curve over the long-term, the current rise in costs is inevitable. The provision and cost of energy are the most basic determinants of economic growth. By mutual agreement, the Federal government, the three "Big Sisters" and the banks have *pre-discounted* the expected continuous rise in the price and debt-service cost of the means of development of new petroleum sources.

At bottom, the determination of energy costs is a political question. This is strongly indicated by the single fact that the major political assault against nuclear power development, the most important development area for alternative energy sources, has been financed and directed through the Lower Manhattan financial interests (see EIR Vol. IV no. 4, "A Company Against Uranium Use," p. 13). Once political and consequent financial policies determine that energy shall be scarce and increasingly costly, the petroleum industry no longer functions as a provider of energy. Instead the financial dynamics of the industry have turned the industry, from the shipyard rig-builder to the drilling contractor to the commercial bank leasing department, into a transmission belt for increasing debt-service costs to the economy. After the short-term credit markets have had their full play, the price of energy charged to the consumer has already been paid out through financial and related costs of development.

Available evidence shows that de-control of oil and natural gas prices will not have a substantial impact on energy development, and will have only a temporary impact on the financial problems of the independent energy companies. The experience of 1973-1975 shows that speculation in exploration and drilling equipment, plus financial charges, rapidly effaced the margin of

incentive to develop new sources.

The problem is set in appropriate focus by contrast to the alternative energy strategy available. By intermeshing a short-term program of intensive exploitation of available fossil fuel energy sources; an immediate program of nuclear fission, especially fast-breeder, reactor development; and a long-term (15 year) perspective of bringing controlled thermonuclear reaction, or fusion reactors into commercial use, the United States economy can anticipate cheapening energy costs. If the current rate of increase in energy development costs were to continue through 1980, the petroleum industry would require a second quadrupling of oil prices merely to keep pace, by linear projection. But the certainty of cheaper energy costs 15 years ahead — fusion is estimated to be 100 times cheaper than fossil fuels — justifies the provision of long-term, low-interest credits to the energy industry for all three aspects of the integrated energy program mentioned above.

In basic economic terms the cost of current energy production and development can be judged only in terms of the program as a whole. President Carter proposes to reduce energy consumption by as much as the United States currently imports, or roughly 40 per cent. Taken as a program, this perspective makes further energy development a luxury, and the current cost to the economy rises on a curve of marginal scarcity. This corresponds to the financial conditions that have been imposed on the energy industry, amounting to (by Chase's estimates) a 20 per cent annual charge on the account of debt service alone, plus a 25 per cent annual charge in the form of price increases for equipment, plus significant amounts for royalty payments towards oil produced on leased land. The standard charge for the latter is 16 per cent.

To these financial charges must be added a further significant cost factor due to the actual depletion of resources, which means that wells must be drilled deeper or in more difficult conditions. There is no way to quantify this factor at present. But the combined overhead charge to new petroleum production is in the order of magnitude of 75 per cent.

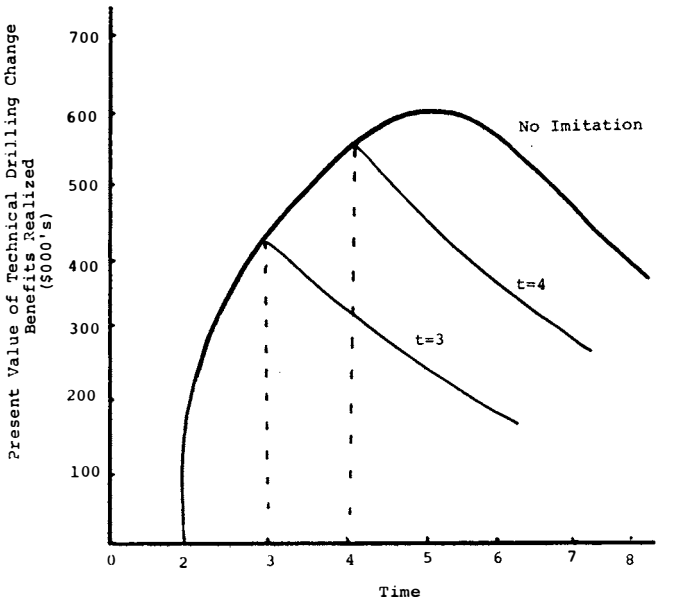
The relationship between these costs and the perspective of "resource depletion," "scarce energy," "rising energy costs," and the "need for conservation," assiduously manufactured by the Rockefeller and Ford Foundations and Nelson Rockefeller's Commission on Critical Choices is widely recognized. Against their better judgment and self-interests, some of the domestic producers have come to repeat Rockefeller Foundation arguments in order to justify price de-control — despite the implication that under scarce-energy conditions price de-control will not provide sufficient revenue for new petroleum development.

Within the oil industry, the conditions imposed on exploration and development by the Rockefeller oil companies, financial institutions and political agents are generally viewed as God-given questions of "economic conditions." This view has been enhanced by the clubby participation of Exxon and Texaco in the industry's demand for de-control. (In August 1975, Mobil was no longer able to contain its glee over the advantages it received from the entitlements system, and announced publicly in favor of "gradual decontrol").

The petroleum companies' misperception that Exxon, Texaco and Mobil form part of their ranks reached a low point of drollery at the Oct. 22, 1976 meeting of the Cost-Study Committee of the Independent Petroleum Association of America in New Orleans. To give the lead address, the IPAA invited a snake-oil specialist from Salomon Bros., E. Anthony Copp. Copp presented the following analysis: "Over time, the long-run marginal cost curve per barrel of oil or per MCF of natural gas could still decline over all outputs and the industry would still be one of increasing cost." To expound this strange assertion, Copp says, "technological changes have reduced real petroleum drilling costs and have acted to counterbalance the tendency toward long-run increasing costs characteristic of the petroleum industry."

However, Copp says, the return to the technological innovator depends on his maintaining the exclusive use of his invention! He provides the following graph, with the explanation:

"If no-one imitates (the pioneer's) technology, and the pioneer can internalize all the benefits from his innovation, the 'no imitation' curve is the curve indicating the present value of benefits over the life of the innovation. However, if in year 3 or year 4, his competitors adopt or imitate the new technique, then the appropriate returns are reduced to the pioneer."



The minutes of the Cost-Study Committee do not record how the independent oilmen present, swamped by bank debts and rising equipment costs, reacted to the suggestion that they were each other's prime enemies.

How It Works

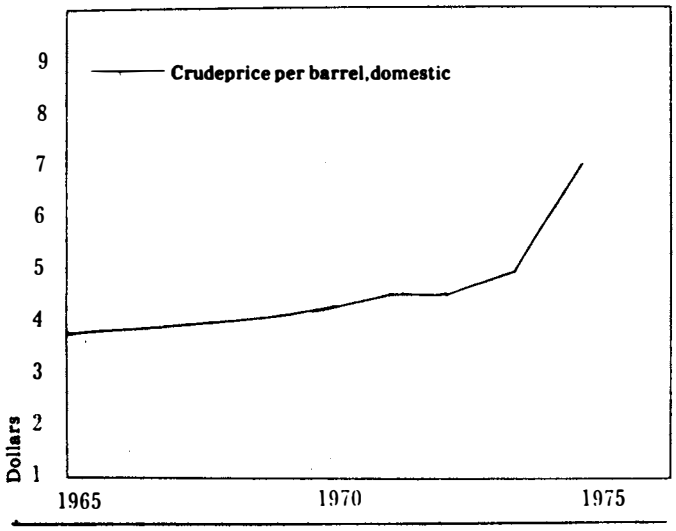
According to Offshore Rig Data Services, costs of offshore drilling equipment — since 1973 the biggest area of demand — have risen as follows:

Cost of a semi-submersible rig:	1960	$ 8.7 million
	1975	$37.3 million

Cost of average drill ship:	1960	$ 5.6 million
	1975	$32.3 million
Cost of average jack-up rig:	1960	$ 5.2 million
	1975	$21.7 million

These figures, which show rises about double the overall rate of capital goods inflation, reflect a burst of speculation in offshore equipment that began with the introduction of Federal guarantees for 85 per cent of the value of loans to drilling contractors, and peaked during 1974. Prior to this, during the 1957-72 period, the rig building industry, dominated by major steel and shipbuilding (and some large oil) companies, was in continuous depression. Prior to 1972, a mere 10 per cent of all rigs were built on speculation, that is, without a contract in hand. By 1976, however, Offshore Rig Data Services estimates, more than 50 per cent of all rigs were built on speculation.

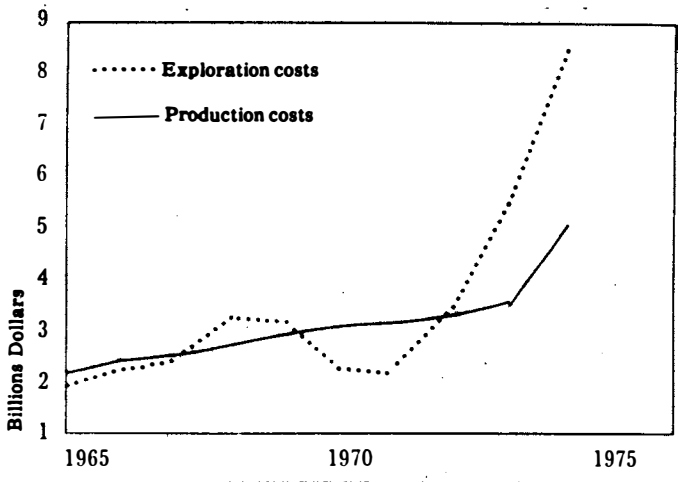
CRUDE PRICE PER BARREL, DOMESTIC



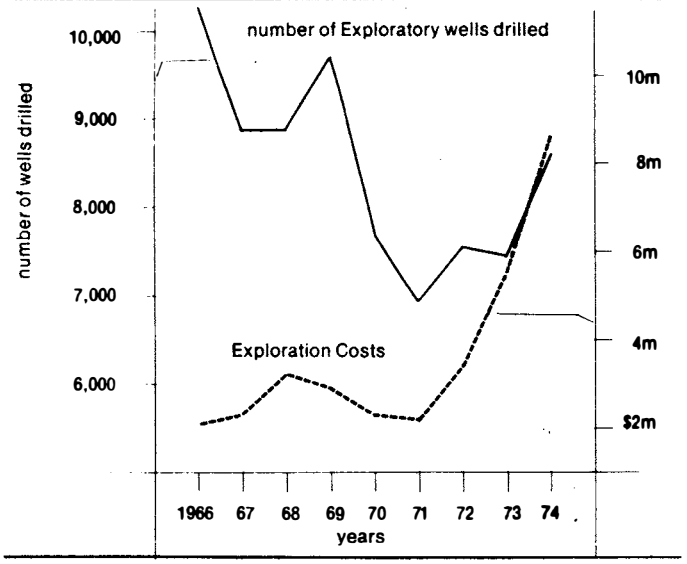
In the wake of the quadrupling of oil prices, a "gold rush" into offshore drilling equipment emerged, and represented the principal cost-factor that drove up the indices of drilling equipment prices and per-foot drilling costs. Drilling contractors went heavily into debt to purchase the equipment at higher prices, either through direct bank loans, or, more typically, through leasing arrangements with bank subsidiaries. Along with the tanker boom, the bull market in offshore equipment accounted for the sudden, exponential growth of commercial bank leasing subsidiaries.

The following is a rough depiction of the complex and costly chain of financing between the rig-builder, drilling contractor, and petroleum company. Usually a shipyard division of a major corporation — Bethlehem Steel is one major builder — is the offshore rig builder. Shipbuilding is one of the most heavily indebted sections of industry, to start with. One of the leading twenty drilling contractors, which account for over 90 per cent of all drilling activity in the U.S., will obtain a three-to-five year drilling contract from a petroleum company. On the strength of this contract, the drilling contractor approaches a commercial bank for a loan, or for a leasing contract, in which the bank purchases the offshore rig and leases it back to the contractor. In some cases the drilling contractor can qualify for a government-backed bond issue floated on the securities market. (The Federal Maritime Administration does not make the volume of its guarantees public).

U.S. OIL AND GAS INDUSTRY COSTS



The drilling contractor has made a purchase of an expensive piece of capital equipment enormous in proportion to his capital. (Maintenance costs for a rig and crew are roughly $20,000 a day, about the same as for a large oil tanker). The petroleum company which employs the contractor, typically, must borrow funds to meet the cost of the contract. Apart from balance sheet financing through the long-term debt market, which totalled $10.1 billion during 1975, the general procedure involves a three to five-year mortgage on leased oil-producing property. The latter procedure is almost universal for smaller producers. (The credit of drilling contractors is extremely tenuous; one of the largest offshore contractors, Zapata Corp., had to withdraw from the bond market due to lack of investor interest at the end of January.) Intermixed with such arrangements are partial-payments arrangements between petroleum company, rig-builder, and contractor, which involve a



significant volume of suppliers' credits. In any event, the interest charges on the operation are paid to financial institutions by two or three of the parties simultaneously.

A subsidiary cost problem was the rush into offshore drilling area leases; in 1974, the turning point, the Federal government sold $5.1 billion in offshore leases at auction. This sum represented the equivalent of 20 per cent of all capital outlays that year by the Chase Manhattan group of petroleum companies. However, after passage of the National Environmental Protection Act and its application to offshore drilling, government lease sales dropped to $1.2 billion during 1975. But the choke-point for offshore exploration — the principal area in which substantial new oil and gas reserves are available — was debt. The International Association of Drilling Contractors estimates that a collapse of orders occurred during 1975 because contractors had borrowed themselves into a corner. Drillers are attempting to make ends meet by amortizing their existing equipment, the Association says. Few are actually in default — in which case the Federal Maritime Administration would make good some of their loans — but their capacity for further expansion is almost nil. Even where drilling contractors have obtained direct balance-sheet financing, rather than leasing equipment, they are compelled to pass along depreciation costs on equipment in their charges to the independent petroleum companies which employ them.

Under the burden of debt, the International Association of Drilling Contractors estimates, 1976 orders were at the lowest point since the Association's series begins — this despite the recent quadrupling of oil prices! Since the lead time on rigs ordered is roughly two years, the flow of deliveries peaked in 1976, while orders collapsed. 1977 is expected to be a disaster year for the rig-building industry, despite the energy shortage. Towards the end of 1976, the cost of rig and related equipment utilization dropped for the first time since the 1974 boom. In the largest area of offshore development, the North Sea, the daily rental cost of a supply ship, for example, fell from $2,300 during the first quarter of 1976 to $1,800 during the fourth quarter, by an independent consultant's estimate. Recent reports show a pickup in utilization rates in the North Sea, due to the British government's strong support for the only real success story in offshore development. Industry sources say that drilling contractors are still operating at sharp discounts in the United States sector, and barely keeping their heads above water.

The conclusion is that the speculative and debt-service costs attached to the petroleum industry destroyed the industry's capacity to open up new sources within two years of the quadrupling of oil prices. An increase in prices might, at best, achieve a temporary re-ignition of the speculative cycle, with little benefit in terms of new sources. Nothing outside the availability of long-term, low-interest development loans will make a significant difference to energy supplies.

Who Pays The Price Of Energy Development?

The astronomical costs of exploration and development have fallen most heavily on the three "little sisters" and a group of independent companies which have aggressively developed new sources of crude oil and natural gas in the North Sea and Alaska for their refining and marketing operations. By contrast, the Aramco companies — Exxon, Texaco, Mobil, and Socal — with their toehold in the Middle East, in particular Saudi Arabia, have spent relatively little on exploration and development in the last several years. This is consistent with the Rockefeller policy of limiting production, maintaining high energy prices, and forcing energy cutbacks on the world.

The Aramco Triumvirate

Aramco's domination of the world oil-market — and of world energy policy — rests solidly on its monopoly of Saudi crude oil. Before the nationalization process began in 1972, the ownership of Aramco was: Exxon 30 per cent, Texaco 30 per cent, Socal 30 per cent, and Mobil 10 per cent. Discussions of full nationalization of Aramco by the Saudi government are still in process; however, nationalization has not disturbed the four U.S. multinationals' preferential access to Saudi production in the same proportionalities as before 1972.

Exxon's annual report carefully obscures the exact amount of crude oil and natural gas liquids (NGL) production in Saudi Arabia (here and throughout "production" includes oil acquired under long-term purchase agreement); however, in 1975 the amount was roughly 30 per cent of Exxon's total worldwide production of $5,411 million b.d. Exxon's total U.S. production was 970,000 b.d. or 18 per cent of its total worldwide production. The rest of Exxon's crude oil production was accounted for largely by its production in Venezuela (20.5 per cent), Africa, and the Middle East apart from Saudi Arabia.

Roughly the same story holds for the other Aramco companies with gross operating revenue of $24.5 billion in 1975, little more than half of Exxon's $47.8 billion, produced 1,886,000 b.d. in Saudi Arabia alone, 50 per cent of its 3,770 million b.d. worldwide production. Production in the U.S. (749,000 b.d.), Indonesia (384,000 b.d.), and Canada (139,000 b.d.) were the other main sources of Texaco's crude.

Mobil, with gross operating revenue of $20.6 billion in 1975, produced 1,408 million b.d. in the Middle East, 63 per cent of its 2,240 million b.d. total worldwide