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REQUIREMENTS

A STUDY

PREPARED FOR THE USE OF THE
SUBCOMMITTEE ON ENERGY
OF THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES



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(II)

LETTERS OF TRANSMITTAL

September 22, 1975

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Joint Economic Committee and other Members of Congress is a staff study done at the request of the Subcommittee on Energy entitled "Oil Profits, Prices, and Capital Requirements." The study is issued as one of a series being prepared to commemorate the thirtieth anniversary of the Employment Act of 1946. In the course of this review the Committee and its Subcommittees will examine a wide range of problem areas in an attempt to develop improved means to achieve the goals of this Act. Future studies will focus on employment, inflation, economic growth, planning, and monetary and fiscal policies, among other issues.

The views expressed in this document do not necessarily represent the views of Members of the Committee.

Hubert H. Humphrey
Chairman, Joint Economic Committee

- - -

September 19, 1975

Hon. Hubert H. Humphrey
Chairman, Joint Economic Committee
Congress of the United States
Washington, D. C.

Dear Mr. Chairman: I am pleased to transmit herewith a staff study prepared for the Subcommittee on Energy entitled "Oil Profits, Prices, and Capital Requirements." This study was done at my request by the Joint Economic Committee staff.

This is the first effort to my knowledge to account in some detail for what has become of the tremendous increase in oil industry sales revenues in 1974. It also projects future rates of return to oil investment and indicates that the large investment requirement in this industry in coming years can be financed without higher oil prices and new windfalls to producers. Furthermore, the study examines the implications of the various oil pricing actions and windfall profits tax proposals for the oil industry, the pace of economic recovery, and the Federal budget. It concludes that oil prices cannot be decontrolled without severely depressing the economy unless combined with a major tax cut which would lead to a greatly increased Federal budget deficit.

The views expressed in this document do not necessarily represent the views of the Members of the Subcommittee.

Edward M. Kennedy
Chairman, Subcommittee on Energy

- - -

September 17, 1975

Hon. Edward M. Kennedy
Chairman, Subcommittee on Energy
Congress of the United States
Washington, D. C.

Dear Senator Kennedy: Transmitted herewith is a staff study entitled "Oil Profits, Prices, and Capital Requirements." It examines in detail the financial and operating data of the international and domestic oil industries for the years since 1970, especially for the turbulent years of 1973 and 1974. It also projects future rates of return from oil investments for the period of economic recovery under various assumptions about oil prices and taxes and comments on needed adaptations of economic policies to accompany these energy policies.

The study was prepared by Dr. William A. Cox of the Committee staff. Administrative and secretarial work was done by Beverly Park.

John R. Stark
Executive Director, Joint Economic Committee

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CONCLUSIONS

1. The after-tax return on stockholders' equity in the world oil industry rose from about 10 percent in 1972 to over 15 percent in 1973 and 19 percent in 1974. It dropped sharply in 1975's first quarter due largely to increased OPEC taxes, limitations on the percentage depletion allowance, reduction of inventory profits and general business recession.
2. Separate rates of return for domestic operations are available for 10 major oil companies. Their average after-tax return on equity rose from 11.3 percent in 1973 to 14.2 percent in 1974 despite embargo, price controls and business recession. It fell back to 9.2 percent in the first quarter of 1975 but remained above the average of other industry. The earnings of the smaller domestic crude producers are less affected than those of the majors by 1975 limitations on the percentage depletion allowance.
3. Profits of the large oil companies recovered slightly in the second quarter of 1975, and the third quarter began with sharp increases in oil product prices, which promise further profit improvement. If the economy recovers from recession, oil profits should increase to the range of 14 to 16 percent on equity even without oil price decontrol. Such rates would permit the industry to raise ample investment capital.
4. If United States oil prices are decontrolled and the President's tariff is removed but OPEC boosts world prices by \$1.50 per barrel, the 1976 revenue windfall on domestic oil would be 85 percent greater than that of 1974. Five-sixths of this windfall would be traceable to decontrol.
5. Even after deducting increased royalties, costs and income taxes, these price changes could raise the return on equity in the domestic oil industry by 12 percentage points. With business recovery, domestic returns could rise to over 25 percent. Thus, decontrol could make 1976 and 1977 years of windfall profits for domestic oil

exceeding the stupendous gains on foreign oil operations in 1973 and 1974.

6. The costs of producing, refining and delivering oil have pursued oil prices upward largely because higher revenues were used by the companies to outbid each other for supplies, labor and equipment. Other energy sectors have witnessed related cost increases. Today's high oil prices and the windfall profits of 1973 and 1974 have yet to yield more United States oil production, but they are producing a very high-cost energy industry.

7. On the other hand, the costs at which oilfield supplies and equipment can be profitably employed are limited by the price of new oil, which would be reduced if the President's tariff is removed and the OPEC price boost is less than the amount of the tariff (\$2 per barrel). When input costs reach this limit, it will no longer be attractive to reinvest large oil revenue windfalls in the oil industry, bidding costs still higher. In this case, much of the windfall will be invested in nonenergy industries, leading to the formation of oil-based conglomerate firms playing a major role in other sectors of the economy.

8. In view of conclusions 6 and 7, it is futile to try to generate the capital needed for future energy development in advance through high energy prices now. The needed capital can be generated alternatively through capital markets in response to normally attractive returns without the distortions caused by sudden large windfalls.

9. Costs of oil industry investment goods rose by an estimated 40 percent from 1970 to 1974, but industry internal cash flow to finance investment rose by 98 percent. Its debt-equity ratio declined slightly. Over these years, therefore, the industry substantially expanded its capacity to finance real investment without new price increases.

10. Capital outlays overseas by ten major oil companies in 1974 trailed funds generated internally in foreign operations by over 30 percent. Investment in the United States, on the other hand, exceeded domestic cash flow.

Thus, part of the foreign cash flow, in effect, was transferred to the United States. This reflects the fact that investment in new United States energy production is potentially more profitable than elsewhere because of low United States tax rates on oil and gas income and relative political security.

11. Projections of future investment requirements cumulated over many future years are deceptive and impossible to evaluate in terms of today's magnitudes. To be comprehensible, these projections must be stated in terms of annual growth rates of real investment, excluding inflation. This is because the economy's future capacity to finance investment will grow with GNP and to some degree with inflation. Restated in these terms, even the most ambitious projections of real capital needs for the petroleum industry can be met by an annual growth rate in real investment of 7 to 8.5 percent compounded through 1985. This growth rate is well within the capacity of the oil industry to finance without oil price decontrol or tax favors.

12. The problem of assuring an expansion of industries supplying oilfield capital goods adequate to match the investment capacity of oil itself is more critical than that of raising more money for the oil industry.

13. With domestic oil price decontrol, tariff removal and a \$1.50 increase in OPEC oil prices, the windfall profits tax formula proposed by the Senate Finance Committee (Senate Amendment 854) would leave an estimated \$6 billion (one-quarter of the revenue windfall) in the hands of its recipients in 1976 even after covering normal cost increases. With no OPEC price boost, it would leave 15 percent of a smaller windfall untaxed.

14. Many firms would be able to take the maximum "plowback credit" under the proposed windfall profits tax with their pre-existing investment rates. For these firms the credit would be a pure loophole. Some operating firms, moreover, will be able to utilize the plowback investments of royalty recipients in "qualified plowback stock" simply as a substitute for other sources of finance.

15. The consumer rebate proposed by the Senate Finance Committee would be insufficient to cover even the boost in primary fuel costs of old oil decontrol not to mention the secondary "ripple effects." With a boost of \$1.50 in world prices with decontrol, the rebate would cover only one-third of the projected total consumer cost increases including ripples.

16. With old oil decontrol, tariff removal and an OPEC price boost of \$1.50 per barrel, a tax cut of at least \$20 billion would be needed in addition to the Senate Finance Committee's \$12 billion proposed rebate to sustain the economic recovery. Together with the loss of the oil tariff revenues and higher government outlays for fuels, this tax cut would raise the Federal deficit from \$70 billion to some \$97 billion. Without the OPEC price boost, a tax cut of \$6 billion would be needed in addition to the proposed rebate, raising the projected deficit to \$83 billion. It is impossible to offset this deficit substantially through increased taxes on the windfall because of the infeasibility of special taxes on the secondary windfalls ("ripple effects"). But such a large tax cut seems unrealistic at the present time. An appropriate ceiling on new oil prices would obviate the need for large tax cuts and increases in the Federal deficit to accompany oil decontrol.

17. Regulation of oil prices also should make allowance for a substantial narrowing of the disparity between the very high prices of oil, coal and intra-state natural gas on the one hand and the lower prices of federally regulated interstate natural gas on the other. Coordinated action on oil and gas could permit an adjustment in gas prices at less net cost (or no net cost) to energy consumers on the average.

18. Although the proposed new oil price ceiling might discourage production from marginal oil strikes, it would not seriously blunt the strong incentive to undertake oil exploration. An increase in the price of interstate natural gas, moreover, would yield greater dividends in both output and energy conservation than prices above the proposed ceiling for oil.

I. INTRODUCTION

The controversy surrounding levels of profit and modes of operation in the oil and gas industry -- always a subject of spirited debate -- has become still more heated since the oil price revolution of late 1973. Extensive financial data on 1974 operations, however, have become available only recently, and some still are available only in preliminary form.

This study by the staff of the Joint Economic Committee presents an interpretation of the available oil company financial data together with projections of future profits and cash flow under various energy pricing and tax policies. It also examines projected investment requirements relative to these financial variables.

A word should be said about the data base. The Senate Committee on Finance in June published selected 1974 financial data for 10 major oil companies obtained by a questionnaire to the companies. This compilation includes a valuable breakdown of certain variables (e.g., sales and taxes) between the United States and foreign areas and a breakdown of taxes paid by type. These data are available for certain past years as well.¹

A second useful compilation is the combined income statements and balance sheets of 28 oil companies published annually by the Chase Manhattan Bank. This extensive information has only recently been completed for 1974 in preliminary form. It provides geographical breakdowns and subcategory detail for certain variables

1. Senate Finance Committee, "1974 Profitability of Selected Major Oil Company Operations," June 1975. For certain earlier data and detailed company submissions, see also Senate Finance Committee, "Profitability of Selected Major Oil Company Operations," December 1974.

not articulated in the Finance Committee's questionnaire and has been invaluable for this analysis.²

Despite these two sources, however, the data on oil industry operations leave much to be desired. There is very little breakdown of industry sales and virtually none for its variable operating costs. To carry out the present study, therefore, it was sometimes necessary to impute certain categories of cost using the information at the staff's disposal. Similar means had to be used in some cases to factor up statistics for a selection of companies to an industry-wide basis in Chapter V and following. Such methods will be necessary until more accurate ones can be devised.

To avoid confusion, the reader should be aware that the scope of the analysis changes at various points. Chapters II and III analyze the recent financial data for the 10 major oil companies with some assists from the sample of 28 companies. Chapters IV through VI deal with future profitability and capital needs of the oil industry as a whole. Chapters VII and VIII deal with the windfall revenues from oil pricing actions both within the oil industry and in other sectors, including those to royalty recipients, suppliers, employees and others.

Although additional information is needed for a definitive quantitative resolution of the controversies concerning oil industry finances, this study hopes to dispel some of the misunderstanding that currently abounds

2. Chase Manhattan Bank, N.A., "Financial Analysis of a Group of Petroleum Companies, 1973," October 1974. Similar data for earlier years appear in "Pro-Forma Financial Statements for a Group of Twenty-Eight Petroleum Companies," prepared from the same sources for the Federal Energy Administration by R. Shriver Associates. Preliminary 1974 data have been made available to the Committee staff and will be published shortly.

concerning the relationship of oilfield costs to oil prices, the feasibility of financing the investments required for greater energy independence, and the implications of various proposed policies on oil prices and taxes.

II. ANATOMY OF THE 1974 OIL PROFITS BOOM

As a result of OPEC (Organization of Petroleum Exporting Countries) oil price increases, worldwide profits of United States oil companies after taxes more than doubled from 1972 to 1974. The return of stockholders' equity of 20 companies, shown in Table 1, rose from 9.6 percent in 1972 to 15 percent in 1973 and 19 percent in 1974. Slightly over 1 percentage point of the 1974 level was traceable to inventory profits.

Data on ten major oil companies, published by the Senate Finance Committee, indicate that rates of return on foreign oil operations during 1973 and 1974 were markedly higher than those on domestic investment. Foreign oil investments earned over 20 percent in both years. The rate of return on domestic operations rose little in 1973 and reached a high of 14.2 percent in 1974, according to this compilation.¹

This domestic return, however, was achieved despite reduced 1974 oil consumption and a rate of domestic refinery utilization (86.7 percent) lower than for any year in well over a decade. In absolute dollars, 1974 domestic profits increased by 47 percent in the face of embargo, recession, and even the existence of price and profit controls.

The fact remains, as indicated in Table 2, that the costs of producing, refining and delivering oil seem to have caught up very quickly with soaring revenues. In the case of the foreign operations of these ten major companies, only \$0.8 billion of the more than \$40 billion increase in sales revenue in 1974 remained in after-tax profits. OPEC and other taxes took less than one-third of the revenue increase. Soaring operating costs and write-offs apparently gobbled up the rest.

1. Senate Finance Committee, "1974 Profitability of Selected Major Oil Company Operations," June 1975.

TABLE 1. After-Tax Return on Stockholders' Equity

| <u>Source & Coverage</u> | <u>1970</u> | <u>1971</u> | <u>1972</u> | <u>1973</u> | <u>1974</u> | <u>1975</u> | |
|---|-------------|-------------|-------------|-------------|-------------|-------------------|-----------------|
| | | | | | | <u>1st Qtr.</u> | <u>2nd Qtr.</u> |
| Congressional Research Service - JEC/20 Oil Companies ^a | 11.0 | 10.7 | 9.6 | 15.4 | 19.3 | 12.3 | 12.8 |
| Senate Finance Committee/10 Major Oil Companies ^b | | | | | | | |
| Worldwide | 11.2 | 11.7 | 11.0 | 15.4 | 18.1 | 11.5 ^d | n.a. |
| United States | 10.8 | 10.8 | 10.8 | 11.3 | 14.2 | 9.2 ^d | n.a. |
| Foreign | 11.6 | 13.1 | 11.3 | 20.4 | 23.7 | 14.8 ^d | n.a. |
| Federal Trade Commission/Manu- facturing Corporations ^c | 9.3 | 9.7 | 10.6 | 12.8 | 15.0 | 9.0 | 11.9 |

a. Data for 1973-1975 are from Business Week's "Surveys of Corporate Performance." Earlier years are drawn from Fortune's "Fortune-500" listings. Company rates of return were weighted by 1972 annual sales revenues by the Joint Economic Committee staff.

b. Senate Finance Committee, "1974 Profitability of Selected Major Oil Company Operations," June 1975. Company rates of return for 1971 and 1972 weighted by 1970 net assets by Joint Economic Committee staff. Five of the seven largest international companies declined to provide data for oil operations alone as requested by the Finance Committee.

c. Federal Trade Commission, "Quarterly Financial Report for Manufacturing Corporations."

d. 1975 rates of return encompass the effects of foreign nationalizations and the withdrawal of certain U.S. tax preferences, particularly the percentage depletion allowance.

n.a. - not available

TABLE 2. Sales, Costs, Taxes and Profits for Domestic and Foreign Operations of Ten Major Oil Companies (1973 and 1974 ^a)

| Area/Account | 1974 | 1973 | Change | |
|----------------------|------------|------------|------------|---------|
| | Billion \$ | Billion \$ | Billion \$ | Percent |
| <u>Worldwide</u> | | | | |
| Sales | 145.9 | 83.4 | 62.5 | 75 |
| - Costs ^b | 104.9 | 58.8 | 46.1 | 78 |
| - Taxes ^c | 31.5 | 17.3 | 14.2 | 82 |
| = Profits | 9.5 | 7.3 | 2.2 | 30 |
| <u>United States</u> | | | | |
| Sales | 60.1 | 38.2 | 21.9 | 57 |
| - Costs ^b | 52.1 | 32.9 | 19.2 | 58 |
| - Taxes ^c | 3.6 | 2.3 | 1.3 | 57 |
| = Profits | 4.4 | 3.0 | 1.4 | 47 |
| <u>Foreign</u> | | | | |
| Sales | 85.8 | 45.2 | 40.6 | 90 |
| - Costs ^b | 52.7 | 25.9 | 26.8 | 103 |
| - Taxes ^c | 28.0 | 15.0 | 13.0 | 87 |
| = Profits | 5.1 | 4.3 | 0.8 | 19 |

a. Excise taxes excluded throughout.

b. Calculated as the difference of sales minus taxes minus profits.

c. Includes income taxes, employment taxes, production and severance taxes, franchise taxes, and certain ad valorem taxes.

Source: Senate Finance Committee, "1974 Profitability of Selected Major Oil Companies Operations," June 1975

Sales revenues in the United States increased by nearly \$22 billion. Some \$6 billion of this amount stemmed from higher prices for already flowing oil and gas, the cost of which should not have changed much. Taxes remained a steady 6 percent of sales. Nonetheless, a \$19 billion rise in other business costs absorbed most of the bonanza. Only \$1.4 billion remained in after-tax profits.

Only a small amount of the increase in investment activity appears in this big cost increase. Except for those items that are expensed currently (e.g., dry holes, certain "intangible" drilling costs, etc.), investments are amortized over several years. The cost jump must be attributed mainly to the operation of pre-existing capacity. Hence it is rather hard to account for.

As this study is concerned mainly with the fortunes of the domestic oil industry, an attempt will be made to trace its 1974 cost increase by major cost categories. One major jump in costs, of course, is for the higher price of crude oil and refined products purchased from others, including crude from OPEC countries. As indicated in Table 3, this item is estimated to account for slightly over 40 percent of the total cost increase. Higher domestic royalty payments, capital recovery allowances and write-offs of exploration and development expenses could explain another 10 percent. Since 1974 was an inflationary year, particularly in the oil industry, allowance is made for an exceptional 20 percent increase in labor, materials and other variable operating costs over their estimated 1973 level. This would account for 22.9 percent of the total leap in costs for these first 10 firms in 1974.

This assessment of costs, however, leaves \$4.9 billion of United States cost increases unexplained. Some of this may have gone into variable costs of nonoil activities in certain companies not reporting on oil

TABLE 3. Estimated Increases in Domestic Costs
of Ten Major Oil Companies from 1973 to 1974

| Source of Cost Increase | Billion \$ | Percent of Total Cost Increase |
|--|------------|--------------------------------------|
| Costs of Purchased Crude and Products ^a | 7.9 | 41.1 |
| Domestic Royalties ^a | 1.0 | 5.2 |
| Capital Recovery Allowances ^b | 0.7 | 3.6 |
| Expensible Drilling Costs ^b | 0.3 | 1.6 |
| Labor, Materials and Other Variable Costs ^c | <u>4.4</u> | <u>22.9</u> |
| SUBTOTAL | 14.3 | 74.4 |
| Unexplained | <u>4.9</u> | <u>25.6</u> |
| TOTAL COST INCREASE | 19.2 | 100.0 |

a. Joint Economic Committee staff estimates.

b. Senate Finance Committee, "1974 Profitability of Selected Oil Company Operations," June 1975, Table 6; also "Profitability of Selected Oil Company Operations," December 1974, Table 5.

c. Based on a 20 percent increase in this cost category over 1973.

operations separately.² But this possibility could hardly account for it all. The explanation may be that the increase in variable operating costs -- the least definitive of the estimates in Table 3 -- was even greater than 20 percent over 1973. If \$3 billion of the unexplained component really fell in this category, then the implied inflation rate for such costs would come to nearly 35 percent over 1973.

It is necessary to re-emphasize that the cost increases in Table 3 -- except for expensable drilling costs and a small part of the increased capital recovery allowance -- were not for exploration and oilfield development in 1974. They do not include 1974 lease bonuses or significant amounts of the outlays for refinery expansions or other capital investments which are amortized over their service lives. The costs of these investment items, of course, also have risen very sharply.

It is vital to bear in mind the sequence of events leading to these cost increases. World prices were raised by cartel power independently of costs, and United States "new" oil was permitted to follow them. Higher profits on new oil created competition for limited oilfield equipment and supplies such as drilling rigs, pipe and labor and made it profitable to employ them at higher costs. Employees and suppliers of inputs not employed directly in drilling operations also demanded a share of the revenues.

Therefore, costs pursued prices upward, as the higher revenues were used by the companies to outbid each other. Initially, all items used in oil exploration and development are scarce. As the supply of the reproducible items expands, some of their prices may decline from extreme scarcity levels. Others, such as labor costs,

2. Five of the ten companies responding to the Senate Finance Committee's questionnaire did not accede to the Committee's request to report on petroleum operations separately from other activities. Firms not reporting separately are Gulf, Shell, Standard Oil of California, Texaco and, for its foreign operations, Standard of Ohio.

may not decline. In any event, the remaining excess profits tend to devolve upon the value of the mineral rights -- the ultimately scarce resource.

This pattern confirms the implication of economic theory that costs will adjust upward to absorb virtually any level of prices and profits. Today's high petroleum prices, therefore, are not the result of -- nor can they be "justified" by -- the increased production costs. Quite the opposite is the case. High costs are a consequence of high prices and profits.

Indeed, costs in other energy industries, such as coal and uranium, also have reflected this influence. What the United States has gotten for the high prices and profits in the oil industry is a very high-cost energy industry. Higher costs do not yield more oil and gas. On the contrary, some projects that were announced a year or two ago have been cancelled because the industry's higher costs have rendered them uneconomic even at today's high prices. This helps to explain the recent decline in drilling. It also explains why the development of oil from shale and tar sands and of gas from coal has stalled.

This analysis implies that it may be futile to try to generate the capital needed for future energy development in advance through high energy prices now. This approach will only increase the amounts of capital needed. The capital needed can be generated through the capital markets in response to normally attractive returns without the distortions caused by larger sudden windfalls.

III. THE 1975 PROFITS SLUMP

Table 1 indicates a decline in oil company profits from about 19 percent on equity in 1974 to the 12 percent range in the first two quarters of 1975. Both domestic and foreign returns fell sharply. What has happened to oil profits in 1975?

This decline can be explained by (1) the partial repeal of preferred tax treatment for oil companies in the United States; (2) an increase in OPEC taxation; (3) the decline in inventory profits; and (4) the general business recession. As the next chapter of this report will show, however, the oil profit slump can be expected to reverse itself -- even with continued price controls -- as business recovers from the recession.

The partial repeal of the percentage depletion allowance and limitations on the use of foreign tax credits are expected to raise the industry's tax bill by about \$2 billion this year. Most of these new taxes would be paid by companies within the Chase Manhattan sample of large firms. They would take away less than 2 percent of the 1974 increase in these companies' revenues. As indicated in Table 4, these reforms explain about 2.2 percentage points of the roughly seven-point fall in the rate of return on equity shown in Table 1 for oil companies. Most of the reduction would come in profits from domestic operations, and this would explain much of the drop in domestic returns. For the smaller independent producers, however, these reforms would have a smaller impact.¹

Much of the decline in foreign profits can be explained by the increase in per-barrel taxes on the company-owned share of crude oil from the OPEC countries, but the exact

1. The oil industry still retains significant aspects of its preferred tax status, the most significant of which is permission to write off so-called "intangible drilling costs" in the year incurred instead of amortizing them over the life of a well.

TABLE 4. Contributors to the Decline in Rates of Return on Oil Company Equity from 1974 to First Quarter, 1975

| Cause of Profit Reduction | Approximate Reduction in Return on Stockholders' Equity (percent) | | |
|--|---|----------------|------------------|
| | <u>Domestic</u> | <u>Foreign</u> | <u>Worldwide</u> |
| Repeal of percentage depletion and certain foreign tax preferences | -3.5 | -0.7 | -2.2 |
| Increase in OPEC taxes | 0.0 | -5.4 | -2.5 |
| Decline in inventory profits | -0.6 | -1.7 | -1.1 |
| Decline in output and plant utilization | -0.8 | -0.8 | -0.8 |
| TOTAL DECLINE IN RATE OF RETURN | -4.9 | -8.6 | -6.6 |

amount is very hard to gauge. It is calculated here as a residual after the other more exactly quantifiable items are deducted. It is thus estimated to account for some 2.5 percentage points of the profit decline. As in the case of the U.S. tax changes, mainly the large companies are involved.

Another major change is the reduction of inventory profits in early 1975, as petroleum prices stabilized. This component of profits also is hard to measure but is estimated roughly at \$1 billion in 1974, mainly in the foreign area.² The reduction of these profits accounts for about 1.1 percentage points of the drop in returns.

Fundamentally, however, 1975 earnings have been depressed throughout the world economy by a very harsh recession. As indicated in Table 1, rates of return for other manufacturing are even lower than for oil. Poor business conditions in the oil industry are illustrated by a rate of United States refinery utilization in the first quarter of 84.2 percent. This level is the lowest in nearly two decades except for the period of the Arab embargo and has a serious effect on average costs of production in an industry like oil with large fixed costs. Because utilization already had dropped sharply from the boom year of 1973 to the embargo year of 1974, however, this further decline accounts for slightly less than one percentage point of the profit rate decline since 1974. The influence of depressed output volumes on profits in 1974 was largely disguised by the inventory profits and other windfalls stemming from the sudden leap in oil prices.

2. Datum made available by the Chase Manhattan Bank.

IV. EFFECT ON PROFITS OF ECONOMIC RECOVERY

Oil profits recovered slightly in the second quarter of 1975, and the third quarter began with major increases in product prices, which will be reflected in third quarter returns. Recovery of the economy -- and with it of oil consumption -- would overshadow the adverse factors now affecting profits and bring a marked improvement in the industry's rate of return. In an attempt to gauge the sensitivity of profits to a business recovery, regression analysis was used to relate the rate of return on oil stockholders' equity to crude oil prices and refinery utilization rates for the years 1961-1974. A strong and consistent relationship was found.¹

The statistical analysis implies that an increase in capacity utilization to 90 percent, which would represent a moderate recovery from the depressed rates of 1975's first quarter would increase average returns on oil-company equity to about 14 percent. Full employment utilization rates of 96 to 97.5 percent would raise average rates of return to around 16 percent. Such a level would be highly attractive by any past measure. It would contribute over \$4 billion to after-tax profits and could permit the industry to raise substantial new equity and borrowed capital to finance its investments.

This analysis indicates that, if the economy were operating at normal levels, oil profits would be quite high. Thus, much of the 1974 windfall still lies latent in the industry. When business picks up again, profits will be more than adequate to attract investment. These conclusions are based on oil prices of early 1975 and do not encompass the effects either of the President's tariff or gas price decontrol.

1. This relationship is:

$$\text{Percent Return} = -15.4 + 2.4 \times \text{Crude Price} \\ + 0.31 \times \text{Percent Refinery Utilization}$$

The coefficients are highly significant (t statistic = 3.0 and 2.4 respectively).

V. EFFECTS ON PROFITS OF OIL PRICE DECONTROL
AND OPEC PRICE BOOSTS

Even after removal of the oil import duty, decontrol of oil prices when fully passed through would add some \$13 billion to annual company revenues for oil and natural gas liquids already being produced. As indicated in Table 5, the concomitant increase in prices of coal and unregulated intrastate natural gas would raise the jump in revenues to some \$16.7 billion. Part of the gain on coal would go to firms outside the oil industry. Table 5 assumes that the price adjustment would be completed by the beginning of 1976.

In addition, however, an increase in world oil prices by the OPEC cartel has been indicated for October 1. Its impact on United States prices would be magnified by decontrol. An OPEC increase averaging \$1.50 per barrel would boost annual company revenues from United States domestic production by \$5.5 billion if controls are lifted and by \$3 billion less if controls are retained. Including the response of natural gas and coal prices to such an OPEC move and the passthrough of higher costs of imported crude oil and products, United States producers' revenues would soar by a total of \$29.5 billion. Of this, \$3.6 billion would be channeled through to OPEC. The boost in retail prices of gasoline and other oil products would average about eight cents per gallon.

The 1976 revenue windfall on domestic oil under these assumptions would be 85 percent greater than in 1974, and windfalls on all three primary fuels would be some 70 percent greater than in that year. About five-sixths of this windfall would be traceable to the lapse of domestic price controls. Clearly the oil industry benefits handsomely from OPEC price increases, especially with decontrol.

It must be re-emphasized that this increase in revenues is based almost entirely on United States domestic production. The component traceable to the passthrough of higher foreign crude-oil prices and taxes is only

TABLE 5. Estimated 1976 Company Revenues from Oil Pricing Actions

| Policy Action | Oil & NGL's* | Natural Gas | Coal | Totals |
|--------------------------------|--------------|-------------|-------------|-------------|
| Old Oil Decontrol ^a | 15.2 | 4.2 | 3.7 | 23.1 |
| Tariff Removal | - 2.2 | -2.3 | -1.9 | - 6.4 |
| | <hr/> | <hr/> | <hr/> | <hr/> |
| SUB-TOTAL | 13.0 | 1.9 | 1.8 | 16.7 |
| | | | | |
| \$1.50 OPEC Price Boost | | | | |
| On Domestic Production | 5.5 | 1.9 | 1.8 | 9.1 |
| Passthrough of Import Costs | <u>3.6</u> | <u>n.a.</u> | <u>n.a.</u> | <u>n.a.</u> |
| | | | | |
| TOTAL | 22.1 | 3.8 | 3.6 | 29.5 |

a. Assuming tariff removal.

* Natural Gas Liquids

\$3.6 billion and plays a much smaller role in the domestic accounts than that described for 1974 above. Some \$25.9 billion will be paid for domestically produced fuels. Of this, probably some \$23.5 billion would rebound to the oil and gas industry.

Presumably, one-sixth of the rise in domestic crude fuel revenues (circa \$4.3 billion) would be paid to royalty recipients. An allowance for a 10 percent increase in the variable costs of domestic operations in 1976 could claim another 22 percent of this rise in revenues. Capital recovery allowances and taxes other than Federal income taxes would take about 7 percent, making total cost increases absorb about 45 percent of the revenue gain.

These expenses, however, would leave some \$14 billion to add to before-tax corporate profits, not counting any royalties that may be paid to corporations. It should be noted that the rise in royalties and part of that in variable business costs represents a windfall gain to the landlords and suppliers of oil firms. More is said on this in Chapter VII.

The effective corporate income tax rate on the increase in oil company profits depends heavily on the extent to which they are "plowed back" into investments in oilfield exploration and development, a large portion of which can be deducted from taxable income. Industry-wide domestic investments in 1974 are estimated to have been about \$16.5 billion. Some \$6.5 billion of these were invested in crude oil exploration and development (not counting lease bonuses), an increase of 30 percent over 1973. About 70 percent of this oilfield investment was "expensed", i.e., deducted in calculating taxable income.

If investment in domestic exploration and development grows by 50 percent in 1976 in response to decontrolled prices and windfall profits, the increase over estimated 1975 levels would be about \$4.25 billion, excluding lease bonuses. If this amount of oilfield investment materialized with an "expensible" share of 70 percent, then the

effective Federal corporate tax rate on the windfall profit after allowance for the remaining applications of percentage depletion would be about 35.6 percent.¹ In absence of a windfall profits tax, therefore, this tax rate would leave \$9 billion of the windfall in after-tax corporate profits. Over \$8 billion would benefit oil companies.

This after-tax windfall would boost the industry's domestic rate of return by about 12 percentage points and its worldwide return by perhaps 7 percentage points. It could easily put the after-tax rate of return in the domestic oil and gas industry near 25 percent in 1976 and above this level in 1977. For the crude production segment of the industry, profits would go much higher yet. It should be recalled that this calculation of windfalls to oil companies excludes the windfalls to royalty holders, suppliers, employees and others.

The increase in oilfield investment spending in 1974 was accompanied by a roughly 25 percent jump in drilling costs. Costs have continued to rise rapidly since then. The large new infusion of capital outlays postulated here would renew the inflationary pressure on oil input costs. On the other hand, if the costs at which inputs can be profitably employed are limited by the price of new oil, one would expect investment spending to be curtailed as costs exceed these limits. Costs may not be far from such limits for some projects. Indeed the price of new oil would be slightly reduced through the assumed tariff removal.

Thus, the big surge in oilfield costs of 1974 may not be repeated. If the input cost increase turns out to be smaller in 1976 than in 1974, or if investment spending is curtailed, then a larger share of the revenue than estimated above would remain in the profits of the crude fuel producers instead of being spread among their suppliers.

1. The nominal corporate tax rate is 48 percent.

Under these conditions, it may be literally true that the increased profits cannot be attractively reinvested in the petroleum industry, because the supply of inputs is physically limited and their prices are limited by economic factors. If this is so, it would imply that much of the windfall might be invested in outside, non-oil activities, leading to the formation of oil-based conglomerate firms playing an enhanced role in other sectors of the economy.

VI. CAN ENERGY CAPITAL REQUIREMENTS BE MET?

Projections of the massive funding required to reach certain energy output objectives have caused some observers to conclude that higher oil prices or more generous tax policies for oil companies are warranted to meet those objectives. These conclusions seem to be based on fallacious or incomplete analysis.

First, it is important to separate out the capital needs of the electric utilities, which frequently are combined with those of the other energy industries. In a comprehensive study of energy capital requirements in the United States for 1971 to 1985, Hass, Mitchell and Stone estimated that 53 percent of the projected total requirement of \$679 billion would be needed by the electric utilities. Some \$225 billion were projected for oil production, processing and marketing (and natural gas production).¹ The two sectors should be considered separately because utilities face problems of regulation and legal obstacles to debt financing not faced by the primary fuel industries.

Second, many of the investment projections have been presented as cumulative estimates for a number of years, often stated in prices including future inflation. To be made comprehensible, such projections must be restated in terms of the annual growth rates of real investment required to meet them. Clearly our economy's capacity to fund real investment will grow substantially in the next decade, and that of fuel-extraction industries presumably will grow faster. Their ability to fund investment in money terms will reflect the inflation that occurs. This restatement of investment forecasts will be carried out below.

Third, it is fallacious to suppose that investment in a rapidly growing industry should be financed internally

1. Jerome E. Hass, et alii, Financing the Energy Industry, (Ballinger: Cambridge, Massachusetts), 1974, p. 3.

through retained profits and capital recovery allowances. A sector experiencing rapid growth and the above-average earnings of the primary fuels industry is in a good position to obtain both new equity and borrowed capital. With an average 1974 debt-equity ratio of about 0.4, the oil industry can borrow \$1 billion for each \$2.5 billion increase in equity without affecting the ratio. In 1974, this would have supported roughly \$3.4 billion of new borrowing by the domestic industry. In a phase of rapid expansion, moreover, the debt-equity ratio might be expected to rise, and each percentage point increase in 1974 would have meant borrowings of circa \$650 million.

On this subject, Hass, et alii concluded that:

There is no apparent justification for arguing that the petroleum industry needs to . . . generate the necessary funds internally by charging higher prices or obtaining additional tax relief (emphasis in original).²

Hass and his co-authors evaluated the forecasts of investment requirements for oil and gas made by the National Petroleum Council, the Chase Manhattan Bank, Bankers Trust and the First National City Bank of New York. Standardized in coverage to include petroleum marketing but to exclude natural gas pipelines and distributors, these estimates indicate investment needs in 1970 prices, for the years 1972 through 1985, ranging from \$187 billion (Chase Manhattan) to \$215 billion (National Petroleum Council). These projections are based on a 1985 output objective for the United States of 12.3 million barrels of oil per day and 22.5 trillion cubic feet of gas per year.

Breaking these massive sums down into annual components reveals that the upper end of this range could be realized in annual installments rising to some \$11 billion in 1974 and growing thereafter at a compound rate of about 7 per cent through 1985. Achievement of the National Petroleum

2. Ibid, p. 5.

Council's most ambitious objective for oil import reduction would require investments in 1970 dollars rising to \$11.4 billion in 1974, growing at 7.5 percent through 1985.

The Chase Manhattan Bank, taking account of the shift in national objectives toward greater energy independence, recently has raised its estimates of needed investments, mainly in oilfield exploration and development, by \$55 billion. This would place Chase's maximum estimate on a comparable basis at \$252 (in 1970 dollars) for development of about 20 million barrels per day of crude oil production capacity by 1985. Achievement of this investment level would require growth from the same 1974 level at 8.5 percent per year.

Of course the costs of investment goods for fuel production and processing have risen sharply since 1970. Thus, one may inquire what funding the above facilities expansion would require if stated in 1974 prices. Commerce Department figures indicate that the unit cost (GNP deflator) for nonresidential fixed investment goods rose by 22 percent from 1970 to 1974. Probably the cost of oil and gas processing plants went up by somewhat more. The cost of drilling oil and gas wells, where the increase has been the greatest, rose over this period by 53 percent.³ This high rate of inflation applies to only part of the total oil industry investment.

If we assume, therefore, that the average cost of investment goods in the petroleum industry went up by 40 percent, then the 1974 levels of investment in 1970 dollars used as a base in the discussion above (\$11.4 billion) would translate to slightly less than \$16 billion in 1974 prices. Preliminary estimates of 1974 dollar investments in the United States petroleum sector are as much as \$1 billion higher than this amount. Thus, real investments in 1974 were ahead of the schedule set by

3. Cf. the index of drilling costs compiled by the Independent Petroleum Association of America, Washington, D.C.

Hass to meet national investment goals, and future growth of real investment (7 to 8.5 percent compounded) would fulfill the investment targets for through 1985.

For 1976, these growth rates would mean an increase in domestic investment spending by \$1.2 billion to \$1.4 billion. This would comprise only one-sixth of the after-tax windfall projected to ensue from oil price decontrol and OPEC actions in Chapter V. Hence oil price decontrol clearly is not needed to finance oil investment requirements.

Another test of the effect of cost inflation in the petroleum industry on the feasibility of the projected investments is a comparison of cost increases with indices of the industry's financial capacity. As costs have risen, so have the income and assets of the industry with which to meet these costs and to attract the needed outside capital. If both costs and the industry's financial capacity have risen equally, these increases would comprise a pure inflation with no effect on the fraction of the trend level of real investment covered by internal sources. If inflation in the oil sector proceeded faster than in the economy at large, then the demands of the oil sector for outside financing relative to the supply of funds in the capital markets might increase. On the other hand, if oil's financial capacity has grown relative to its input costs, then the industry's need to resort to the public capital markets to finance trend levels of investment could be less. Recently this latter situation appears to have applied.

It was concluded above that the costs of oil investment goods rose by perhaps 40 percent from 1970 to 1974. The net income of the 28 oil companies for which financial data are compiled by the Chase Manhattan Bank rose by 149 percent, and their internal cash flow rose by 98.5 percent. At least through 1974, therefore, it is clear that the financial capacity of these oil companies has increased by much more than the increase in the costs of producing and processing oil. Thus, the added financial resources can help to finance the needed increase in real investment above its historical trend.

Table 6 indicates that despite public emphasis on high levels of investment and capital requirements, worldwide capital outlays and exploration expenditures of 10 major oil companies fell short of utilizing their internal cash flow by \$3.4 billion in 1973 and \$1.7 billion in 1974. In addition to capital investment, of course, funds are needed for working capital and dividends to stockholders. Nonetheless, this comparison makes it appear that the industry's external capital requirements were relatively light.

Viewing the division of capital investment and cash flow between the United States and foreign areas in Table 6, one sees the capital outlays overseas (\$5.1 billion) trailed funds generated internally in foreign operations by over 30 percent. Investment in the United States, on the other hand, exceeded domestic cash flow by about 10 percent. Thus, part of the foreign cash flow, in effect, was transferred to the United States, reflecting the relative attractiveness of the United States for energy investment. Even in the presence of price controls, investment in new United States oil production is potentially more profitable than elsewhere because of the high new oil price, the low United States tax rates on oil and gas incomes, and relative political security.

In conclusion, therefore, the 7 to 8.5 percent growth in real investment, calculated to be required to achieve substantial oil import reduction, is challenging but should be well within the capacity of the well-endowed oil industry without new windfall profits or additional tax favors.

Indeed, the question should not be how to inject more money into this industry but rather how to induce the physical expansion of its supplier industries rapidly enough to provide the desired equipment at reasonably stable prices. If the financial capacity of the oil sector substantially outstrips the physical capacity of its suppliers, the result will not be more oil but simply higher costs and more diversion of oil profits to nonoil activities.

TABLE 6. Cash Flow and Investment Data for
Ten Major Oil Companies, 1973 and 1974

| Area/Account | 1974 | 1973 | Change | |
|--|------------|------------|------------|---------|
| | Billion \$ | Billion \$ | Billion \$ | Percent |
| <u>Worldwide</u> | | | | |
| Internally Generated | | | | |
| Funds of which, | 16.2 | 12.9 | 3.3 | 26 |
| After-Tax Profit | (9.5) | (7.3) | (2.2) | 30 |
| Capital Recovery | (5.0) | (4.4) | (0.6) | 14 |
| Exploratory Write-offs | (1.6) | (1.2) | (0.4) | 33 |
| Capital Outlays and Exploration Expense | 14.5 | 9.5 | 5.0 | 53 |
| <u>United States</u> | | | | |
| Internally Generated | | | | |
| Funds of which, | 8.6 | 6.2 | 2.4 | 39 |
| After-Tax Profit | (4.4) | (3.0) | (1.4) | 47 |
| Capital Recovery | (3.3) | (2.6) | (0.7) | 27 |
| Exploratory Write-offs | (0.9) | (0.6) | (0.3) | 50 |
| Capital Outlays and Exploration Expense | 9.4 | 5.4 | 4.0 | 74 |
| <u>Foreign</u> | | | | |
| Internally Generated | | | | |
| Funds of which, | 7.5 | 6.4 | 1.1 | 17 |
| After-Tax Profit | (5.1) | (4.3) | (0.8) | 19 |
| Capital Recovery | (1.7) | (1.6) | (0.1) | 6 |
| Exploratory Write-offs | (0.7) | (0.5) | (0.2) | 40 |
| Capital Outlays and Exploration Expense | 5.1 | 4.1 | 1.0 | 24 |

Sum of components may not equal totals due to rounding

Source: Senate Finance Committee, "1974 Profitability of Selected Major Oil Company Operations," June 1975; also Senate Finance Committee, "Profitability of Selected Major Oil Company Operations," December 1974.

VII. WINDFALL TAXES AND CONSUMER REBATES

Sharply higher energy prices mean new revenues to the energy industries so large that they cannot be promptly respent. Concomitantly, these price boosts reduce the real disposable income of consumers, curtailing retail sales. In particular, they cause decline and displacement in sectors, such as auto manufacturing and air transportation, in which sales are sensitive to energy prices. This raises questions of adapting fiscal policy to cushion the income distribution effects of higher energy prices as well as their depressive effects on business.

A number of windfall profits tax formulas and rebate proposals have been considered for this purpose since early 1974. They take the form of excise taxes on the increase in crude oil prices and are designed to phase out over five years or more. The latest version was devised by the Senate Finance Committee in July.¹ The analysis below illustrates the application of this formula and its adequacy in redistributing the windfall stemming from decontrol and an OPEC price increase.

The Senate Finance Committee's proposed "deregulation and windfall profits tax" applies to revenues from old oil above a base price of \$5.25 per barrel plus one-half percent per month for each month of the tax. The volume of old oil to which it applies declines at 1.5 percent per month. The nominal tax rate is 90 percent. A similar formula applies to uncontrolled oil priced at over \$11.50 per barrel. This double-phaseout formula reduces the tax burden at a somewhat accelerated initial rate with final expiration after 66 months. A 25 percent tax credit is allowed for monies "plowed back" into oilfield investments (excluding lease bonuses). If this credit is fully exploited, it reduces the effective tax rate to 67.5 percent. For the following analysis, a similar tax formula is applied to natural gas liquids. Windfalls on natural gas and coal would go untaxed.

1. Senate Amendment No. 854, introduced by Senator Long, July 31, 1975

In contrast to Chapter V above, which estimated the windfall remaining in oil company profits, this chapter is concerned with the total windfall, including that re-doubling to royalty recipients, oil company suppliers, contractors and employees. In this chapter, therefore, the increase in per-barrel royalties is not deducted as a cost but is considered part of the windfall (and taxed accordingly). Allowance is made for variable cost increases only at the rate of the projected 1976 cost increases for the economy as a whole. This rate is gauged by the GNP deflator, which is projected to rise at about 7 percent.² Any increase in oil company costs exceeding this amount is considered to be a part of the windfall that "trickles down" from oil company revenues to their suppliers of inputs. The increase in capital recovery and in taxes, of course, is deducted in full.

Table 7 shows the calculation of projected 1976 windfalls from primary fuel revenues. First, the estimated normal cost increases are deducted, excluding windfalls to input factors as explained above. Then the estimated Federal taxes on the increased revenues are deducted. The windfall profits tax, as noted above, is calculated on the increase in primary fuel prices. The windfall remaining after this tax and other deductible cost increases is subject to normal Federal income tax. The effective income tax rate, as described in Chapter V, depends on the amount of plowback investment and the immediate tax write-offs it generates.

There is no reason to assume that the plowback credit will generate investments equal to the credit, because many firms will be able to take the maximum credit at their pre-existing investment rates. For these firms, the credit is a pure tax loophole with no effect. Some operating firms, moreover, will be able to utilize the plowback investment of royalty recipients in so-called

2. This Joint Economic Committee Staff estimate coincides with that presented by the chairman of the Council of Economic Advisers, in testimony before a House Budget Committee Task Force, September 11, 1975.

TABLE 7. Estimation of 1976 Windfall from
Oil Price Increases after Costs and Taxes
(billions of dollars)

| Category of Revenues, Costs or Taxes | Old Oil Decontrol | Pricing Actions ^a | |
|---|----------------------|------------------------------|------------------------|
| | | \$1.50 OPEC Decontrol | Plus OPEC Increases |
| Increase in Domestic Primary Fuel Revenues ^b | 16.7 | | 25.9 |
| Minus: Nonwindfall increases in Cost | 5.2 | | 5.2 |
| Minus: Increase in Federal Taxes | | | |
| Windfall Profits Tax ^c | 8.7 | 11.2 | |
| Regular Income Tax ^d | <u>0.3</u> | <u>3.0</u> | |
| TOTAL | 9.0 | | 14.2 |
| Equals: Primary Fuel Windfall after Costs & Taxes | 2.5 | | 6.5 |
| Plowback Investment | 2.9 | | 3.7 |

a. Tariff removal is assumed in each case.

b. Including natural gas liquids.

c. Based on Senate Finance Committee formula (Senate Amendment 854, introduced July 31, 1975) with allowance for natural gas liquids.

d. Based on added income to all recipients after deduction of windfall profits tax and of nonwindfall costs.

"qualified plowback stock" simply as a substitute for other sources of finance investments they would have made anyway. However, some firms will need to increase investments to obtain the full credit, and many new investments may be made simply in response to the windfall funds. In fact, some good research to estimate the investment response to the plowback provision is badly needed.

Despite these reservations, it is assumed here for illustration that the added investment from the windfall revenues will equal the maximum plowback credit in each case. Whether a result of the credit or not, about seventy percent of this amount can be deducted before calculating the income tax. The corporate income tax rate, adjusted for percentage depletion, is then applied to the remaining taxable income.

With domestic decontrol and tariff removal but no increase in world oil prices, the tax system -- including the windfall profits tax -- would leave some \$2.5 billion (15 percent) of the initial revenue increase in the hands of its recipients even after covering normal cost increases (see Table 7). With an increase in world prices of \$1.50 per barrel, however, over \$6 billion (25 percent) of the revenues would remain after taxes. The assumed plowbacks, while somewhat reduced from the \$4 billion level postulated in Chapter V, still represent estimated increases above 1975 oilfield investment of 36 and 46 percent respectively (net of lease bonuses). Plowbacks of this magnitude certainly would cause major new inflation of oilfield costs and greatly exceed the real 1976 investment requirements indicated in Chapter VI for the entire industry from oilfield to gas station pump.³

Table 8 shows the costs to consumers of oil price increases. The primary fuel cost pass-through to consumers

3. It may be noted that a plowback provision, if effective, would increase concentration in the oil industry by favoring investment by firms in proportion to their present oil production.

TABLE 8. Consumer Costs, "Ripple Effects" and Rebates
(billions of dollars)

| Category of Revenues, Costs or Taxes | Pricing Actions ^a | |
|--|------------------------------|--|
| | Old Oil Decontrol | Decontrol Plus \$1.50 OPEC Increase |
| Consumer Costs | | |
| Primary Fuel Cost Passthrough | 12.4 | 24.6 |
| Total Including "Ripple Effects" | 18.6 | 36.9 |
| Consumer Rebate | 12.3 | 12.3 |
| Increase in Sellers' Revenues with 50 Percent "Ripple Effect" | 22.5 | 38.2 |
| On Primary Fuel Revenues | 9.0 | 14.2 |
| On "Ripple Effect" | <u>2.6</u> | <u>5.5</u> |
| Total | 11.6 | 19.7 |
| Windfall After Taxes | 10.9 | 18.5 |

a. Tariff removal is assumed in each case.

b. Excluding excise taxes.

Note: Sum of components may not equal totals due to rounding.

differs from the change in producer revenues on domestic fuels primarily by the change in import costs through removal of the duty and any OPEC price boost. In these examples, the cost to consumers is less. The primary fuel cost passthroughs to consumers in Table 8 signify per-gallon increases for oil products of about 4.5 cents for old oil decontrol and 8 cents with the OPEC price increase.

Experience has shown, however, that the pass-through of primary fuel costs will create secondary or so-called "ripple effects" on processors' and distributors' margins and on prices of substitutes for energy-intensive goods. Therefore, Table 8 also shows secondary costs to consumers half as large as the primary-fuel cost increases. This is a conservative estimate of the secondary effects. This reaction would occur with some delay.⁴ The table also indicates the effect of secondary price increases on sellers' revenues and on Federal tax collections. This secondary element has the nature of a windfall but is subject only to normal income tax and not to windfall profits tax. For this reason, inclusion of ripple effects greatly increases the share of the windfall remaining to its recipients after taxes.⁵

4. One analysis of the data for the past two years has concluded that "ripples" have amplified the impact of the original fuel price passthrough by as much as 90 percent. Cf. memorandum of September 2, 1975, from the Congressional Research Service to Senators Edward M. Kennedy and Ernest F. Hollings entitled "Post-Embargo Macroeconomic Impact of Energy Price Increases." Virtually all independent analysts include substantial ripple effects in their forecasts.

5. One reason to use a relatively conservative estimate of the ripple effect here is because it is not appropriate to regard as a windfall the defensive gains of wage earners trying to keep pace with rising costs or the price spiral stemming from these. This element usually is included in the ripples.

The consumer rebate in the Finance Committee proposal is stipulated in absolute amounts per person without regard for the actual oil price change. Apparently it was formulated with a wellhead oil price of \$13.50 in mind. The U.S. wellhead price would reach roughly that level after removal of the tariff and imposition of a \$1.50 boost in world prices by OPEC.

As Table 8 shows, the proposed consumer rebate would be insufficient in either case to cover even the boost in primary fuel costs not to mention the secondary "ripple effects." The bigger the OPEC price increase, the greater the shortfall. With a boost of \$1.50 in world prices, the rebate would fall short of fuel price rises by \$12.3 billion and of the projected total cost increases by an alarming \$24.6 billion. It would cover only one-third of the consumer's added burden

The United States economy already is weak, and its recovery from a deep recession is proceeding slowly. It is imperative therefore to relate the rebate to the rise in consumer costs or to grant other tax cuts in addition. To the extent that higher energy investments due to the windfall mean greater current productive activity, they may offset part of the need to cut taxes as an economic stimulant. To the extent that they result only in longer order books for suppliers or higher prices for an unchanged output, they would not offset it. The latter case clearly applies, furthermore, to higher government outlays for higher-priced fuel.

With an OPEC price boost of \$1.50 per barrel, a tax cut of at least \$20 billion would be needed in addition to the proposed rebate. The projected Federal budget, however, already is about \$70 billion, and this tax cut would push it to \$90 billion. The loss of the oil tariff revenues plus higher government outlays for its own fuel procurements will increase this deficit to some \$97 billion. Without the OPEC price boost, a tax cut of \$6 billion would be needed in addition to the rebate, raising the projected deficit to \$83 billion. It is impossible to offset this deficit substantially through increased taxes on the windfall income because of the infeasibility of special taxes on the secondary windfalls.

Such enormous increases in the Federal deficit would be unacceptable to most people at the present time, especially when it would serve only to offset the effects of oil decontrol without accelerating the projected sluggish recovery of the economy.

In conclusion, decontrol of United States oil prices, especially in the event of a world price increase, will involve either a heavy drag on the economy or a very large increase in the Federal deficit to offset this drag. The Senate Finance Committee's proposed windfall profits tax and consumer rebate does not begin either to capture the windfall to sellers in such a case nor to sustain consumer purchasing power.

VIII. ALTERNATIVES TO A WINDFALL PROFITS TAX

A straightforward means of limiting and offsetting the windfalls and consumer costs associated with decontrol of "old" oil would be through a corresponding ceiling on the price of "new" oil. A ceiling on new oil prices at an appropriate level could obviate the need for the large tax cuts and increases in the Federal deficit found in the previous Chapter to be a necessary accompaniment for decontrol. They also could obviate the need for a windfall profits tax. A ceiling on new oil prices also could stem the rise in oilfield costs.

Each dollar's reduction in United States domestic crude oil prices (including NGL's) would reduce producer windfalls and consumer costs by approximately \$3.6 billion per year when passed through under price controls to the prices of oil products. In addition, it would obviate some \$2.5 billion in payments for natural gas and coal. If the ceiling precludes the corresponding ripple effects, each \$1.00 reduction in the price of domestic oil would reduce consumer costs by about \$9 billion.

Both the Senate and the House of Representatives have passed bills adopting this approach to oil prices. The Senate measure provides a ceiling at \$11.28 per barrel, and the House version limits new onshore conventional oil to \$7.50 per barrel but allows \$10 per barrel for oil from enhanced recovery methods and from offshore or other remote places. It now remains to compromise the two proposals in a conference. If each dollar's reduction in oil prices means a \$9 billion cut in consumer costs, it is evident from Table 8 that the Senate's ceiling remains too high.

It is the judgment of the Committee staff, moreover, that future regulation of oil prices should make allowance for a substantial narrowing of the disparity between the high prices of oil, coal and intrastate natural gas on the one hand and the lower prices of federally regulated interstate natural gas on the other. This disparity has resulted in a massive diversion of drilling and production

equipment from gas to oil production and of supplies of gas from the interstate to the intrastate market.

In setting a ceiling price for oil, therefore, the conferees also should take account of the possibility of a concomitant increase for interstate gas and the revenues flowing from this. Coordinated action on oil and gas could permit an adjustment of gas prices at less net cost (or no net cost) to energy consumers on average. Such joint action could reduce the present discrimination against users of oil compared to those of gas and the corresponding discrimination between producers of these fuels.

There will be concerns that the proposed oil price ceiling would curtail the incentive to search for new oil. It is estimated, however, that drilling costs have increased by about 50 percent in the past two years while new oil prices have risen over threefold. Although the proposed ceiling might discourage production from marginal strikes, it would not blunt the strong incentive to undertake the key part of the oil operation, namely the exploratory wells, and it would not suppress the incentive to produce from most finds. It seems clear, moreover, that an increase in the price of interstate natural gas would yield greater dividends in both output and conservation than prices above the proposed ceiling for oil.

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