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DISTINCTIVE TAX TREATMENT OF INCOME FROM OIL AND GAS PRODUCTION

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I

HISTORICAL BACKGROUND

The provisions of federal tax law that result in distinctive treatment of income from oil and gas production do not pertain to nominal rates of taxation but to the amounts and timing of capital consumption allowances in the computation of taxable income.¹ These provisions fall into two general categories: (1) the option to use either a percentage of gross income or a *pro rata* share of certain capitalized costs as a measure of depletion, and (2) the option to currently expense certain capital outlays or to capitalize them for gradual recovery through the depletion allowance. As the following brief history indicates,² the first option evolved through legislative channels, the second through administrative channels.

The Revenue Act of 1913, the first act levying an income tax following final ratification of the Sixteenth Amendment to the Constitution, authorized "a reasonable allowance" for capital consumption in the computation of taxable income. In the case of mines (including oil and gas wells), the act specified a maximum permissible depletion deduction of five percent of the gross value at the mine of output during the tax period. Three years later, the Revenue Act of 1916 made no distinction in principle between mining and other types of enterprises in the rules governing capital consumption allowances. However, it did contain a provision that proved of particular value to the mineral industries. It provided for depreciation or depletion based on historical costs or, in the case of capital assets held prior to March 1, 1913, the fair market value as of that date. The latter option, apparently intended to place taxpayers who had acquired assets at different times under different cost conditions on a similar tax basis, was especially beneficial to those mineral pro-

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1. The statement applies equally to the tax treatment of incomes from other commercial minerals. The special provisions in respect to them differ only in degree and detail from those in respect to oil and gas. See Joint Econ. Comm., 87th Cong., 1st Sess., *The Federal Revenue System: Facts and Problems* 89-93 (1961), for a summary of current provisions regarding income from natural resources.

2. The following account is based on *Legislative History of Depletion Allowances*, Joint Comm. on Internal Revenue and Taxation, 81st Cong., 2nd Sess. (1950); Blaise, *What Every Tax Man Should Know About Percentage Depletion*, 36 *Taxes* 417 (1958); and Lentz, *Mineral Economics and the Problem of Equitable Taxation*, 55 *Q. Co'l. School of Mines* 10 (1960).

ducers who, due to the unpredictable fortunes of exploration, had discovered prior to March 1, 1913, deposits of substantially greater value than their discovery cost.

In 1918 Congress took explicit cognizance of the fact that the cost of discovery need bear no close relationship to the initial value of a mineral deposit. The Revenue Act of 1918 provided generally for depreciation or depletion based on cost or property value as of March 1, 1913. However, in the case of non-purchased mines and oil and gas wells discovered after March 1, 1913, where the fair market value upon discovery was "materially disproportionate" to the cost, the option was provided to base depletion allowances on discovery value. With the stated purpose of encouraging exploration for new mineral deposits, Congress thus held out to the discoverer-taxpayer the higher of two possible depletion bases: cost or discovery value. The possible benefit of the latter, however, was restricted by later legislation. In the Revenue Act of 1921 discovery-value depletion was limited to 100 percent of a property's net income computed without allowance for depletion. The purpose of this was to preclude taxpayers from charging off tax losses from mineral operations against taxable income from other sources. The Revenue Act of 1924 tightened the limitation to 50 percent of a property's net income before depletion.

Due to the relatively large number of separate oil and gas discoveries and the great difficulty in determining a fair market value of minerals shortly after discovery, the administration of discovery-value depletion for oil and gas properties proved exceedingly complex. Apparently to eliminate this difficulty and at the same time to retain discovery-value depletion in principle, Congress in 1926 substituted a rule-of-thumb measure for oil and gas depletion deductions. These deductions were based on what was taken to be the typical relation of discovery-value deductions to gross income in the years preceding. The figure adopted was 27½ percent of gross income. With the substitution of percentage depletion for discovery-value depletion in the case of oil and gas production,³ the 50-percent-of-net limitation was retained. Also retained was the alternative of using depletion based on actual cost should it provide a larger deduction than percentage depletion. But unlike discovery-value depletion, which had been confined to discovered properties of the taxpayer, percentage depletion was made applicable to all properties however acquired. The 1926 enactments have remained intact to the present.

3. The substitution was made for metals, sulphur and coal in 1932. Other minerals were added to the list in subsequent years, the last in 1954.

The legislation authorizing discovery-value and percentage depletion was supplemented, and its value to taxpayers enhanced, by several important administrative rulings.⁴ In 1917 Treasury Decision 2447 provided that the "incidental expenses of drilling wells" and expenses that "do not necessarily enter into and form a part of the capital invested or property account," might, at the option of the taxpayer, be deducted from gross income as ordinary operating expenses. Internal Revenue Regulation 33, Revised, was issued in January 1918 and used similar language. It provided that costs charged to the capital account under the option and "represented by physical property" might be recovered through depreciation (as distinguished from depletion). The same regulation also provided that the cost of drilling unproductive wells could be treated as ordinary operating expense. Subsequent regulations and decisions with issue dates running into the 1950's, retained the provision regarding dry hole costs. They also, in the case of productive wells, gradually extended the term "incidental expense of drilling" to embrace all expenditures of an "intangible" nature. Today, the expenses of drilling and equipping productive wells that may be charged off as incurred include costs of labor, fuel, power, materials, supplies, tool rental and repairs of drilling equipment. These typically account for two-thirds or more of the total expense of drilling and equipping productive wells.

The effect of the administrative rulings was twofold. First, they provided for the deduction, through either depreciation or current expense, of all outlays in drilling and equipping wells *in addition to* the depletion allowance. Second, they provided for the current expensing (as opposed to amortization over time) of all unsuccessful exploration expenses, plus the greater part of the expenses of drilling and equipping productive wells. The depletion allowance thus became a supplement to, rather than a substitute for, cost-based capital consumption deductions. In addition, most actual capital outlays became subject to super-accelerated amortization.

With this historical background, we may now examine in greater detail the special tax provisions applying to income from oil and gas production.

II

DISTINCTIVE TAX TREATMENT AT PRESENT

The deduction for oil and gas depletion in a tax period must presently be computed for each separate productive property or

4. For a more detailed discussion of these rulings see Galvin, *The "Ought" and "Is" of Oil-and-Gas Taxation*, 73 Harv. L. Rev. 1465-69 (1960).

operating unit. The deduction is the larger of (1) a *pro rata* (unit-of-production) fraction⁵ of the capitalized costs of the property exclusive of depreciable outlays or (2) 27½ percent of the gross value of the production, not to exceed 50 percent of the net income, of the property during the tax period. The former alternative, known as cost depletion, does not differ in principle from the usual treatment of capital consumption in other industries. The total to be recovered through tax deductions is the initial capitalized cost, and recovery is made in a reasonable, systematic way over the life of the property.

The relevant capitalized costs depend on the manner in which the producing property was acquired. If it was purchased, the full purchase price would be capitalized and the portion not attributable to depreciable assets would be the basis of cost depletion. If the property was acquired through discovery, the capitalized costs would normally be confined to lease acquisition and exploration costs other than dry hole costs, attributable to the property. This is assuming that in the normal case, for reasons to be explained, the affected operator would choose to expense dry hole and intangible development costs.

The alternative method of computing allowable depletion is percentage depletion. Under this alternative, the total tax deductions that result are not limited to the initial capitalized cost of the depletable asset and ordinarily exceed the initial capitalized cost. The cost depletion and percentage depletion alternatives are available to those having direct ownership shares in the mineral being produced. These include operating interests, royalties, and other shares of production. Also, there is no distinction between foreign and domestic location of production.

For operators of oil and gas properties, who are usually lessees, the gross income on which percentage depletion is based is exclusive of royalties paid. This is so because the royalty owner is entitled to depletion on his share of production. The operator's net income, pertinent to the 50-percent-of-net limitation on percentage depletion, is computed as the difference between gross income after royalties and all costs except depletion attributable to property in the tax period. Such costs include: production expenses (inclusive of production taxes and an apportionment of overhead), *ad valorem* taxes, allocable interest, depreciation of tangible investments in wells and equipment, the cost of dry holes, and the intangible expenses of drilling productive wells unless such expenses are capitalized. Costs

5. A fraction equal to the ratio of the tax period's production to estimated total production over the lifetime of the affected property.

not attributable to producing properties do not act as potential limitations on allowable percentage depletion but are otherwise fully deductible for tax purposes. Such costs not attributable to producing properties include: the costs of surrendered leases, dry holes and other unsuccessful exploration activity on nonproducing properties, interest, taxes, and overhead allocable to such properties.

Due to the 50-percent-of-net limitation and the requirement of computing allowable percentage depletion separately for each individual property, the effective percentage depletion rate for the typical producing firm is less than 27½ percent. For large firms the average effective rate is about 26 percent.⁶ For all producing firms the average is probably lower, perhaps closer to 25 percent. Moreover, the percentage depletion allowance is not all net benefit because in using this option the taxpayer forfeits the right to separate deductions for capitalized costs subject to depletion. These capitalized costs subject to depletion include at least the lease acquisition and exploration costs (other than dry hole costs) attributable to productive properties. These forfeited deductions typically amount to about two percent of gross income.⁷ So the average effective net percentage depletion benefit is in the neighborhood of 23 percent of gross income.

The other type of distinctive tax provision applying to income from oil and gas production pertains directly to the *timing* of deductions reflecting two major categories of expense. Also affected indirectly is the total *amount* of allowable capital consumption deductions. The oil and gas producer has the option of either capitalizing intangible development costs and recovering them through depletion or writing them off as a current expense. If he elects to capitalize intangible development costs, the producer has the further option of capitalizing dry hole costs and recovering them through depletion or expensing them as incurred.

There are two advantages to expensing these costs, provided the taxpayer has otherwise sufficient taxable income to cover them. First, their current expensing yields an imputed interest saving in comparison with capitalization and recovery over an extended period of time. For example, assume a \$100 outlay that for tax purposes may be either expensed immediately or amortized by the straight-line method over a period of ten years. Given a nominal income tax rate of 50 percent, immediate expensing results in a tax

6. This figure is based on a Treasury sample of large corporations accounting for over 90 percent of total oil and gas depletion claimed in the years 1958-60. U.S. Treasury Dep't, Depletion Survey, 1958-60 (mimeo. 1963).

7. For the derivation of this figure, see S. McDonald, *Federal Tax Treatment of Income from Oil and Gas* 17n. (1963).

deduction having a present worth of \$50. With a discount rate of ten percent, amortization over ten years results in tax deductions having a present worth of approximately \$34. Expensing thus saves the taxpayer the current equivalent of \$16.⁸ Secondly, the expensing of intangible development and dry hole costs enhances the value of percentage depletion. If capitalized, these costs are recoverable only through depletion; but if expensed, they are recoverable in addition to depletion. Hence the *net* benefit of percentage depletion—the allowable depletion in excess of alternative cost-based depletion—is enlarged by the election to expense intangible development and dry hole costs.⁹

The benefit of expensing major capital outlays in combination with percentage depletion may be clarified by means of an illustration. Assume a lessee corporation operating two productive properties as in Part A of Table I.¹⁰ Further assume that the firm chooses to expense intangible development and dry hole costs. All intangible development costs and such dry hole costs as are attributable to productive properties enter into the expenses. These expenses must be deducted from gross income after royalties to determine the net income to which the 50 percent limitation of allowable depletion applies. Here it is assumed that such expenses are high enough to make the 50-percent-of-net limitation effective on property B, but not on property A. Thus, although the two properties have the same gross income after royalties, property B is allowed a depletion deduction of only \$100,000 while property A is allowed \$137,500, the full 27½ percent of gross income. Together, the two properties are allowed a depletion deduction, in addition to deductible costs attributable to them, of \$237,500, or 23.75 percent of gross income.

In Part B of Table I the computation of federal income tax is completed. After deductions from gross income for costs attributable to individual properties and allowable depletion, the remainder is further reduced by deductions for all other costs of doing business. These other costs include the costs of dry holes drilled on unproductive properties. These costs are assumed to be \$162,500, leaving a taxable income of \$100,000. The federal income tax liability, assumed for convenience to be exactly 50 percent of taxable income, is \$50,000.

8. The saving would, of course, be larger if the discount rate were higher, or smaller if some more accelerated plan of amortization were allowed.

9. This statement is subject to one important qualification. Since the expensing of costs pertaining to productive properties reduces the current net income from such properties, expensing of intangibles and dry hole costs may reduce allowable percentage depletion through the 50-percent-of-net limitation.

10. This illustration is adapted from McDonald, *supra* note 7, at 20.

Table 1
COMPUTATION OF ALLOWABLE PERCENTAGE DEPLETION DEDUCTION
AND FEDERAL INCOME TAX LIABILITY, HYPOTHETICAL CORPORATION

A. Allowable percent depletion deduction

	Properties	
	A	B
Gross income after royalty	\$500,000	\$500,000
Less: Intangible development costs	—150,000	—250,000
Other costs attributable to property	— 50,000	— 50,000
Net property income before depletion	300,000	200,000
(27½ percent of gross)	(137,500)	(137,500)
(50 percent of net)	(150,000)	(100,000)
Less: allowable depletion	—137,500	—100,000
Net property income after depletion	162,500	100,000

B. Federal income tax liability

	Both properties consolidated
Gross income after royalty	\$1,000,000
Less: Costs attributable to properties	— 500,000
Net property income before depletion	500,000
Less: Allowable depletion deduction	— 237,500
Net property income after depletion	262,500
Less: All other costs of doing business	— 162,500
Net taxable income	100,000
Less: Federal Income tax	— 50,000
Net income after tax per tax return	50,000

In choosing the percentage depletion option, the corporation forfeits the right to take separate deductions representing amortization of lease acquisition and exploration costs (other than dry hole costs) attributable to productive properties. If such deductions would have been \$37,500, the net excess of percentage depletion over alternative cost-basis depletion would be \$200,000, so that the firm's actual net income before taxes is \$300,000¹¹ and the effective tax rate is only 16 2/3 percent.

11. If the firm amortized intangible development costs for its own internal records, as many firms do, net income as shown by its accounts would further differ from tax return net income by the excess of current intangible outlays over current amortization charges. All firms expense dry hole costs for purposes of internal accounts, so no difference from tax return net income arises due to different treatment of these costs. For a survey of accounting practices in the petroleum industry see Horace R. Brock, *Accounting for Leasehold, Exploration and Development Costs in the American Petroleum Industry* (unpublished doctoral thesis, The University of Texas, 1954).

It should be clear from the illustration that the corporation could have a substantial net income without any current income tax liability at all. For example, if intangible development costs on property A were \$25,000 greater and dry hole costs on unproductive properties were \$75,000 greater, allowable depletion would be unaffected, actual income would be \$200,000, and taxable income would be zero.¹² Of course, the reduction of current tax liability due to the expensing of capital outlays is mere postponement. However, the postponement may last (and be enlarged) indefinitely if the affected corporation continues to grow rapidly enough. Furthermore, the firm may sell one or more of its properties for capital gains before ordinary income tax liability catches up. Thus postponed income is subjected to a maximum tax rate of 25 percent. In any case, the postponement of tax liability yields an imputed interest saving, as explained above.

To sum up, the distinctive tax provisions applying to income from oil and gas production usually allow the affected taxpayer to make deductions from gross income that in total exceed actual costs incurred. They also allow the taxpayer to treat some major categories of cost as current operating expenses even though they are incurred to acquire assets of long productive life. These provisions may be viewed, then, as devices of reducing the effective rate of taxation of income from oil and gas production relative to that applying to ordinary income earned in other pursuits. The package is especially valuable to rapidly growing firms that each year have a large volume of drilling, exploration and development, nearly all of the expenses of which may be charged off against current income.

III

THE ISSUE OF TAX NEUTRALITY

The immediately foregoing observations lead directly to the standard economic criticism of percentage depletion and expensing privileges. The criticism is that they are not neutral with respect to the allocation of economic resources among different industries. On the premise that in the absence of income taxation resources would be optimally allocated among industries, it is argued that ideally income taxes should be levied in such a way as to induce no changes in the allocation of resources. It is asserted that distinctive tax treatment of income from oil, gas, or other commercial minerals violates that ideal. It violates the ideal by reducing the relative

12. In fact, some oil and gas producers have managed to escape income taxation in some years. For a number of examples see 103 Cong. Rec. 3978 (1957).

effective income tax rate in the mineral industry. This treatment attracts to the industry some labor and capital that would have produced a greater product in an alternative location. The result is a lower real income for society at large.

A leading statement of the unneutrality thesis with respect to percentage depletion and expensing privileges is that of Arnold C. Harberger.¹³ Presented in terms of a simple model, the thesis refers explicitly to corporate income tax, although the conclusions would apply, with suitable allowance for rate progressivity, to personal income tax as well. The model abstracts from differences in risk among industries, so that investors discount expected incomes at uniform rates. The model assumes that the income tax, corporate or personal, is not shifted in any degree. Following Harberger, let us imagine two kinds of real assets, corresponding to two different industries, one a machine and the other a mineral deposit. Assume that at the margin these two assets are economic equivalents in the sense that the streams of income expected from them, net of other costs but before provision for depreciation or depletion, are identical. It is readily apparent that these two assets would be equally attractive to investors if (a) there were no income tax or if (b) the two income streams were subject to identical effective rates of taxation. This is another way of saying that equal investments in these assets would yield equal rates of return under either of the two conditions. Therefore, with identical effective rates of taxation, the allocation of capital between the two kinds of assets (two different industries) would be the same as if there were no tax at all. If the allocation of capital were optimal in the absence of a tax, it would be optimal with an equally effective tax. It is also apparent that if income from the mineral deposit were subjected to a lower effective tax than income from the machine because of total tax deductions in excess of costs and accelerated amortization of certain costs, its present worth would be greater than that of the machine following imposition of a nominally uniform tax. Capital would flow from investments in machines to investments in minerals until relative price and cost adjustments once again made the present worth of each equal. In the new equilibrium there would be a larger amount of capital invested in minerals and a smaller amount in machines. If the allocation of capital were optimal in the absence of a tax, it would not be optimal with unequal effective rates of tax. Since optimality of resource allocation implies maximum ag-

13. Harberger, *The Taxation of Mineral Industries*, Federal Tax Policy for Economic Growth and Stability, Joint Comm. on the Econ. Rep., 84th Cong., 1st Sess. 439 (1955).

gregate real income, differential taxation imposes a cost upon society as a whole in the form of reduced real income.

This conclusion with respect to corporate income tax must be qualified in the light of at least two considerations.¹⁴ First, the tax does not apply to all returns to capital in all uses or industries. It does not apply to rent and interest incomes earned through the medium of corporations. Nor does it fall directly upon the net incomes of unincorporated businesses. Therefore, even with equal effective rates, the tax is basically unneutral with respect to the allocation of capital among industries. Second, the assumption that resources would be optimally allocated in the absence of the subject tax abstracts from other existing forms of taxes that significantly affect, often with deliberate design, the allocation of resources among industries. Severance, excise and selective sales taxes, to which oil and gas products are widely subjected, are obvious cases in point. Given the resulting unneutralities, it is not necessarily true that the supposed reallocative effects of distinctive tax treatment of oil and gas income lead to a lower real income for society.

But there is a more fundamental objection to the unneutrality thesis with reference to corporate income tax. The thesis assumes that the tax is not shifted in any degree. If it is shifted in some degree,¹⁵ then even with equally effective rates in all industries, the tax itself has reallocative effects. It discriminates against relatively risky and capital intense industries. There is some evidence that the oil and gas industry, in its finding-developing-producing phase, is both relatively risky and relatively capital intense. It follows that the distinctive tax treatment of income from that industry may simply reduce or eliminate the adverse allocative effects of corporate income tax.¹⁶

14. Harberger recognizes both reasons to qualify. See his *The Corporation Income Tax: An Empirical Appraisal*, Tax Rev. Compendium, Vol. I, House Comm. on Ways and Means, 86th Cong., 1st Sess. 231 (1959).

15. For recent major contributions to the debate over the incidence of the corporation income tax see M. Krzyzaniak & R. Musgrave, *The Shifting of the Corporation Income Tax* (1963); Gordon, *The Incidence of the Corporation Income Tax in U.S. Manufacturing*, 57 Am. Econ. Rev. 731 (1967); Cragg, Harberger & Mieszkowski, *Empirical Evidence on the Incidence of the Corporation Income Tax*, 75 J. Pol. Econ. 811 (1968).

16. This argument is developed in McDonald, *Percentage Depletion and the Allocation of Resources: The Case of Oil and Gas*, 14 Nat'l Tax J. 323 (1961). For critical comments on the argument see Eldridge, *Rate of Return, Resource Allocation and Percentage Depletion*, 15 Nat'l Tax J. 209 (1962); Musgrave, *Another Look at Depletion*, 15 Nat'l. Tax J. 205 (1962); Steiner, *The Non-Neutrality of Corporate Income Taxation—With and Without Depletion*, 16 Nat'l Tax J. 238 (1963). Replies are given in McDonald, *Percentage Depletion and Tax Neutrality: A Reply to Messrs. Musgrave and Eldridge*, 15 Nat'l Tax J. 314 (1962); and *On the Non-Neutrality of Corporate Income Taxation: A Reply to Steiner*, 17 Nat'l Tax J. 101 (1964).

The argument is as follows.¹⁷ Suppose that a flat-rate corporate income tax is newly imposed. Also assume that the tax is fully shifted forward in the sense that in all industries, prices per unit of output are raised sufficiently to restore after-tax rates of return to pretax levels. To demonstrate the effect on relative prices, all money values are expressed as amounts per unit of product and n is defined as the ratio of return on capital (N) to sales price (P) in the initial situation of no tax. Then: (1) $n = rk$, where r is the rate of return on capital (N/K) in the initial situation and k is the capital intensity (K/P) in the initial situation. Assume that r is the "normal" rate of return that will be restored by shifting corporate income tax, and that k is a constant throughout the adjustment process. Let n' be defined as N'/P , where N' is the return on capital gross of tax after full adjustment to the tax (T). By definition $T = tn'$, where t is the effective income tax rate. Full incorporation of the tax into the sales prices requires that: (2) $P' = P + tN'$, where P' is the sales price after full adjustment to the tax. The percentage change in price c on account of the tax is:

$$(3) \quad \frac{P' - P}{P} = \frac{tN'}{P} = tn'$$

Since:

$$n' - tn' = n,$$

$$n' = \frac{n}{1 - t},$$

$$tn' = \frac{tn}{1 - t}.$$

Substituting from equations (1) and (3) in (4), we have:

$$(5) \quad c = \frac{trk}{1 - t}.$$

Applying this conclusion to two hypothetical industries—manufacturing and oil and gas production—it can be seen that if the same effective tax rate is applied to the two they will experience the same percentage change in price only if $(rk)_1$ is equal to $(rk)_2$. If $(rk)_2$ is larger than $(rk)_1$, then equal effective rates of taxation will

17. The following is adapted from McDonald, *supra* note 7, at 53-55.

mean a rise in the relative price of oil and gas and a reallocation of resources at the expense of that industry. In this case, neutrality calls for a lower effective tax rate on oil and gas income. This could be achieved by allowing the oil and gas industry a special exclusion from gross income. If d represents this exclusion, expressed as a percentage of the initial price P , the condition of neutrality is (6) $d = (rk)_2 - (rk)_1$. If the exclusion is expressed as a percentage of the adjusted price P' , then the exclusion so expressed e is equal to $d/(1 + c_1)$, where c_1 is the percentage increase in the price of the product of manufacturing. Accordingly,

$$(7) \quad e = \frac{(rk)_2 - (rk)_1}{1 + c_1}.$$

In effect, e is a neutralizing percentage depletion rate.

If we could derive representative "normal" values for r and k in manufacturing and oil and gas production then we could calculate the neutralizing percentage depletion rate. We could also compare it with the actual net effective rate of about 23 percent of gross income.¹⁸ This writer has attempted to do this elsewhere¹⁹ using Internal Revenue Service data for corporations in the industrial categories "Manufacturing, except Petroleum and Coal Products" and "Oil and Gas Production." That study took the period 1949-1956 (except for 1952, for which data are unavailable) as "normal" years.²⁰ The results, based on total capital and total returns to capital, are:

	<i>Manufacturing</i>	<i>Oil and Gas Prod.</i>
Rate of return (r)	10.3%	20.2%
Capital intensity (k)	.523	1.41
Neutralizing exemption (e) ²¹		21.9%

The estimated neutralizing percentage depletion rate of 21.9 percent is quite close to the net effective rate of about 23 percent. However, the rate of return and capital intensity data for "Oil and Gas Production" have been challenged as heavily reflecting foreign operations.²² When predominantly foreign producers are eliminated

18. See text following note 7, *supra*.

19. McDonald, *supra* note 16, at 333-36.

20. The sources were: U.S. Internal Revenue Service, *Statistics of Income*, Pt. 2, *Corporation Income Tax Returns*; and *Source Book of Statistics of Income* (1949-56).

21. Assumes a nominal tax rate of 50 percent.

22. Eldridge, *supra* note 16, at 215.

in the "Oil and Gas Production" category, the comparable results are:

	<i>Manufacturing</i>	<i>Oil and Gas Prod.</i>
Rate of return (r)	10.3%	14.5%
Capital intensity (k)	.523	1.43
Neutralizing exemption (e)		14.5%

Thus, if "normal" domestic rates of return are considered, the relevant rates for computing a neutralizing percentage depletion rate, the result is a rate (14.5 percent) that is well below the actual net rate of about 23 percent. On this basis, the current percentage depletion allowance is more than neutralizing. This is a conclusion which is strengthened when the additional effect of expensing capital outlays is allowed for.

The foregoing argument that distinctive tax treatment of income from oil and gas may only offset the unneutrality of corporate income tax is subject to a number of criticisms. First, it is widely doubted that the tax is shifted.²³ If it is not, the argument fails, and if it is only partially shifted, the conclusions of the argument must be modified in degree. Second, there is some doubt that the observed relatively high rate of return in the extractive phase of the petroleum industry, particularly in foreign operations, is due to differential riskiness.²⁴ If it is due to imperfect competition, then it reflects distinctive tax treatment in part so that the argument is circular. Third, one may attribute the relatively high capital intensity of petroleum extraction in large part to wasteful overdrilling induced or permitted by state conservation regulation.²⁵ An induced inefficiency in the industry can hardly be used to rationalize distinctive tax treatment. Fourth, it may be argued that percentage depletion itself contributes to high capital intensity by motivating integrated producer-buyers to overprice petroleum (so as to increase the allowance). This attracts entry and creates overcapacity under market-demand regulation of production.²⁶ If this point has validity, then the foregoing argument that distinctive tax treatment may be reneutralizing is circular. Finally, it may be pointed out that in the oil and gas industry the burden of corporate income tax and the benefits of distinctive tax treatment are at least partially shifted

23. See the works referred to in note 15, *supra*, and Musgrave, *supra* note 16, at 206-08.

24. Eldridge, *supra* note 16, at 214-16.

25. Kahn, *The Depletion Allowance in the Context of Cartelization*, 54 Am. Econ. Rev. 286, 301 (1964).

26. *Id.* at 303-05.

backward to recipients of rent (lease bonuses and royalties).²⁷ To that extent, the relative prices of oil and gas are unaffected by tax or benefits, and equity rather than neutrality becomes the relevant issue.

If one assumes that corporate income tax is fully shifted forward, that the "normal" rate of return should reflect foreign as well as domestic operations, and that the remainder of the above criticisms of the "reneutralizing" thesis are without merit, then it is possible to defend percentage depletion. But it is not possible to defend the entire benefit package including the expensing of capital outlays, against the charge that it is unneutral and damaging to national income. On the other hand, if one assumes that the tax is not shifted, that only domestic rates of return are indicative of the "normal," or that one or more of the remaining criticisms of the "reneutralizing" thesis are valid, then it must be concluded that percentage depletion is substantially unneutral and presumably damaging to national income. It is not now possible to say conclusively which set of assumptions is correct, although the majority professional view would probably favor the latter. If neutrality is to be the defense of percentage depletion and related tax benefits, the most convincing case is probably to be built on the effects of these special provisions within the tax system as a whole. This would include property, severance and sales taxes which bear heavily on oil and gas and their products.

It may be observed that neutrality is not the only criterion of good taxation. This is true, but neutrality is addressed to the fundamental economic issue of cost-benefit. It is interesting (and ironic, in view of the unneutrality criticism) that oil and gas industry arguments in support of the distinctive tax provision seem implicitly to accept as a premise the proposition that they are "special incentives" and hence are unneutral. Thus, by encouraging the finding and production of oil and gas the provisions allegedly promote national defense, economic growth, conservation and consumer interest by making possible "an adequate supply of petroleum products at reasonable prices."²⁸ The nature of the neutrality issue calls our atten-

27. Davidson, *Public Policy Problems of the Domestic Crude Oil Industry*, 53 Am. Econ. Rev. 103 (1963).

28. Mid-Continent Oil and Gas Association, *Percentage Depletion, Economic Progress, and National Security* 83 (1961). This publication provides probably the most thorough recent statement of the industry arguments for percentage depletion and related provisions. Another well-rounded presentation of the industry's case is in R. Gonzales, *Percentage Depletion for Petroleum Production*, Tax Rev. Compendium, Vol. 2, House Comm. on Ways and Means, 86th Cong., 1st Sess. 985, 1008 (1959).

tion to the stimulus to oil and gas production and the costs of such stimuli to other industries and the economy as a whole.

IV

THE APPLICATION OF PERCENTAGE DEPLETION TO LAND-OWNERS' ROYALTIES AND LEASE BONUSES

The application of percentage depletion to landowners' royalties and lease bonuses (hereinafter shortened to "royalties")²⁹ raises issues different from those involved in the case of operators who actively search for and produce the minerals. Mineral royalties paid to land owners usually consist almost entirely of Ricardian or pure economic rent. Except as they compensate for the income of alternative foregone land uses,³⁰ such payments have a different economic significance from payments to laborers and capitalists. Presumably, the latter are necessary to call forth productive services. The pure rental of mineral royalties, in contrast, is a residual value in excess of that necessary to induce production. It is a residual which accrues only by virtue of ownership of a nonreproducible good. It is clear that such incomes could be taxed at rates approaching 100 percent without reducing the supply of goods and services. Relatively heavy taxation of economic rents, implying relatively light taxation of income to productive services, would increase the net real returns to productive activity and thus presumably would increase the latter with benefit to all. It is ironic then that our prevailing income tax laws provide for relatively light taxation of landowners' royalties. The probable net cost in national income foregone compounds the apparent inequity of a functionless inequality of effective tax rates.

The matter may be carried a bit further. The size of the landowner's economic rent is not independent of the benefits to operating interests of percentage depletion and related provisions. Prospective lessees bid against each other in competition for exploration and production rights. Given the uncertainties of success in exploration, bids tend to approach the point where anticipated gross in-

29. Lease bonuses as received may be treated as advance royalties and hence subject to the percentage depletion allowance. If production is never established on the property for which the bonus was paid, the recipient must recompute his income tax liability for the years affected and treat the lease bonus as ordinary income.

30. Where royalties are paid to those who have specifically purchased the right to receive them, separate from or in addition to the rights to use the land surface, the receipts may be regarded as return on capital to the purchaser; but the seller is then the recipient of the economic rent involved, this rent having been capitalized in the selling price of the mineral rights.

come after lease bonus, royalty and taxes is just sufficient to compensate labor and capital for the services necessary for production under prevailing technical and regulatory practices. The lower the prospective taxes on income from production, the higher the possible bids to land-owners. In short, at least some of the benefits to operating interests of percentage depletion and related provisions are undoubtedly passed back to land-owners. This is done in the form of higher rents which are subject to percentage depletion and hence relatively low effective income tax rates. To the extent that there is such a return to land-owners, the possible gross benefits of the distinctive tax provisions to consumers of affected mineral products are reduced. The arguments for these provisions in terms of such benefits are weakened, and the criticisms in terms of inequity and economic inefficiency are strengthened.

CONCLUSIONS

Percentage depletion and the expensing of certain capital outlays result in a lower effective income tax rate for oil and gas producers than that prevailing in most other industries. As to operators engaged in exploration, development and production, there is a central economic issue: Do these distinctive tax provisions induce an allocation of resources in industry different from that which would prevail in a no-tax situation thereby making them "unneutral"? Under assumptions most favorable to the industry, we conclude that percentage depletion may be reasonably consistent with neutrality. However, the combined effect of percentage depletion and expensing privileges is probably unneutral, thereby inducing an uneconomical allocation of resources to oil and gas production. Under assumptions less favorable to the industry but more consistent with majority professional opinion, we conclude that the distinctive tax provisions are markedly unneutral. Consequently, there are important misallocative effects. The analysis and conclusions, however, abstract from taxes other than income taxes. In the context of the entire national tax system, it is possible that distinctive tax treatment of income from oil and gas is more nearly consistent with the ideal of neutrality.

As applied to bonuses and royalties of land-owners, the effect of percentage depletion is inequitable and economically perverse. This conclusion is reinforced by the consideration that operators' tax benefits are at least partially returned to land-owners in the form of higher rents. As long as the capital gains alternative is available to royalty owners, this glaring defect in our income tax system cannot be removed by simple deletion of the percentage depletion provision.