

An International Comparison of Effective Corporate Tax Rates

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During the spring of 1980 the Institute joined an international project initiated by the National Bureau of Economic Research (NBER) in the United States aiming at comparing effective marginal tax rates on capital income derived from corporate investment in four countries: the United States, Great Britain, West Germany and Sweden.

The procedure employed in the first part of the research project may be described in a fairly simple way. Assume that an investment project undertaken by a firm earns a before tax real rate of return of p %. Using the statutory tax rules, the after tax real rate of return of the saver who supplied the necessary finance may then be calculated. Let this post-tax rate of return be s %. The "tax wedge" between the before and after tax returns determines the effective tax rate:

$$t = \frac{p-s}{p}$$

This tax wedge between the pre-tax return on the firm's real investment and the post-tax return to the individual saver is determined by several kinds of taxes. On the individual side, there is the wealth tax, income tax on interest receipts and dividends and capital gains tax. For the firm, there is the corporation tax with its complicated rules of defining taxable income. The tax wedge also depends on whether savings are channeled directly from the household sector to the firms or via some kind of institutional intermediary, e.g., an insurance company. Equally important are the kind of financial instrument the saver invests in and the kind of real assets firms acquire.

For this project we have chosen to calculate effective tax rates for three categories of owners, households, tax exempt institutions and "insurance companies", differing as to the marginal tax rates on interest receipts, dividends and capital gains. Three sources of finance with different tax treatment, debt, retained earnings and new share issues, are taken into account. As for the uses of finance by the firms, finally, three asset types—machinery, buildings and inventories—are considered.

A few preliminary results of the Swedish part of the study appear in Table 8. The table indicates the before tax real rate of return (p) on real investment within the manufacturing industry required to secure a 2 % real after tax return (s) for the different categories that provide the necessary finance. The calculations behind the table reflect the tax rules in effect during 1978. No account of the investment funds system (IF-system) is taken, however. Though an important feature of the Swedish corporate tax system, only

about 20 % of manufacturing gross investments were actually financed via the IF-system during the mid-70's. For these calculations, therefore, we have assumed that the marginal investment is written off according to the regular rules of fiscal depreciation.

The table clearly brings out the highly uneven character of the Swedish system of taxing the return on real investment. The required before tax real rate of return thus ranges from 30.7 % on inventory investment when savings are channeled directly from the household sector by way of an issue of new share capital, to -5.8 % when a tax exempt institution provides debt finance to buildings.

Table 8. *Real rate of return before tax (%) required to obtain a 2 % after tax return*

		Buildings	Machinery	Inventory
Households	Retained earnings	10.9	4.1	10.7
	New share capital	28.4	9.1	30.7
	Debt	11.6	4.2	9.7
Insurance companies	R	14.4	6.1	13.2
	N	12.8	1.6	14.2
	D	3.9	0.2	5.6
Tax exempt institutions	R	7.7	2.3	8.3
	N	1.5	-3.8	2.2
	D	-5.8	-5.1	-2.1
Foreign owners	R	7.7	2.3	8.3
	N	1.5	-3.8	2.2
	D	-5.8	-5.1	-2.1

Calculations of the kind indicated here provide information of relevance to much of the current debate on tax policy. Knowledge of the distribution of tax rates depending, e.g., on source of finance and type of asset presents a framework for appreciating the efficiency effects of present and possible alternative systems of taxing capital income. Recent discussion in the U.S. and the U.K., and also in Sweden, has included proposals to replace present income taxes with an expenditure tax. This would involve effectively exempting from tax the yield on savings. While the debate often proceeds as though this would mark a sharp departure, it turns out that existing rates are far from defining a comprehensive income tax base which would include all returns from saving. A close look at the tax systems of, e.g., the U.S. and Sweden reveals a bewildering array of tax rules affecting the future yield from present consumption foregone. On balance, it is far from clear whether these tax systems, on average, are closer to a "pure" income tax, characterized by a tax rate on capital income equal to that on labor income, or an expenditure tax, with a zero tax rate on the return to savings. To illustrate the point, we may consider the main features of U.S. and Swedish law tending to treat the yield from savings favorably relative to a "pure" income tax.

● Perhaps best known is the special treatment of capital gains. In the first place, such gains are taxed only on realization by sale or exchange; long-term deferral of tax can greatly reduce it. Secondly, in many cases only a fraction of long-term capital gains must be included in the individual income tax base. For the U.S., the inclusion rate is 40 %, irrespective of asset type. Swedish legislation employs rates ranging from zero on personal property to 100 % on real estate; as in U.S. practice, 40 % of long-term gains on financial assets, e.g., shares, constitute taxable income. A special U.S. feature, finally, pertains to inheritance: When assets pass to heirs by bequest the basis for calculating capital gains to the heirs is set at the value at the time of bequest; any gain unrealized during the giver's lifetime thus goes free of income tax.

● In the U.S., contributions by employers to qualified pension plans are excluded from the taxable income of employees; all of the earnings of the pension fund are exempt from tax. The same treatment is accorded contributions to and earnings on retirement plans for the self-employed and employees not covered by a qualified employer plan (subject to, however, rather modest limits on deduction of contributions). Pension payments received are fully taxable to individuals but because typically the taxable income of the worker is lower during retirement than before, pension benefits are likely to be taxed at lower rates than apply at the time of contributions. (Of course, secular increases in tax rates can upset this). Similar tax rules apply in Sweden. As in the U.S., savings for pension purposes are for the most part collectively organized. Employer contributions to the National Pension Insurance Fund are regulated by law, while savings for supplementary pension schemes are determined by way of negotiations between labor market organizations. In addition to this, tax legislation allows deduction from the income tax base (up to a certain limit) of voluntary contributions to individual pension plans supplied by insurance companies. Earnings on these funds are tax exempt.

● In both Sweden and the U.S. the return on savings via life insurance policies is favorably taxed. The formula for taxing insurance companies effectively exempts the yield on policy holder reserves, at least in times of stable prices. Furthermore, the cash value of the policy is not taxed as income to the holder as it increases over time, nor are the proceeds to the beneficiary taxed when received.

● The entire yield in kind of household durables is excluded from tax. For the U.S. this also holds for owner-occupied houses; the associated mortgage interest payment and real estate taxes (though not maintenance expenses and depreciation) are nevertheless deductible from the individual tax base. Sweden differs in this respect by imputing a 3 % (higher rates on more expensive houses) yield on the tax assessment value of owner-occupied houses. The tax assessment values, however, tend to run at approximately 75 % of

the market values prevailing at the time they are set, and an interval of about five years separates revisions in assessment.

- In Sweden, and contrary to the U.S., only real capital gains on owner-occupied houses are taxable. U.S. tax law allows, on the other hand, a \$ 100,000 tax free capital gain once in the lifetime of a taxpayer over age 55. In both countries liberal “roll over” provisions allow the tax payer to avoid realizing gain on sale of a house when he purchases a replacement.

The rules of defining taxable income from real investment within the business sector represent an additional cause of departure from taxing “economic income”.

- It is widely, though not uniformly, believed that the rate at which assets may be written off for tax purposes in the U.S. is excessive in the absence of inflation. This applies especially to real estate, and it is thought to occur also on assets accounted for under the Asset Depreciation Range (ADR) procedures. The regular depreciation rules in Sweden allow accelerated write off mainly on machinery. By the use of the investment funds system (IF), however, firms may obtain the equivalent effect—or more—of expensing for both machinery and buildings. It may also be noted that Swedish tax laws—contrary to the practice in most non-Scandinavian countries—allow firms a 60 % undervaluation of their (FIFO-valued) stocks of inventory.

- In the U.S., a credit against tax is allowed for up to 10 % of the cost of business equipment for domestic use. The full credit is granted for assets with a useful life of 7 years or more; reduced credits are given for less durable assets. Additional investment tax credit allowances are available for corporations making contributions to an employee stock ownership plan (ESOP).

The Swedish counterpart is the possibility of deducting 25 % of the cost of business equipment against taxable income. This provision applies for the 40 % state tax only. For buildings this “investment deduction” is limited to 10 %.

While all of these exemplified elements of the tax system tend to reduce the rate of tax on the yield from savings, two major elements of the tax system work in the other direction. The first is the two-tier system of taxation (“double taxation”) of income arising in corporations.

The *second* element is the tax-increasing effect of inflation working through the procedures by which returns from capital are measured for income tax purposes. The failure to index capital gains and depreciation results in overstatement of income for tax purposes. It is instructive to refer here to some recent studies carried out by economists associated with the NBER. In an analysis of a sample of more than 30,000 individual income tax returns showing capital gains realized on corporate stock in 1973, Martin

Feldstein and Joel Slemrod¹ made the startling discovery that whereas individuals were taxed on \$4.6 billion of such gains, adjustment for the increase in price level would have produced instead a *loss* of nearly \$1 billion. They found, furthermore, that the difference between nominal gains and real gains (commonly losses) varied systematically by income class, with the highest income category experiencing the least divergence and the lowest income category the most. In another study, Martin Feldstein and Lawrence Summers² looked at the overstatement of income attributable to the use of historical cost as the basis for depreciation allowances and to current methods of inventory accounting. According to their estimate, in 1977 the tax burden on corporate sector capital income was larger by \$32 billion than it would have been with properly indexed depreciation allowances and inventory accounting, an increase in effective (average) tax rate from 43 to 66 percent on this income flow.

Another important interaction between inflation and taxation of savings in Sweden and the U.S. occurs in the treatment of interest income. Whereas a part of the nominal return on interest-bearing assets represents a premium for inflation, in both countries this premium is taxed as income. We mention this as secondary to the overstatement of the yield from real investment because it is in principle possible for the nominal interest rate to adjust sufficiently to offset approximately both inflation and the tax on the inflation premium—although in neither Sweden nor the U.S. has such an extreme movement in interest rates with inflation been observed.

The discussion above makes it quite clear that the tax treatment of the rewards to savings in various forms is highly uneven. The tax codes of Sweden and the U.S., furthermore, exhibit a remarkably parallel variation in the treatment of any act of saving according to the particular asset acquired, the form of its ownership and method of financing, the circumstances of its purchase and the rate of general price change. The resulting systems carry with them costs of a well-known sort to individual taxpayers in optimizing their affairs and to the revenue collection agency in defending the fisc. But quite apart from these costs of administration, and certainly far larger in magnitude, are the economic losses due to inefficient resource allocation and the political losses due to what are perceived as inequities in the working of the tax rules.

The specific cases of departure from the norm of a comprehensive income tax presented here are all well-known. Much less familiar are their interrelationships. Little is known, e.g., about how the reliefs provided at the corporate level interact with individual income taxation to determine the overall effective tax burden on the returns to saving. The forthcoming results of the international research project at the IUI will shed light on this issue.

¹See M. Feldstein and J. Slemrod, "Inflation and the Excess Taxation of Capital Gains on Corporate Stock" in *National Tax Journal*, June 1978.

²M. Feldstein and L. Summers, "Inflation and the Taxation of Capital Income in the Corporate Sector" in *National Tax Journal*, December 1979.