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**Working Paper**

## Federal Taxation of the Petroleum Industry a Description of Incidence and Policy Implications

Staff Paper, No. SP 75-04

**Provided in Cooperation with:**

Charles H. Dyson School of Applied Economics and Management, Cornell University

*Suggested Citation:* Flaim, Silvio J. (1975) : Federal Taxation of the Petroleum Industry a Description of Incidence and Policy Implications, Staff Paper, No. SP 75-04, Cornell University, Charles H. Dyson School of Applied Economics and Management, Ithaca, NY, <https://doi.org/10.22004/ag.econ.184824>

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**CORNELL**  
**AGRICULTURAL ECONOMICS**  
**STAFF PAPER**

FEDERAL TAXATION OF THE  
PETROLEUM INDUSTRY  
A DESCRIPTION OF INCIDENCE AND  
POLICY IMPLICATIONS

BY

Silvio J. Flaim

March 1975

No. 75-4

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FEDERAL TAXATION OF THE  
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Direction of this study has been most helpfully guided by L.D. Chapman. His contribution to policy considerations has provided the impetus for this work and the need for a more critical analysis in the future. William Gifford provided critical evaluation of the specific tax treatments and their incidence. This paper would not have been possible without the editorial assistance of Kathy Cole. Any mistakes must, of course, remain those of the author.

This work has been supported by the National Science Foundation, Rann Program Grant G.I. 41470 to Cornell University. Any opinions, findings, results or conclusions expressed herein are those of the author and do not necessarily reflect the views of the National Science Foundation or Cornell University.

## FOREWARD

This paper is one of a series of analyses concerning the impact on energy use and environmental quality of federal tax policy and energy industry structure, and is sponsored by the National Science Foundation RANN Program through Grant GI 41470. The paper is not analysis in the conventional meaning in economics: it does not examine individual, corporate, or government behavior in response to tax policy. It is an exposition of the provisions of federal income tax legislation which apply to petroleum and natural gas companies, and as such may be of interest to economists and others interested in these questions.

Three points made in the paper deserve special emphasis. One is the suggestion that corporate income tax payments by energy companies are essentially discretionary, in that these provisions provide a setting for corporate tax policy to determine both the magnitude and timing of tax payments. Of equal interest is the author's summary of Gravelle's work, which concludes that elimination of the percentage oil depletion allowance by itself would not have a significant effect on effective tax rates on foreign income if the other provisions remain unchanged. Considering both domestic and foreign income, it is possible that this allowance could be eliminated in 1975, and total tax subsidies in 1975 could exceed those in 1973. Finally, Flaim concludes his discussion by proposing that corporate income tax returns should become public information; that only through this means can sufficient information be obtained to address the major economic questions.

Duane Chapman

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## Abstract

Excess tax deductions or credits are generally regarded as subsidies. Their nature and extent, particularly as they apply to the oil industry, are not fully known, and the rationale underlying these provisions has been tested only superficially. This paper presents various aspects of the federal income tax and their incidence on foreign and domestic source incomes from oil and gas.

This paper is not a complete presentation of tax law as it pertains to oil and gas. It provides, however, a background for understanding many of the special tax provisions peculiar to oil. Selected tax deductions are reported according to their impact on different adjusted income groups for individuals within the U.S. Comparisons of tax deductions by industry and estimates of magnitude are also cited. Objectives of tax planning are made apparent, and the utilization of these special provisions by the oil industry is evaluated.

Preliminary results of the Cornell Energy Industry Study Group indicate several shortcomings in their present data. Generally, the disclosure of tax activity by company, country, and operation is not revealed. Since intra-industry analysis suggests significant non-price competition in the form of tax planning, a large portion of industry activity is still not clear. Due to the complexity of the multiple corporate structure and preference tax treatments, the magnitude of income tax payment appears to be largely at the discretion of the taxpayer.

To permit a thorough analysis of the oil industry's structure, conduct, and performance, additional tax data is essential. Coupled with data presently under examination by the Study Group, this further information could help detail the most pragmatic approaches to the inter-related problems of Federal taxation, industry behavior and energy use.

### I. Tax Concepts, Objectives, and Terminology

#### A. Concepts and Objectives

Federal corporate income taxation has several purposes, and perhaps the one most widely recognized is that of financing government expenditures. In 1974, for example, the \$49 billion the federal government received from corporate profits taxation was 24% of its gross revenues (excluding social insurance taxes).

A second objective of these taxes is to promote national economic policies. The corporate income tax is generally seen as an economic stabilizer, in that it may decline rapidly in a period of recession and increase rapidly in an inflationary period. Two special provisions of the income tax are intended as stimuli to growth: the accelerated depreciation allowance and the investment tax credit. These provisions, providing tax reductions for investment expenditures, are believed to have a multiplier effect on employment, gross national product, and income.

A third objective is the achievement of specific national objectives related to national security and resource conservation. Those tax provisions

bearing specifically on energy corporations are viewed in this context, and there is major controversy surrounding the general question of the relationship between the specific tax provisions and national objectives.

Another objective of income taxation is equity, the fair distribution of the tax burden. Horizontal equity requires imposing similar burdens on people in similar circumstances, and vertical equity requires creating an appropriate differential of burdens for people in dissimilar circumstances. Concern for the concept of equity pervades tax law and its historical development. Redistribution of income is a corollary of the equity concept. The graduated rates of the personal income tax are based on the assumption that the more wealthy should bear a larger portion of the tax burden. In the context of petroleum company taxation, the equity objective leads to consideration of whether effective taxes are reasonable with respect to other industries as well as with respect to personal income taxation.

Finally, none of the other tax objectives can be well achieved unless the tax imposed is capable of being administered in a reasonably fair and efficient manner. Automatic tests for tax liability are easily administered but often provide statutory loopholes for exclusion.

All of the objectives of taxation mentioned above are taken into consideration (though some less than others) in the formulation of statutory law and making judicial rulings.

#### B. Tax Terminology

To facilitate explanation, it is necessary to define some common tax terms. The tax base (or taxable income) on which the income tax is imposed is defined as gross receipts minus allowable deductions. Deductions are usually thought of as providing a government subsidy for the deductible expenditure itself. They offset gross income at the taxpayer's marginal rate of tax. In certain circumstances, the statutes allow a credit rather than a deduction for an expenditure. A credit is subtracted from the tax otherwise payable, giving the taxpayer a dollar per dollar reduction in tax equal to the amount of the allowable credit.

Capital gains, loosely defined, are gains derived from the appreciation of capital assets. There are provisions stating when gains are or are not recognized, but the long-term capital gain rate is roughly half the taxpayer's marginal rate or 25 percent, whichever is less. There are two types of capital gains--long-term and short-term--and their tax consequences differ considerably. Long-term capital gain treatment generally provides a favorable tax treatment. Gains on the sale of any asset (or its disposition) is the amount realized minus the taxpayer's basis. "Basis" is usually cost but there are important exceptions. The basis is adjusted under certain rules which usually apply to costs incurred in obtaining or maintaining the asset. Capital gains are of such importance that a more detailed section will follow.

Basic tax theory defines taxable income as gross income (or gross receipts) less business expenses and certain deductions. Business expenses are to be distinguished from deductions. Business expenses are defined as the costs of

doing business (costs of goods sold, wages, salaries, rents, interest, etc.); and non-cost deductions are viewed as subsidies. Musgrave summarizes this point: "It seems of greater practical usefulness to define a subsidy as any government payment (in cash or in kind) which confers its benefits in a selective way based on particular sources or uses of income. Ordinary purchases of goods and services by the government in the market at market prices are excluded."(1)

Government purchases in the market at more than the market price are subsidies, to the extent of the price differential. Direct cost-reducing payments to producers and consumers, like FHA or student loans, are subsidies similar to such government purchases and should be regarded in much the same way even though implementation of the two types of subsidies differs considerably.

Generally government subsidies are given for those activities which produce social externalities (or social benefits). Ideally, cost should be less than the value of benefits gained, and the level of subsidy should be that which has incremental benefit equal to incremental cost. Problems arise if subsidies are considered in this context as social costs and benefits are difficult to identify and even more difficult to quantify.

Subsidies like student loans, low cost housing loans, or investment credits, for example, can be used to encourage consumption. Other types of subsidies can be used to encourage activities like anti-pollution programs or the exploration and development of vital resources. In either case social externalities can be subsidized in cash or in kind. Consideration should be given to the efficiency of the alternative ways of distributing subsidies and the consequences of each.

Among these alternatives are tax preferences. A provision which reduces the tax burden on particular sources or uses of income is equivalent to a tax refund and therefore to a cash subsidy.(2) These preferences depart from horizontal as well as vertical equity as they shift the burden of tax. One can discern further departures from equity by considering which income groups own the corporations and who qualifies for the preferential tax treatment.

As in micro-economic analysis one can consider a specific tax in isolation assuming all other things equal. Consideration can be given to the subsidies forgone (i.e., tax expenditures) or paid out and to the distribution of the tax benefits among specific income classes without departing too far from conventional analysis.

To measure the impact of the subsidies as they affect the petroleum industry particular emphasis will be given to the effective tax rate--the actual percentage of net income paid in taxes. Gravelle obtained tax data from 1968 through 1972 from Exxon, Texaco, Mobil, Standard Oil of California, Gulf, Standard Oil of Indiana, and Shell. She found that five of the seven companies paid less than six percent of their net income in United States income taxes for this five-year period but paid between 24.8 and 31.44 percent in income taxes to foreign governments. Effective income tax rates were between 19 and 27 percent. Gravelle further determined that "in 1972 the pre-tax net income of the seven companies combined totalled approximately \$2.9 billion in foreign 'income taxes' and only approximately \$450 million in United States income taxes."(3)



Table 1 gives the effective U.S. income tax rates of all U.S. corporations and of U.S. parents by industry for 1966 and 1970. Inspection reveals that the effective income tax rate for manufacturing is approximately three times that for petroleum when all U.S. corporations are considered. The effective tax rates for petroleum are less than half of those for any other category in Table 1. The reason for this disparity will become apparent.

Table 1 -- Effective U.S. Income Tax Rates of All U.S. Corporations and of U.S. Parents in Sample by Industry

	<u>All Industries</u>		<u>Petroleum</u>		<u>Manu- facturing</u>		<u>Other Industries</u>	
	1966	1970	1966	1970	1966	1970	1966	1970
All U.S. corporations	33.7	33.2	13.2	12.0	38.8	37.9	31.1	35.2
U.S. parents in sample	39.2	38.5	17.2	20.3	43.1	43.0	43.0	41.5

Source: Robert B. Leftwich, "U.S. Multinational Companies: Profitability, Financial Leverage and Effective Income Tax Rates," Survey of Current Business, Vol. 54, No. 5, Part 1 (May 1974), p. 33.

Table 2 shows the distribution of income and major energy costs by income levels in 1972. The percentage of families in each adjusted family income class is the aspect of the table that is relevant to our purposes here. It is important to note that approximately two percent of all families have adjusted incomes in excess of \$50,000 and slightly more than 20 percent have adjusted incomes in excess of \$20,000 per year. This table will illuminate further analyses to be made in this paper.

Further discussion will concern tax subsidies in general with emphasis on tax items peculiar to oil and other extractive industries. Most tax deductions available to one business or industry are available to all others; some are not. While this paper shall be mainly concerned with subsidies selective by type of industry, it will also discuss those subsidies selective by income group and give estimates of their magnitude and distribution by income group.

## II. Tax Treatment of Domestic Income

### A. Comprehensive Tax Provisions

#### 1. Tax Credits

The tax investment credit is a one-time credit against tax for seven percent of the value of an investment in machinery and equipment. This credit is not related to depreciation; it is used as an incentive to investment in capital goods rather than an allowance for the recovery of capital. The tax investment

Table 2 -- Distribution of Income and of Major Energy Costs by Income Level, 1972

<u>Adjusted Family Income Class</u>	<u>Percent of Families</u>	<u>Percent of Family Income</u>	<u>Percent of Direct Electricity &amp; Gas Purchases</u>	<u>Percent of Indirect Energy Purchases</u>
Below \$2,000	5.4	0.4	1.4	1.2
\$2,000-4,000	8.2	1.8	4.0	2.6
\$4,000-6,000	11.8	4.1	7.2	5.2
\$6,000-8,000	10.0	4.9	6.8	5.8
\$8,000-10,000	10.2	6.3	7.8	7.7
\$10,000-15,000	20.8	17.8	17.6	20.0
\$15,000-20,000	12.6	15.2	15.0	16.4
\$20,000-25,000	10.1	15.8	15.7	16.3
\$25,000-50,000	8.9	21.0	19.1	18.2
\$50,000 and up	1.9	12.7	5.3	6.3

Source: Gerard M. Brannon, Energy Taxes and Subsidies (Cambridge: Ballinger Publishing Company, 1974), p. 146. Original source: Based on a distribution of income developed by Pechman and Okner. Cf. Joseph Pechman and Benjamin Okner, Individual Income Tax Erosion by Income Class, (Washington, D.C.: Brookings Institute, 1972).

credit has been used by Congress to stimulate production and to provide tax relief in periods of recession. Consequently, the tax credit has not been available continuously since its inception, but rather has been used at the discretion of Congress.

Table 3 shows the estimated level of federal income tax expenditures for the years 1967-72. The tax investment credit varies considerably from year to year, roughly corresponding to the level of business activity in the economy. The six-year low was estimated at \$910 million in 1970 and the high at \$3800 million in 1972. Corporations claimed approximately 80 percent of total deductions in this category for 1971 and 1972.

The distribution of tax credit among adjusted income classes for 1972 is given in Table 4. Approximately 45 percent of total investment credits claimed by individuals accrued to those with incomes in excess of \$20,000 per year and nearly 75 percent accrued to those with adjusted gross incomes in excess of \$10,000. Although the credit applies to most capital purchases, small farm machines as well as large manufacturing equipment, the credit was largely accounted for by the higher income categories.

## 2. Depreciation Allowances

Depreciation deductions are allowed for capital assets held in the production of income or expenses that are capital in nature. Depreciation is generally considered as a cost of doing business but legislators treat depreciation in excess of the straight line method as a tax subsidy. Taxpayers accrue tax benefits when the schedule of depreciation allowed under the tax laws is more accelerated than the presumed rate of actual physical deterioration of the asset.

The straight-line method and its alternatives can be summarized as follows. Straight-line depreciation allowances are computed by applying the depreciation rate (the estimated useful life of the asset divided into one) to the depreciable value (cost less the salvage value). (The salvage value can be ignored if it is less than 10 percent of the cost and if the asset has a useful life of at least three years.) The allowance under this method is the same each year over the asset's useful life. Under the declining balance method, a uniform rate (which may be as much as twice the amount of the straight-line rate) is applied to the unrecovered basis of the asset. Calculated in this manner, the basis is reduced each year by prior depreciation. The rate, which remains constant, is applied to a continually declining basis. Salvage value is not considered when using this method. Another common depreciation method is the sum of the years-digits, whereby the annual allowance is computed by applying a changing fraction to the cost of the property reduced by the estimated salvage value. The denominator of the fraction is the sum of the numbers representing the successive years in the estimated life of the asset; and the numerator is the number of years including the current year remaining in its useful life.

The sum of the years-digits and declining balance methods may not exceed twice the straight-line rate; nor are they available for used assets. The straight-line method is available for new or used property no matter how acquired. A taxpayer may also switch from the declining balance method, basing future allowances on the unrecovered basis and years of remaining life to insure full recovery of the depreciable value.

Table 3 -- Estimated Federal Income Tax Expenditures  
1967-72 (in Millions of Dollars)

	1971				1972					
	1967	1968	1969	1970	Corporations Total	Individuals Total	Corporations	Individuals Total		
(1) Investment credit	2300	3000	2630	910	1495	305	1800	3050	750	3800
(2) Depreciation on buildings (other than rental housing) in excess of straight line	500	550	550	500	320	160	480	330	170	500
(3) Depreciation on rental housing in excess of straight line	250	250	275	255	300	200	500	350	250	600
(4) Excess of percentage over cost depletion	1300	1430	1470	980	785	200	985	1400	300	1700
(5) Expensing of exploration and development costs	300	330	340	325	260	65	325	580	70	650
(6) Capital gains: individuals (other than farming and timber)	N.A.	N.A.	N.A.	N.A.		5600	5600		7000	7000 <sup>1</sup> / <sub>φ</sub>
(7) Capital gains: corporations (other than farming and timber)	500	525	525	425	380		380	400		400
(8) Deferral of income of con- trolled foreign corporations	150	165	170	165	165		165	300	25	325
(9) Exclusion of gross-up on dividends of less-developed country corporations	50	55	55	55	55		55	60		60
(10) Exclusion of income earned by corporations in U.S. possessions	70	80	85	80	80		80	80		80

Source: U.S. Congress, House of Representatives, Committee on Ways and Means, Estimates of Federal Tax Expenditure,  
93rd Congress (Washington, D.C.:Government Printing Office, 1973).

Table 4 -- Estimated Distribution of Selected Items of Tax Preferences of Individuals by Adjusted Gross Income Class, 1972 Calendar Year (in Millions of Dollars)

Adjusted Gross Income Class	Investment Credit		Depreciation on Buildings (other than Rental Housing) in Excess of Straight Line		Depreciation on Rental Housing in Excess of Straight Line		Excess of Percentage Over Cost Depletion		Expensing of Exploration and Development Costs		Capital Gains: Individuals		Deferral of Income of Foreign Controlled Subsidiaries	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
0 to 3,000	*			.6	1	.4	1	.3	*		20	.3	*	
3,000 to 5,000	45	6.0	3	1.8	4	1.6	5	1.7	1	1.4	70	1.0	*	
5,000 to 7,000	55	7.3	5	2.9	7	2.8	4	1.3	1	1.4	120	1.7	*	
7,000 to 10,000	95	12.7	10	5.9	14	5.6	11	3.7	2	2.9	190	2.7	*	
10,000 to 15,000	125	16.7	19	11.2	28	11.2	18	6.0	9	12.9	340	4.9	*	4.0
15,000 to 20,000	90	12.0	17	10.0	25	10.0	20	6.7	7	10.0	340	4.9	1	4.0
20,000 to 50,000	185	24.7	58	34.1	86	34.4	75	25.0	17	24.3	1260	18.0	1	4.0
50,000 to 100,000	80	10.7	36	21.2	53	21.2	61	20.3	11	15.7	1080	15.4	6	24.0
100,000 +	75	10.0	21	12.4	32	12.8	105	35.0	22	31.4	3580	51.1	11	44.0
Total	750		170		250		300		70		7000		25	

\* Less than 500,000

Source: U.S. Congress, House of Representatives, Committee on Ways and Means, Estimates of Federal Tax Expenditure, 93rd Congress (Washington, D.C.: Government Printing Office, 1973).

Exactly how each of the depreciation methods works is shown in Table 5, which assumes that a particular asset costs \$10,000, has a useful life of 10 years, and has no significant salvage value. Andrews notes, "...use of the declining-balance method at twice the straight-line rate, results in the write-off of about two-thirds of the cost of the asset over the first half of its life. The sum of the years-digits method permits recovery of almost three-fourths of the asset's costs over the same period."(4)

The important point is that a taxpayer can recover a significant portion of his original investment shortly after purchase. The tax deferral provided by having depreciation deductions offset income results in heavy investment in new capital equipment and buildings. The deferral of tax payment is in actuality a subsidy, or an interest-free loan from the government.

Although the law permits any other consistent method of depreciation, deductions per year for the first two-thirds of the asset's useful life cannot exceed the accumulated allowances permitted by the double declining-balance method. From an economic standpoint, it is obvious why the double declining-balance method is preferred by most investors when available. Statutory provisions regarding depreciation treatment for specific kinds of property are quite complex but it is sufficient to know the alternative methods and incentives of each.

With reference to Table 3, it becomes apparent that depreciation deductions for buildings (other than rental housing) in excess of straight line has remained about \$500 million over the six-year period. Approximately one-third accrued to individuals and the remainder to corporations in 1971-72. Depreciation in excess of straight line on rental housing has been increasing with an estimated \$600 million claimed in 1972. About 40 percent of these excess deductions accrued to individuals.

The distribution of the excess depreciation deduction (Table 4) shows that only about 10 percent of the total for each category is attributable to persons with incomes less than \$10,000 per year (45 percent of the population claimed only 10 percent of this item). This distribution (in percentage terms) is nearly the same between the rental and non-rental categories. It is also important to note that those figures apply to buildings only and not to capital equipment or amortizable capital assets.

Depreciation deductions reduce tax liability without affecting cash flows. They encourage capital investment by reducing real cost and providing for capital recovery. These deductions are sought as tax shelters, while purchases of capital assets hedge against inflation.

### 3. Capital Gains and Minimum Tax

Two tax items that are not deductions but are important to our analysis are capital gains and minimum tax preference. Capital gains is a special rate of tax applicable to the sale or disposition of capital assets. Generally, assets held less than six months are defined as short-term capital gains and those held longer than this period are considered long-term capital gains. Short-term gains are treated much like regular income items, but long-term gains for individuals are taxed at half the taxpayer's marginal rate, or 25 percent,

Table 5 -- Comparison of Depreciation Methods: Straight-Line, Declining-Balance, and Sum of the Years-Digits

Year	Straight-Line		200 Percent Declining-Balance		Sum of the Years-Digits	
	Annual Charge	Cumulative Charges	Annual Charge	Cumulative Charges	Annual Charge	Cumulative Charges
1	\$1000	\$1000	\$2000	\$2000	\$1818	\$1818
2	1000	2000	1600	3600	1636	3454
3	1000	3000	1280	4880	1455	4909
4	1000	4000	1024	5904	1273	6182
5	1000	5000	819	6723	1091	7273
6	1000	6000	655	7378	909	8182
7	1000	7000	655*	8033	727	8909
8	1000	8000	655	8688	545	9454
9	1000	9000	655	9343	364	9818
10	1000	10000	655	9998	182	10000

\* Switch to straight-line method for years 7-10 authorized so that the total depreciation will equal the cost of the asset.

Source: William D. Andrews, Federal Income Taxation (Boston: Little, Brown and Company, 1969), p. 338.

if less, to a limited extent. (There are other limitations of lesser significance too numerous to be mentioned here.) Certain royalty payments and sales of oil-bearing deposits are eligible for capital gains treatment as are plant and equipment used in production. For high bracket taxpayers, capital gains treatment provides a legitimate way of paying less tax. The case of oil is no exception.

The estimated loss of federal government revenues from taxpayers' use of the capital gains provision amounted to approximately \$7,400 million in 1972, of which \$7,000 million is attributable to individuals (Table 3). Less than 11 percent of the amount claimed by individuals accrued to those with adjusted gross incomes less than \$15,000 per year and over 50 percent went to those whose incomes were in excess of \$100,000.

The justification for the capital gains tax is to release the taxpayer from paying a large one-time tax (at his marginal rate) on assets that have appreciated over time; it is assumed that this encourages more capital investment, stimulates the economy, and conveys economic benefits to everyone.

Capital gains treatment is also applicable to assets that have been depreciated or amortized over time. The portion of the sale price of a depreciated asset eligible for capital gains treatment is determined by recapture provisions, basis rules, and by the type of asset in question.

The minimum tax--an attempt to tax items that otherwise might be exempt--is an additional tax imposed on certain items of preference income, including the excess of percentage depletion over the adjusted basis of the property, depreciation in excess of straight-line, and certain capital gains. Computation of the minimum tax allows the taxpayer to deduct \$30,000 and his regular income taxes from preference income and then to apply a ten percent rate to the adjusted amount.

The minimum tax had a significant impact on the seven oil companies studied by Gravelle. It increased tax liability by about 27 percent for the seven majors and 28 percent for the oil industry in total. Since the amount saved through the depletion allowance (discussed below) exceeds costs by a factor of sixteen, it is clear why this tax has such a large impact on oil companies but has little effect on other United States corporations (the minimum tax increased liability for the latter only by about one percent).

Tax laws also include capital loss provisions, which are usually to the disadvantage of the taxpayer; however, there are certain instances when capital losses may be treated as ordinary losses. In the capital loss provisions, the distinction between short- and long-term capital is determined as it is for capital gains: by the length of the time of possession.

## B. Selective Tax Provisions

### 1. Depletion Allowance

The first of the selective tax deductions to be discussed is the depletion allowance. Under criticism since its inception and particularly since the last energy shortage, no other deduction provides such an advantage to the taxpayer. Although the percentage depletion allowance is the method one hears most about, there are actually two methods available; and the taxpayer must use the one which



yields the highest deduction.

In the cost depletion method, a ratio of units of production is applied to the cost of the property adjusted by any depletion deduction already claimed, to determine the depletable (deductible) amount. The ratio is units produced and sold during the year divided by the estimated units to be produced over the remaining life.

$$\frac{\text{Units produced and sold during the year}}{\text{Estimated units of production over the remaining life}} \times (\text{adjusted basis})$$

When the basis reaches zero, cost depletion ceases. If property is abandoned before its basis is reduced to zero, then the remainder can be deducted currently. This method reflects the decline in the value of an asset and is generally used by companies for financial accounting and income reporting. Another important aspect of cost depletion is that if intangible drilling costs are not expensed, they are considered part of the depletion base. Cost depletion most resembles a depreciation deduction in that the deductible amount is limited to a consistent method based on the purchase price, with certain adjustments made to the basis.

The percentage depletion method produces a tax deduction completely divorced from the idea of cost. The deduction is determined by applying to gross income a percentage rate that varies with the extractive industry in question; percentage depletion for oil is 22 percent. The gross income from oil producing property is a linear function of the wellhead prices of oil and gas produced during the year. In no instance may the percentage depletion allowance exceed 50 percent of taxable income--that income taxable after every other deduction has been taken. The definition of property is important to the depletion allowance, and generally, each separate interest, in each deposit, in each separate tract or parcel of land, is considered a separate property. If all operating interests are within a single tract, the interests may be treated either together or separately.

Each taxpayer with a direct economic interest may take the percentage depletion deduction on his share of the gross income. An operator deducts eligible royalty payments from the gross income of the mineral property before the depletion computation. A royalty holder may take depletion on the share of depletion represented by his royalty. It is apparent from this short analysis that even a small interest in an oil-producing well can accrue large deductions from the depletion allowance. This fact is reflected in the large number of limited partnerships issued to people desiring a tax shelter. In addition to the percentage depletion deduction, such partners may also deduct expenses for dry holes, intangible drilling costs, and tangible drilling costs.

The excess of percentage over cost depletion (Table 3) amounted to approximately \$1,400 million in 1967, 1968, and 1969, dropped to about \$980 million during 1970 and 1971, and increased dramatically to \$1,700 million in 1972. The distribution of the excess deduction among income categories (Table 4) shows that over 80 percent accrues to people with incomes greater than \$20,000 per year. Less than 8 percent of the excess deduction is accounted for by people earning less than \$10,000. Over one-third of the excess deductions accrue to

those persons with adjusted gross incomes in excess of \$100,000. Over 55 percent of the excess depletion deduction accrues to less than 20 percent of the population.

An analysis of tax data for seven major oil companies over a 5-year period, 1968-72,(5) reveals that the percentage depletion deduction was clearly the most important of the provisions peculiar to the extractive industries. Percentage depletion reduced the seven companies' tax liability by approximately \$990 million. These corporations accounted for nearly 70 percent of all the excess deductions claimed by corporations in 1972. Total depletion deductions amounted to over \$4 billion in 1971.

Excess of percentage depletion over original costs (or basis) is considered a preference item under the minimum income tax provision enacted in 1969. The minimum tax rate is levied on the aggregate of preference items (after subtraction of \$30,000 of preference income and an additional amount equal to the taxpayer's regular income tax). It is estimated that percentage depletion exceeds costs 16 times.(6)

Tax preferences which increase the rate of after-tax return may result in the misallocation of resources by understating their real cost. Kahn observes, "The fact that net returns on investment after tax in the oil industry may not be unusually high thus constitutes not a defense of the allowance but the clearest possible proof of the misallocation it causes."(7)

## 2. Expensing Intangible Drilling Costs and Dry Hole Allowances

Intangible drilling costs are expenses incurred in bringing a well into production. Some examples are labor, materials, supplies and repairs. Tangible expenses are pipe, tanks, pumps, etc. Normally, expenses of the former type are included in the basis of the asset and must be amortized; that is, only a portion of the cost may be recaptured in each year of the asset's useful life. Intangible drilling costs, however, may be deducted currently. If they are currently deducted, they may be recovered in addition to percentage depletion. If they are not deducted currently, they can be cost depleted. If they are not expensed (deducted currently) and percentage depletion is used, no further deduction may be taken.

This expensing provision provides an obvious advantage for oil drillers and producers. Unlike most investors they may reclaim their capital expenditures at once, rather than over a period of time. This is one of the few cases in which an expensing allowance is given for capital expenditures. Legislators intended it to provide a strong incentive for oil exploration.

Expensing of exploration and development has cost the government between \$300 and \$350 million a year from 1967 through 1971. In 1972 (Table 3) the amount doubled to \$650 million and was greater than one-third the excess percentage depletion amount. This is an extremely significant deduction; with continual investment, the deferral can provide a permanent tax savings.

Its importance is also reflected through the income groups of individuals (Table 4) who make use of it. Less than six percent of this expensing deduction is accounted for by persons with adjusted gross incomes less than \$10,000, while 31 percent of the total is taken by those with incomes in excess of \$100,000, 70 percent is taken by those with adjusted incomes in excess of \$20,000

per year, or about 20 percent of the population.

With reference to the Gravelle study, "...The computations show that the expensing of intangibles has a relatively small impact on effective tax rates, generally accounting for a one percentage point reduction. For 1972 these deductions further reduced the effective tax rate to 8.88 percent, saving the seven companies \$70 million."(8)

Another special provision for the oil industry is the expensing of dry holes. This provision allows for the current deduction of costs that would ordinarily be treated as capital losses. Amounts that would normally be allowed only to be amortized or depreciated may be deducted for a complete recovery of the capital expense in the year the well was found to be non-producing. No estimates were derived for this item separately but it was assumed by the author to be included in the expensing of exploration and development costs.

The relatively small impact of these deductions on the tax liability of the seven major oil companies studied by Gravelle is necessary, though not sufficient, evidence of the general level of development and exploration. These seven large companies appear to be taking relatively little advantage of this lucrative deduction while smaller companies and individuals are using it to a greater advantage.

### C. Summary of Domestic Tax Provisions

Tax deductions, or tax subsidies, provide special investment incentives to the taxpayer trying to maximize his income. Accelerated depreciation allowances, tax credits, and capital gains provisions provide preferential treatment for investment in capital assets. Percentage depletion and the expensing provisions yield excess deductions that make ownership (whole or part) in oil lucrative, especially to higher bracket taxpayers. Due to the size of investments required in the preferentially treated categories, the distribution of these excess deductions almost entirely accrue to the wealthy and have virtually no impact on lower income groups.

It is obvious then that these provisions categorically subsidize higher income groups and that one of their effects is to reduce the slope of the graduated rate schedule. If these provisions should become generally utilized by higher income groups, it is conceivable that effective marginal tax rates may become negative.

Okner and Pechman have determined that there is little difference in effective tax rates for most of the population: "All told, taxes have only a minor impact on the distribution of income in the United States. Even the most progressive set of incidence assumptions produces a pattern of tax burdens that makes the relative distribution of income only five percent more equal."(9) It is sufficient for our purposes to note these disparities in tax treatment and their general effects. Lack of sufficient data prohibits further extrapolation of corporate behavior, for profit motives may become mixed with tax motives and objectives of planners may differ from firm to firm (and from individual to individual).

It is important to note, however, that the major special provision, percentage depletion, as well as the other special deductions, accrue mainly to

oil and gas at the well head. Vertically integrated oil companies thus have a large incentive to claim all profits (or as much as possible) at the well head in order to gain the largest percentage depletion deduction. The consequences of this practice affect the structure, performance, and conduct of the oil industry.

### III. Tax Treatment of Foreign Income

In order to discuss the provisions that affect tax treatment of foreign derived income, the concept of equity must be reintroduced. A national concept of equity for treatment of foreign taxes (taxes paid in a foreign country on income derived from sources within that country) would treat taxes paid in a foreign country as state and local taxes paid within this country: that is, foreign taxes would be deductible from taxable income, but no additional deduction or credit for them would be allowed.

An international concept of equity would consider foreign taxes paid as equivalent to the U.S. corporate tax and allowed as a credit against the U.S. corporate income tax. The difference from the taxpayer's point of view is obvious. A credit against domestic taxes by the foreign tax credit results in less total tax paid than if foreign taxes were merely deducted.

The present U.S. tax policy regarding foreign tax treatment is congruent with the international concept of equity. Foreign taxes may be credited against taxes payable under the U.S. corporate income tax, up to the full amount of tax owed on foreign source income. The definition of what taxes are eligible for the foreign tax credit is rather broad and includes royalty payments to foreign governments and taxes paid to political subdivisions within a foreign country. Furthermore, when a U.S. company starts operation in a new country, it usually shows losses for several years, as deductions for drilling expenses and intangibles are taken currently. These losses may be deducted to offset domestic source oil income. Since the domestic corporate tax rate is 48 percent for incomes in excess of \$25,000, the Treasury in effect subsidizes drilling expenses at nearly half the cost incurred.(10)

Foreign taxes may also be credited against withholding taxes on dividends paid to U.S. corporations. An indirect credit for foreign taxes paid on the profit underlying the dividend is permitted where the parent U.S. corporation has at least a ten percent ownership in the foreign incorporated subsidiary.

One important difference between foreign and domestic tax treatment is that depletion allowances apply to earnings of foreign branches but not to the profits of foreign incorporated subsidiaries. Losses in foreign branches but not in foreign subsidiaries may offset domestic income. The indirect credit for a foreign profits tax on dividends is not allowed for portfolio investments. This disparity in tax treatment is great but has little significance, since very little foreign investment is carried out in the corporation portfolio form. (This situation may itself be a consequence of the tax provision rather than economic considerations.)

A. Comprehensive Tax Provisions

1. Foreign Tax Credits

The provisions for foreign tax credits allow corporations to credit foreign taxes against their domestic U.S. tax bill. The credits are limited to the U.S. tax liability on foreign income. Explicitly, this means that foreign source income will not be taxed at a rate exceeding the rate for domestic source income. If the foreign tax rate exceeds the domestic rate, the credits are subject to one of two limitations which are chosen by the taxpayer.

First, under the overall limitation of the foreign tax credit, a firm may pool its foreign income earned in high foreign tax jurisdictions with income earned in countries with lower tax rates. This allows tax paid in high foreign tax jurisdictions to be credited against U.S. tax due on income from the low tax countries. Credits can be carried back two years and forward five years to insure that all of the allowance available is credited. The foreign taxes creditable also include royalties and taxes paid to political subdivisions within a country. Jenkins observes,

Instead of levying a large royalty or bonus payment to extract rent from low cost oil reserves, as would a domestic landowner in the United States, these countries have levied a tax as a percentage of the difference between a non-market posted price and a fixed per unit of cost of production. These taxes are essentially a tax per barrel of oil produced and have little relationship to the profits generated by investments made in the production process. Yet they are allowed to be credited against United States tax liabilities. If instead a royalty or bonus payment had been levied, these payments could only be deducted from gross revenues or expenses.(11)

Thus, foreign income provides an economic advantage over domestic income in that taxes paid at the state and local levels on income earned within this country are merely deductible.

The alternative limitation that applies to the foreign tax credit is the per country limitation. Simply stated, income earned within a country on which foreign tax is paid is not pooled with income earned in other countries. The credits for taxes paid to one country may offset only U.S. tax due on income from that country. The differences of limitation treatment are great; but the taxpayer may choose the one that particularly benefits him.

As an explanatory exercise, let us assume that a U.S. corporation has  
\$1000 of income in country A - with tax rate of 60% and  
\$1000 of income in country B - with tax rate of 30%.

The U.S. tax liability before the foreign tax credit is applied is \$960 (48% of \$2000).

Tax due from country A = \$480	Tax due from country A = \$600
Tax due from country B = <u>\$300</u>	Tax due from country B = <u>\$300</u>
Total tax credit = <u>\$780</u>	Total tax credit = <u>\$900</u>

U.S. tax due is now \$960 -  
780 = \$180 (excess credit  
is \$120: \$900 - 780)

U.S. tax due is now \$960 -  
900 = \$60 (no excess credit)

The overall limitation is obviously preferable in this case, as no tax credits are wasted.

Further, let us assume in addition that a U.S. corporation has branch operations and a \$2,000 loss in country C. Since losses may offset domestic income, the U.S. tax liability on the foreign income before the credit is applied is now \$480 (48% of \$1,000). Under the per country limitation, the foreign tax credit is again \$780, yielding an excess credit of \$300 (\$780 - 480 = \$300). Using the overall limitation, however, the maximum credit allowable is \$480 (48% of \$1,000), leaving no excess credit.(12)

The foreign tax credit has a very significant impact in reducing petroleum taxes. (See Table 6.) Because U.S. corporations cannot use the foreign tax credit to offset domestic source income, the effect on total U.S. income tax liability increases as the proportion of foreign source incomes increases relative to domestic sources and as the foreign tax rate increases. As Leftwich points out, the relatively large impact of the credits on the petroleum industry reflects "...the fact that these companies generate a large portion of their income abroad, are often situated in high tax areas, and operate through branches to a greater degree than companies in other industries."(13)

In 1971, the foreign tax credit produced an estimated revenue loss to the federal government of \$2.156 billion. The oil industry credited approximately \$829 million in this same year--nearly 40 percent of total foreign tax credits for all industries. These estimates do not include the revenue loss from the less developed country corporations exclusion of gross-up on dividends.(14) which was another \$75 million in 1971. Gravelle estimated that the seven oil companies credited approximately \$332 million in 1971, about 40 percent of the total oil industry's foreign tax credit and about 15 percent of total credits for all industries. She concludes that percentage depletion and the foreign tax credit are so closely tied that the removal of either provision without removal of the other will have little effect on the taxation of foreign source income.

## 2. Tax Deferral

Foreign source income earned by foreign corporations is exempt from U.S. taxation unless distributed to shareholders who are U.S. nationals (individual citizens, residents, or U.S. corporations). This provision also permits deferred taxation on profits earned by foreign incorporated subsidiaries of U.S. corporations until such time as the profits are remitted to the parent corporation. (Deferral also applies to dividends and on interest in portfolio management.) The deferral advantage is not available, however, to profits earned by U.S. corporations operating in the branch form.

Table 6 --- The Foreign Tax Credit and Its Impact  
on U.S. Corporate Income Tax Liability

Industry	Foreign Tax Credits in Million Dollars		All Corporations		Corporations with Foreign Tax Credits			
	1966	1970	U.S. Corporate Income Tax Liability Before Credits in Million Dollars	Foreign Tax Credit as Percent of U.S. Corporate Income Tax Liability Before Credits	U.S. Corporate Income Tax Liability Before Credits in Million Dollars	Foreign Tax as Percent of Credit of U.S. Corporate Income Tax Liability Before Credits		
			1966	1970	1966	1970		
All Industries	2,861	4,640	34,443	33,201	8.3	14.0	20,055	14.3
Manufacturing	1,297	2,039	18,711	14,972	6.9	13.6	13,106	9.9
Food Products	121	181	1,665	1,828	7.3	9.9	889	13.6
Chemicals and Allied Products	240	379	2,469	2,398	9.7	15.8	2,190	11.0
Primary and Fabricated Metals	171	178	2,621	1,398	6.5	12.7	1,570	10.9
Machinery	303	718	3,928	3,349	7.7	21.4	2,949	10.3
Transportation Equipment	268	291	3,256	1,528	8.2	19.0	2,975	9.0
Other	194	292	4,773	4,472	4.1	6.5	2,533	7.7
Petroleum	1,132	1,995	1,987	2,921	57.0	68.3	1,794	62.1
Other Industries	432	607	13,746	15,308	3.1	4.0	5,155	8.4
Mining	135	109	337	370	40.0	29.5	238	56.7
Trade	57	167	3,296	4,290	1.7	3.9	593	9.6
Other	241	331	10,113	10,649	2.4	3.1	4,324	5.6

Source: Robert B. Leftwich, "U.S. Multinational Companies: Profitability, Financial Leverage, and Effective Income Tax Rates," Survey of Current Business, Vol. 54, No. 5, Part 1 (May 1974), p. 35.

As mentioned earlier, the U.S. percentage depletion allowance for the extractive natural resource industries is available only to the foreign branch form, thus explaining the widespread use of the branch form in petroleum operations by U.S. corporations. Foreign branch losses may also be set off against domestic income, whereas those of foreign incorporated subsidiaries may not.

The specific kinds of income that are eligible for tax deferral are as follows:

- a) Income earned by a foreign corporation that is engaged in manufacture or production and has no tax savings branches outside the country of incorporation.
- b) Income earned by a controlled foreign sales or service corporation engaged in selling only in the country of incorporation.
- c) Income earned by a controlled foreign sales or service corporation that neither buys nor sells goods or services to a related person and has no tax savings branches outside the country of incorporation.
- d) Income earned by a non-controlled corporation.

The tax deferral amounts to an outright exemption from tax as long as the incomes earned are not distributed to its shareholders. This allows a company that further qualifies as a Less Developed Country Corporation to reinvest profits in plant and equipment or some other form of capital asset and after the qualifying time passes, to sell the investment and claim capital gains treatment. The deferral allows a firm to operate with pretax dollars and to continue to do so as long as the profits are not distributed.

The use of the tax deferral has not been as widespread as one might imagine, primarily because of the form the business must have in order to qualify. The oil companies, for example, cannot claim both depletion deductions and qualify for the tax deferral provision since each applies to a different type of firm.

Deferral of tax on the income of controlled foreign corporations has produced a steadily increasing revenue loss from 1967 through 1972 (Table 3). In 1972 deferral amounted to half as much as the expensing deductions and was about 20 percent as large as the excess depletion deduction, a loss to the federal government of \$325 million in tax revenues.

Although individuals accrued only \$25 million of the benefits from the deferral provision, none of this amount was claimed by those whose adjusted gross incomes were less than \$10,000. Ninety-two percent accrued to individuals with adjusted gross incomes in excess of \$20,000 per year.

### 3. Western Hemisphere Trade Corporations

The Western Hemisphere Trade Corporation rules allow U.S. corporations operating primarily within the Western Hemisphere, outside the U.S., to claim an additional deduction which amounts to a 14 percentage point reduction in the U.S. corporate income tax. For a company to qualify,

- a) it must be a domestic corporation doing all its business (except for incidental purchases) in countries of the Western Hemisphere;



- b) it must derive 90 percent of its gross income from active business or trade; and
- c) it must have derived at least 95 percent of its gross income from outside the United States.

A Western Hemisphere Trade Corporation (WHTC) is not eligible for the tax deferral provision discussed above and its income is subject to U.S. tax as accrued. A WHTC may, however, be in a subsidiary relationship with a U.S. parent corporation and file a consolidated return without penalty. A WHTC is eligible for the foreign tax credit, and because the percentage depletion provision is available, firms operating in the extractive industries outside the U.S. but within the Western Hemisphere may benefit from both depletion and the WHTC deduction.

Western Hemisphere Trade Corporations are also used to a considerable as selling subsidiaries, both because foreign taxes are apt to be less on such sales from the U.S. and also because exporting activities can meet the qualifying WHTC requirements. The deduction is lucrative. Fourteen percentage points off the U.S. tax rate amounts to an almost 30 percent reduction in the effective tax rate.

Table 7 presents Western Hemisphere Trade Corporation deductions from 1968 through 1972 and makes it clear that this provision primarily benefits a few large companies; for example, the study by Gravelle indicates that the seven oil companies accounted for nearly 90 percent of the WHTC deductions taken by the oil industry. Three corporations within the seven account for 90 percent of the seven-company total, approximately 80 percent of the oil industry total, and nearly one-third of all WHTC deductions in 1970.

#### 4. Less Developed Country Corporations

This item features a non gross-up provision--the U.S. tax liability on foreign income is computed on the basis of foreign income net of foreign taxes. The foreign tax paid (including royalties, etc.), however, can still be credited against tax. The primary advantage lies where the foreign rate is less than the U.S. rate. To qualify for this provision, a foreign subsidiary must be engaged in trade or business deriving 80 percent or more of its income from less developed countries.(15)

It is interesting to note that the LDCC's are mainly countries outside of Western Europe and not a part of the Sino-Soviet bloc. Thus, the LDCC's include all of the Middle East, Ecuador, and Venezuela, where most oil profits are derived. In 1966, the crude petroleum industry accounted for a large part (about 40%) of investment in developing countries. In the same year, over 80 percent of the net earnings (after foreign taxes) of U.S. direct investments abroad accrued to foreign branches of U.S. corporations or to foreign incorporated subsidiaries that were over 95 percent U.S.-owned. Approximately one-third of all foreign earnings (net of taxes) emanate from the foreign branch rather than the foreign incorporated form. The occurrence of the branch form of foreign business is heavily concentrated in the extractive industries.

As of 1972, petroleum accounted for nearly 40 percent of U.S. direct investment in less developed countries. Rates of return between countries vary greatly in the case of oil. Lupo notes this disparity, "Petroleum affiliates

Table 7 -- Western Hemisphere Trade Corporation  
Deduction (In Thousands of Dollars)

	1968	1969	1970	1971	1972
Aggregate	\$129,809	\$ 92,938	\$111,080	\$155,936	\$130,446
Total Oil Industry	\$139,883	\$107,679	\$122,850	N.A.	N.A.
Total All Corporations	\$340,710	\$331,030	\$288,959	N.A.	N.A.
Aggregate as Percent of Oil Industry	92.8	86.31	90.42	N.A.	N.A.
Aggregate as Percent of Total	33.22	28.08	38.44	N.A.	N.A.

Source: U.S. Congress, Permanent Subcommittee on Investigations of the Committee on Government Operations, Analysis of Tax Data of Seven Major Oil Companies, by J. Gravelle, 93rd Congress (Washington, D.C.: Government Printing Office, 1974), p. 13.

in the developed countries show a low rate, while petroleum affiliates in other areas, mainly the developing countries, show a high rate of return."(16) This reflects the fact that, because of tax considerations and pricing agreements with the governments of producing countries, oil transferred from producing affiliates in developing countries to sales affiliates in other areas is priced so that most of the petroleum firms' profits occur in developing countries.

The exclusion of gross-up on dividends of LDCC's has been between \$50 and \$60 million per year since 1967. Although this is not nearly as substantial as other major foreign tax provisions, it is still significant. This provision is questionable particularly in view of the latest developments concerning the reliability of our source of energy supply. A redefinition of those countries that qualify as less developed might be the best way to retain the provision as a justifiable incentive for investment in these countries.

#### 5. Tax Treatment of Tanker Income

Tanker investment provides international transportation for the oil industry's products, and in 1971 tankers represented the third largest type of foreign investment held by American companies.(17) Due to their size and efficiency, tankers are carrying an increasing portion of oil transported.(18) As a further step in vertical integration, a company can manipulate internal profits for the shipping concern to occur at the producing or consuming country by adjusting its shipping rates. Furthermore, the United States does not require controlled foreign corporations, including tanker subsidiaries, to report their income in the year it is earned.

Tanker subsidiaries can claim corporate homes in tax-haven countries like Liberia and Panama. Profits can be remitted to the parent corporation, and use of excess foreign credits can offset any tax liability under the overall limitation. Tanker subsidiaries in Panama or Canada can qualify for the Western Hemisphere Trade Corporations deduction and still qualify for the lucrative foreign preference treatment.

Table 8 lists tank ships under construction or on order as of December 31, 1972. Liberia had a future interest in 24 percent of total tonnage under construction. Japan and Norway accounted for another 28 percent and these three countries together intended to register over half of the total tonnage under construction.

Table 9 shows ownership of very large crude carriers (VLCC's) by group. Large oil companies own over one-quarter of dead weight tonnage and all oil companies together account for over one-third. In June of 1972, the Petroleum Press Service, p. 207, reported 50 million tons of VLCC capacity at the end of 1971 with ownership and chartered tonnage of 34.7 million in major oil companies.(19) The above analysis of the tax system makes it clear that tanker control, particularly ownership, enables a corporation to transfer profits between different stages of the vertically integrated process as well as between different countries.

#### 6. Other Foreign Tax Treatments

Controlled foreign corporations may exclude from their "subpart F income" (certain income classified as ineligible for deferral), earnings from qualified investments in the less developed countries provided they are reinvested in the

Table 8 -- Tank Ships Under Construction or on Order  
(Not Including Combined Carriers)  
December 31, 1972

Intended Flag of Registry	Number of Vessels	Total	Deadweight Tonnage	
			Average Per Vessel	Percent of Existing Fleet
Liberia	144	27,564,000	191,400	46.8
Japan	96	18,196,000	189,500	65.6
Norway	82	14,203,000	173,200	57.4
United Kingdom	84	12,080,000	143,000	43.3
France	27	5,724,000	212,000	66.0
United States	41	3,332,000	81,300	36.0
Sweden	28	3,301,000	117,900	64.8
Denmark	14	3,174,000	226,700	86.4
Panama	21	3,153,000	150,200	43.1
Italy	25	2,546,000	101,800	37.3
Greece	23	2,140,000	93,100	19.4
Spain	14	2,072,000	148,000	59.8
West Germany	15	1,891,000	126,000	57.8
Brazil	11	1,239,000	112,600	124.1
U.S.S.R.	37	1,188,000	32,100	22.3
All Others	130	14,756,000	113,500	88.5
Total World	792	116,559,000	147,200	52.8

Source: Sheldon L. Bierman, "Oil Tank Ships: Their Ownership and Control," an unpublished monograph as a report to the National Science Foundation, 1974, p. 6. Original source: Analysis of World Tank Ship Fleet (December 31, 1972) Sun Oil Company, October 1973, p. 6.

Table 9 -- Ownership of Very Large Crude Carriers  
(Number of Ships and Tonnage at End-1972)

In Service, by Size Group*	Oil Companies		Independent Shipowners	Totals	
	Majors	Others		Number	Tonnage**
175,000-199,999	6	1	13	20	3.7
200,000-249,999	52	13	144	209	45.9
250,000-299,999	22	3	41	66	17.2
300,000-349,999	1	0	7	8	2.6
350,000-399,999	0	1	0	1	0.4
400,000-449,999	0	0	0	0	----
450,000-499,999	0	0	0	0	----
500,000 and over	0	0	0	0	----
Totals:					
Number	81	18	205	304	----
Tonnage**	18.4	4.2	47.2	----	69.8
On Order, by Size Group*					
175,000-199,999	0	1	3	4	0.7
200,000-249,999	14	16	75	105	24.1
250,000-299,999	53	18	138	209	55.2
300,000-349,999	22	2	25	49	15.5
350,000-399,999	1	0	29	30	11.0
400,000-449,999	2	0	0	2	0.8
450,000-499,999	0	1	2	3	1.4
500,000 and over	2	0	0	2	1.1
Totals:					
Number	94	38	272	404	----
Tonnage**	26.1	9.8	74.0	----	109.9***

\* In Dwt

\*\* In Million Dwt

\*\*\* Discrepancy in total accounted for by rounding off

Source: Sheldon L. Bierman, "Oil Tank Ships: Their Ownership and Control," an unpublished monograph as a report to the National Science Foundation, 1974, p. 6. Original source: Petroleum Press Service, November 1973.

same or another less developed country. The repatriated capital gains exception allows tax-deferred reinvestments abroad to be converted into capital gains by sale or liquidation of the assets. To qualify, the asset must be retained for 10 years and the profits must be reinvested.

The Domestic International Sales Corporations Act generally provides for taxation of certain export profits at a rate not exceeding one-half the normal corporate tax rate. This provision is predicted to cost nearly \$1 billion in 1975.(20) The Treasury reported in 1972 that this provision was costing more than twice the amount anticipated and that its effects were unclear at best. This provision generates huge revenue losses to the government yet comparatively little is known about it. Its impact upon the oil industry is also unclear.

Corporations that derive at least 80 percent of their gross income within a U.S. possession and derive 50 percent of such income from active business conducted within the possession are treated as foreign corporations for purposes of U.S. tax treatment. This allows them to receive deferral, foreign tax credits, subpart F exceptions, and other preference treatments. Puerto Rico, which has been the largest source of this exempt income, has very liberal tax rules and encourages tax savings for U.S. corporations doing business there.

#### 7. Taxation Effects of the Multiple Corporate Structure

Vertical integration achieved by corporate ownership and control of the various stages of the oil production process provides financial, contractual, and tax flexibility to minimize total tax liability and maintain market power. Ross notes, "Further, the ability to file in the United States a consolidated federal income tax return and to make a consolidated minimum distributions election allows international oil companies to achieve maximum results in the United States despite the use of separate corporations."(21)

United States corporations are allowed to structure their affairs in such a manner as to reduce tax liability, and the resulting complexity makes auditing by the IRS difficult and expensive. Compliance with the tax law may be largely the discretion of the taxpayer.

#### B. Summary of Foreign Tax Provisions

Tax preferences given to foreign investment by the provisions for foreign tax credits, deferral, Western Hemisphere Trade Corporations, and Less-Developed Country Corporations have created huge subsidies for a limited number of large corporations. The magnitude of these federal tax savings is not known precisely and current data is difficult to access. These provisions clearly, however, introduce nonneutral incentives to invest abroad which are difficult to justify on grounds of equity, efficiency, or productivity. Moreover, the distribution of the foreign subsidies clearly favors high income groups.

Furthermore, foreign investments may displace exports. International capital flows may create an interdependence of economies that might be justified for political purposes, but less clearly for economic ones. Even though foreign investment stimulates private profits of domestic source capital originating within the United States, the U.S. government's share of taxes on these profits falls.

Nor are subsidies to foreign investment limited to tax treatments. The Export-Import Bank of the United States is a separate government agency that promotes exports by providing credit terms at competitive prices, and also provides guarantees and insurance.(22) Bohi has concluded from recent historical statistics that Eximbank has no significant effect on exports although its cost to the government is substantial. The subsidy aspects of a "Buy American" policy have also been studied. The quantitative estimates of its effects range from a small stimulus of about \$1 million to a possible negative effect of several hundred million.(23) These programs may have merit on other than economic grounds but there is increasing evidence that negative effects on relative productivity, relative prices, and availability of resources outweigh many positive effects of these subsidies.

#### IV. Preliminary Findings of Cornell Energy Industry Study Group

##### A. Preliminary Results

Through the efforts of the Special Subcommittee on Integrated Oil Operations and the Cornell Energy Industry Study (Study Group), a detailed questionnaire sent to 89 major oil companies has provided information concerning the industry's competitive structure that had not previously been available. It is probably the most comprehensive survey taken of any industry, yet there are certain gaps in the information that prevent a complete analysis. The types of data now available, and the gaps in each category, are noted below.

Data collected concerning general corporate structure:

- a) corporate mergers
- b) interlocking directorates
- c) stock ownership
- d) principal debt holders
- e) joint ventures
- f) partner and subsidiary relationships

Board of director and financial interlocks are so extensive that meaningful analysis of market transactions between oil companies becomes difficult: for example, Chase Manhattan Bank has director interlocks with Exxon, Standard Oil of Indiana, Atlantic Richfield, and Diamond Shamrock. Chase Manhattan is also one of the top ten stockholders in Exxon and fourteen other oil companies. In addition, Chase Manhattan is a major debt holder in 23 oil companies.(24)

Large tax subsidies accrue to the financial institutions and individuals who have ownership interests in parts of the oil industry. Further, excess deductions, in the case of partnerships and limited partnerships, can offset tax liability completely unrelated to oil. While ownership interests are revealed through the survey data, tax interests are not: the present data does not reveal the value of ownership interests in terms of tax benefits accruable.

Patterns brought forth in previous analysis reveal intricate corporate holdings and ties.(25) Multiple ownerships and interlocking directorates are extensive and difficult to justify as maintaining competitive economic forces. It may be that the forms of current holdings and investments, both foreign and domestic, can be justified only as a basis for increased market power and decreased tax liability, not increasing economic returns. Tax data would help reveal if this is the case.

Part B of the questionnaire seeks information concerning production capacity and existing reserves. Joint ownerships, joint ventures, assignments, and acreage of oil fields are revealed in this context, and preliminary results confirm extensive joint efforts in exploration. Patterns of ownership of producing wells vary from a well owned by a single owner to wells that are held by more than 50 limited or full partners.(26) The data does not reveal, however, the secondary level of ownership in which several limited partners may own a single interest. Since statutory law permits partners to divide profits and losses as they see fit, tax returns are the most convenient means of revealing tax interests.

The questionnaire does not reveal intercorporate pricing. As mentioned before, vertically integrated firms have every incentive to claim profits at the well head rather than at the refining or distribution step. To the extent that the various processes are handled by subsidiaries, profits may be claimed where percentage depletion offsets the greatest amount of profit. In this manner the vertically integrated firm could conceivably "squeeze" independent retailers or wholesalers by using profits at the production end to subsidize their own retailers. This type of market control could be devastating to competition, yet its existence and extent cannot be revealed without detailed tax information.

Similarly, in the parts of the questionnaire concerning refining, marketing, and transportation of petroleum products there are questions pertaining to profits at the various levels of operation. Because there are many special provisions that relate to foreign source income, questions relating to foreign operations reveal little. There are estimates for foreign profits by country and by type of operation, but primarily, there are no estimates of the absolute amount of foreign deductions taken.

The financial information provided by the oil companies probably reveals the least amount of information of all the items. Terms such as net investment, gross investment, gross revenues, operating costs, and pre-tax profits are largely self-definitional. There is no breakdown of these items by subsidiary or by separate corporate entities within the firm. The financial information is too general in nature to provide accurate estimates of tax expenditures. Furthermore, there is no assurance of compliance with the law in matters regarding intercorporate pricing.

With additional data, determination of subsidy effects on consumer prices and consumption can hopefully be estimated. An estimate of the efficiency of using the tax system for producing certain effects on an industry and for distributing excess deductions among outside individuals would benefit future policy considerations.

## B. Tax Information

Due to the concentration in the petroleum industry most tax data is simply not detailed enough. Concrete information is either not available or not sufficiently extensive to reveal thoroughly the current magnitude of foreign tax treatments. Despite the lack of definitive breakdowns in the data set, Leftwich concludes that before- and after-tax rates of return on assets of majority owned foreign affiliates in developing countries are nearly twice that of any other industry.(27)



To explain this phenomenon, Leftwich determined that the differences in rates of return between developed and less developed countries for the petroleum industry were partially due to intercompany pricing policies and the use of posted prices by the producing affiliates in valuing their sales.(28) Vertically integrated corporations can easily make profit transfers to maximize tax credits and use of other beneficial tax provisions.

### C. The Need for Tax Returns

Complete tax returns from oil companies would yield valuable information. Such data would further the interpretation both of previous tax analyses and of the present corporate survey data. Most importantly, tax returns would illuminate the use and extent of non-arm's-length transfer pricing. By examining profit pile-ups, returns on investment, and risk differentials, accurate estimates of the nature of corporate activity in foreign countries could be determined.

By looking at the extent of deductions taken, actual costs to the Treasury could be determined. Depletion, expensing, and exploration and development expenditures would reveal the actual amounts spent in the various categories. Comparison of tax deductions with rates of return would help determine which activities were pursued for tax purposes.

The returns for international operations would reveal effective tax rates by country and by operation. Furthermore, tax credits for royalties and payments to political subdivisions within a country could be enumerated and selective policy decisions could be made based on hard data.

In a highly concentrated industry like oil, it is not unusual for companies to use other methods besides the price mechanism for competition. Tax savings is one of these. Good tax lawyers can save a company large sums of money, enough sometimes to give a competitive edge over another firm. With tax data these more subtle types of corporate competition would become explicit and reasons for such activities would be revealed. Comparisons of financial reporting with tax reporting might be useful to those who study accounting methods and practice.

Most importantly, an analysis of detailed tax data could yield detailed, useful answers to policy questions. It could, for example, detail our most pragmatic approach to the energy problem. Comparisons of economic returns to returns on investment due to tax savings would be most beneficial in this regard.

The oil industry would not be excluded from benefits resulting from this type of analysis. Many tax rules and Treasury regulations are unclear or even unwritten. Analysis of actual practices would clarify and hopefully lead to a more rational and explicit set of tax rules. Furthermore, study may reveal that oil companies have acted in the best interests of all, given the objectives of national security, balanced growth, and economic welfare. Further analysis with detailed tax information is probably the only way that this can be definitely, factually, and fairly determined.

### D. Conclusions

The oil industry accrues large government subsidies in the form of preference tax treatments. It uses its tax planning expertise and market power to distribute

these deductions among its subsidiaries to reduce or negate income tax liability. Consequently, the payment of any income tax is largely at the discretion of the taxpayer.

It has been pointed out that removal of percentage depletion would have no effect on foreign source income taxes unless the foreign tax credit was also eliminated. This implies that at present, the oil industry has more tax deductions than it can use. More specifically, these surplus tax deductions are distributed among higher income groups in the form of limited partnerships. Tax shelters of this type are, of course, entirely legal, but they do represent large revenue losses to the federal government. Eligibility of foreign royalty payments for tax credit purposes has resulted in even greater revenue losses. Present tax policy provides for international exploration and development of oil. This affects our balance of payments position and international trade. To the extent that income taxes are forgone on foreign source petroleum, the United States may be promoting intensification of market power of a vital resource.

This exposition of federal corporate income taxation of the petroleum industry has described provisions applicable to industry in general (accelerated depreciation and investment tax credit) and provisions specific to the industry (foreign income provisions, drilling expense, percentage depletion, etc.) as they affect petroleum corporations. We have noted previous studies which relate these provisions to effective corporate tax rates and to individual income distribution. It follows from this discussion that financial returns may not reflect actual costs, and that prices of energy products have been subsidized by federal corporate tax policies. If true, this means that interaction of federal tax policy and corporate actions has led to uneconomic production and use of energy resources. The implications for environmental impact and resource depletion are serious, in that the possibility exists that federal tax policy is to some degree responsible for both.

The problems raised here cannot be resolved with information presently available. Our discussion leads us to conclude with this question: should petroleum industry federal income tax returns be public information?

V. Footnotes

1. U.S. Congress, Joint Economic Committee, "Tax Preferences to Foreign Investment," by Peggy B. Musgrave, The Economics of Federal Subsidy Programs, Part 2--International Subsidies, 92nd Congress (Washington, D.C.: Government Printing Office, 1972), p. 178.
2. Ibid., p. 179.
3. U.S. Congress, Permanent Subcommittee on Investigations of the Committee on Government Operations, Analysis of Tax Data of Seven Major Oil Companies, by J. Gravelle, 93rd Congress (Washington, D.C.: Government Printing Office, 1974), p. 2.
4. William D. Andrews, Federal Income Taxation (Boston: Little, Brown, and Company, 1969), p. 338.
5. Gravelle, op. cit.
6. U.S. Congress, Senate, Committee on Interior and Insular Affairs, An Analysis of the Federal Tax Treatment of Oil and Gas and Some Policy Alternatives, 93rd Congress (Washington, D.C.: Government Printing Office, 1974), p. 25.
7. Alfred E. Kahn, "The Depletion Allowance in the Context of Cartelization," American Economic Review, Vol. LIV (June 1964), p. 295.
8. Gravelle, op. cit., p. 7.
9. Benjamin A. Okner and Joseph A. Pechman, "Who Paid Taxes in 1966?" American Economic Review, Vol. LXIV (May 1974), p. 174.
10. Gerard M. Brannon, Energy Taxes and Subsidies (Cambridge: Ballinger Publishing Company, 1974), pp. 15-16.
11. U.S. Congress, House of Representatives, Committee on Ways and Means, "Tax Preferences and the Foreign Operations of the U.S. Petroleum Industry," by Glenn P. Jenkins, Windfall or Excess Profits Tax Hearings, 93rd Congress (Washington, D.C.: Government Printing Office, 1974), p. 555.
12. This example was drawn wholly from Musgrave, op. cit.
13. Robert B. Leftwich, "U.S. Multinational Companies: Profitability, Financial Leverage and Effective Income Tax Rates," Survey of Current Business, Vol. 54, No. 5, Part 1 (May 1974), p. 34.
14. See section on Less Developed Country Corporations.
15. All countries other than the following are considered Less Developed Countries: Australia, Austria, Belgium, Canada, Denmark, France, Germany, Hong Kong, Italy, Japan, Liechtenstein, Luxembourg, Monaco, Netherlands, New Zealand, Norway, South Africa, San Monaco, Sweden, Switzerland, United Kingdom, and the Sino-Soviet bloc.

16. Leonard A. Lupo, "U.S. Direct Investment Abroad in 1972," Survey of Current Business, Vol. 53, No. 9 (September 1973), p. 31.
17. Jenkins, op. cit., p. 557.
18. Sheldon L. Bierman, "Oil Tank Ships: Their Ownership and Control," an unpublished monograph as a report to the National Science Foundation, 1974, p. 6.
19. Ibid., p. 9.
20. U.S. Congress, Joint Economic Committee, Federal Subsidy Programs, 93rd Congress (Washington, D.C.: Government Printing Office, 1974), p. 9.
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22. U.S. Congress, Joint Economic Committee, "Export Credit Subsidies and U.S. Exports: An Analysis of the U.S. Eximbank," by Douglas R. Bohi, The Economics of Federal Subsidy Programs, Part 2--International Subsidies, 92nd Congress (Washington, D.C.: Government Printing Office, 1972).
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25. Ibid., pp. 41-73.
26. Ibid.
27. Leftwich, op. cit., p. 30.
28. Ibid.

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