

Capital Investment Incentives

One of the more controversial issues arising from the President's recent plan for tax reform is whether it will stimulate business investment spending.¹ The reforms are aimed at fostering greater capital formation, especially over the long term, by moderating the distorting effects of the present corporate tax system on the composition of investment. However, a number of economists—including Martin Feldstein and Murray Weidenbaum—have criticized the approach taken in the proposal, arguing that it will stifle spending for new investment in the near term by scaling back existing tax incentives.²

In this capsule we look at how the President's proposal would alter the effective marginal tax rates cur-

¹The complete plan is presented in *The President's Tax Proposals to the Congress for Fairness, Growth, and Simplicity* (May 1985), United States Government Printing Office

²See Martin Feldstein, "Improving the President's Tax Reform Proposal", Testimony before the House Ways and Means Committee (June 11, 1985), and Murray L. Weidenbaum, "The Case Against Tax Reform in 1985", Occasional Paper No. 40, Center for the Study of American Business, Washington University-St. Louis (March 1985)

rently applied to income from investment in fixed capital.³ Our analysis indicates that the reform package would substantially raise effective tax rates on investments in producers' durable equipment (PDE) while reducing them on investments in structures. On this basis, we conclude that the near-term effect will be to slow investment spending on PDE, but to encourage investment in business structures. These effects will persist in the long run as well. At the same time, the proposal would also lead to tax rates that are roughly equivalent across different assets and industries. Therefore, some offset to the overall smaller stock of capital might result from investment expenditures being allocated more on the basis of economic returns than on tax considerations.

Investments in fixed capital are now taxed at widely differing effective marginal rates across asset categories and industries. In fact, effective tax rates not only vary considerably; they are positive for structures but *negative* for most categories of PDE—indicating a tax subsidy.⁴ As shown in Table 1, tax rates on investments in PDE range from a high of 7 percent to a low of -57 percent, while for business structures the rates are strictly positive, ranging from 28 percent to 48 percent. The problem with tax rates that are so unequal is that they bias investment decisions. First, within a particular industry they encourage firms to invest in certain assets over others, and second, within a given asset category they favor investments in some industries over others.

Several features of the corporate tax structure contribute to the wide variation in effective tax rates. One is that the statutory depreciation allowances under the Accelerated Cost Recovery System (ACRS)⁵ are more generous than a deduction for actual economic depreciation would be. Thus, the cost of capital—and hence effective marginal tax rates—across different assets depends on the excess of ACRS depreciation over

³The effective marginal tax rate (t) is defined as $t = (c-r)/c$, where c is the before-tax rate of return on fixed capital net of economic depreciation and r is the after-tax return. For a more detailed discussion of the theory behind this measure, see Alan J. Auerbach and Dale W. Jorgenson, "Inflation-Proof Depreciation of Assets", *Harvard Business Review*, Volume 58 (1980), pages 113-118, and Jane G. Gravelle "Effects of the 1981 Depreciation Revisions on the Taxation of Income from Business Capital", *National Tax Journal*, Volume 35 (1982), pages 1-20.

⁴A negative effective marginal tax rate means that an investment's after-tax rate of return is greater than its before-tax rate of return. In other words, the investment is receiving a tax subsidy. For example, with an effective rate of -50 percent, an asset earning a 7 percent rate of return before taxes really earns a 10.5 percent return after taxes. This type of subsidy comes from built-in features of the tax code, such as accelerated depreciation and the investment tax credit.

⁵The Accelerated Cost Recovery System went into effect with the enactment of the Economic Recovery Tax Act in 1981. All calculations of effective tax rates also include modifications to ACRS from the Tax Equity and Fiscal Responsibility Act of 1982.

economic depreciation. ACRS also effectively leads to varying tax rates across industries because the composition of capital assets held by firms differs among sectors of the economy

A second feature leading to dissimilar tax rates is the investment tax credit (ITC). This provision of the tax code was designed to stimulate investment spending by giving firms a credit from 6 percent to 10 percent of the cost of new investments against their tax bill. Since the ITC applies only to investments in tangible capital, its implicit effect, particularly in conjunction with ACRS, has been to favor the capital-intensive sectors of the economy. The ITC also favors investment in industries that are profitable, and therefore better able to make

use of credits to shelter income from taxation. Moreover, since the ITC only applies to investment in equipment, it favors PDE relative to structures.

Finally, the "first-in-first-out" (FIFO) method of inventory accounting also contributes to the wide variation in effective tax rates on capital. With inflation, the FIFO method creates accounting profits which raise a firm's overall tax liability.⁶ The extent to which this occurs, however, differs by industry according to the

⁶Under the FIFO method of inventory valuation, inflation will push the sale price of an inventory item above its original book value. As inventories are depleted, firms realize the difference between the sale price and the book value as profit subject to tax. This results in a higher effective tax rate on corporate income and, hence, on investments in fixed capital as well.

Table 1

Effective Marginal Tax Rates on Investments in Fixed Capital Under Current Law*

In percent, by sector

Asset category	Agriculture	Mining	Construction	Durables manufacturing	Nondurables manufacturing	Transportation, communications, and utilities	Trade and services
Producers' durable equipment							
Computing, electric, and communications	-6	-57	-53	-42	-48	-34	-57
Transportation	7	-40	-42	-33	-37	-37	-36
Agricultural and mining	-3	-45	-45	-21	-22	-24	-21
Light industrial	-1	-35	-36	-24	-21	-36	-32
Heavy industrial	-4	-44	-46	-27	-24	-25	-27
Structures							
Commercial, industrial, and mining	48	35	28	32	31	29	32

*For a definition of the effective marginal tax rate see Jane G. Gravelle, *op cit*. All calculations are made on the basis of a 4 percent real after-tax return on equity, and a 5 percent rate of inflation. While the absolute levels of the effective marginal tax rate estimates are sensitive to the real rate of interest and the rate of inflation, the relative differences across asset categories and sectors are fairly robust with respect to these assumptions.

Table 2

Effective Marginal Tax Rates on Investments in Fixed Capital Under the Administration's Tax Reform Proposal*

In percent, by sector

Asset category	Agriculture	Mining	Construction	Durables manufacturing	Nondurables manufacturing	Transportation, communications, and utilities	Trade and services
Producers' durable equipment							
Computing, electric, and communications	23	21	21	21	21	19	19
Transportation	20	18	18	19	18	17	18
Agricultural and mining	17	17	17	16	15	15	16
Light industrial	20	18	17	18	17	17	17
Heavy industrial	19	17	17	19	16	16	17
Structures							
Commercial, industrial, and mining	29	33	26	27	27	26	27

*The tax reform proposal is described in *The President's Tax Proposals to the Congress for Fairness, Growth, and Simplicity, op cit*. For a definition of the effective marginal tax rate see Jane G. Gravelle, *op cit*. All calculations are made on the basis of a 4 percent real after-tax return on equity, a 5 percent rate of inflation, and a 75 percent switchover to indexed FIFO inventory accounting. While the absolute levels of the effective marginal tax rate estimates are sensitive to the real rate of interest and the rate of inflation, the relative differences across asset categories and sectors are fairly robust with respect to these assumptions.

inventory-to-output ratio and the percent of inventories accounted under the FIFO method. For example, the agriculture sector holds a high proportion of its annual output as inventories—54 percent as compared with an economy-wide average of about 22 percent—and approximately 97 percent of those inventories are valued under FIFO. Together, these factors lead to comparatively higher, or less negative, effective tax rates in this sector of the economy than in other sectors.⁷

The President's reform plan recommends four major changes to the corporate tax system. First, the depreciation lives of assets would be lengthened relative to those allowed under ACRS, and the depreciable basis would be indexed for inflation. Indexing the depreciable basis is relevant mainly for long-lived assets such as structures, where failure to do so substantially raises effective tax rates at even low levels of inflation. Second, the tax plan would eliminate the investment tax credit. A third change would give firms the option of indexing the book value of FIFO inventories to eliminate accounting profits due to inflation. Finally, the proposal would lower the maximum marginal tax rate on corporate income from 46 percent to 33 percent.

The President's tax proposal should greatly reduce the present variation in effective marginal tax rates across asset categories and industries (Table 2). Although the discrepancy between effective tax rates on PDE and structures would be narrowed considerably, tax rates on equipment would still be comparatively lower. We estimate that tax rates on investments in PDE would be higher than they are now and range from 15 percent to 23 percent, while tax rates on structures would be lower than at present and range from 26 to 33 percent.

When evaluated in terms of its impact on effective marginal tax rates, the President's tax plan is, on the whole, likely to depress investment spending. Since the incentives to invest in PDE would not be nearly as great as they are now, spending on durable equipment is likely to fall significantly. This would be partially offset by a boost to investment spending on structures. However, with tax considerations less of a factor in determining the allocation of investment spending, the capital stock, though smaller, is likely to be more productive.

⁷We estimate that the FIFO inventory accounting method has raised the effective tax on corporate income in the agriculture sector from the statutory rate of 46 percent to 67 percent. In contrast, the trade and services sector holds only about 12 percent of its annual output as inventory. With such a low inventory to output ratio, the increased tax liabilities from FIFO accounting are insignificant, therefore the effective corporate income tax rate is essentially the statutory rate. Consequently, the corresponding effective tax on investment in fixed capital is greater in the agriculture sector.

Nestor D. Dominguez and Peter D. Skaperdas