

Handbook on Taxation

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The Corporate Income Tax *Impact and Incidence*

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I. INTRODUCTION

While the relative importance of the corporation income tax has generally declined over the past several decades, interest in the corporation income tax by policy makers and researchers has increased. Within the past two decades the corporate tax has undergone a number of changes, including those brought about by the Tax Reform Act of 1986, which reversed some of the revenue decline. These changes, however, only served to highlight many of the concerns with the corporate tax and the role it should play in the federal revenue system. This chapter provides an overview to this history and some of the central aspects of behavior affected by the corporate income tax.

This chapter proceeds as follows. Section II provides a brief overview of the origins of the U.S. corporate income tax, its structure, and its significance as a part of total federal receipts. Section III addresses the effects the corporate tax may have on various aspects of business decision making—organizational form, capital structure, investment, and dividend policy. Section IV discusses the possible incidence and efficiency effects of the current corporate income tax, and a number of suggested modifications under various integration proposals. The final section highlights key issues that remain to be resolved in future research.

II. THE HISTORY, STRUCTURE, AND SIGNIFICANCE OF THE CORPORATE INCOME TAX

The United States employs a “classical” or double-tax system on most corporate income.¹ This means that income will be taxed first at the corporate level and then again at the shareholder level when the income is distributed as dividends. At least part of the reason for this structure is the fact that the corporate income tax predates the individual income tax. One important justification, however, for the existence of a separate level of tax is the idea of a corporation being a separate entity distinct from its shareholders and the recipient of special privileges, such as limited liability.

The U.S. federal income tax on corporations was first enacted in 1909 at a rate of 1 percent on income over the \$5000 exemption level. Since then, both the rate structure and the definition of taxable income have changed numerous times.² Figure 1 provides a graph of the corporate tax rate applicable to corporate income in the highest tax bracket.³

As with any income tax, the corporation income tax requires firms to account for all sources of income and then deduct allowed expenses. Table 1 provides a list of the major

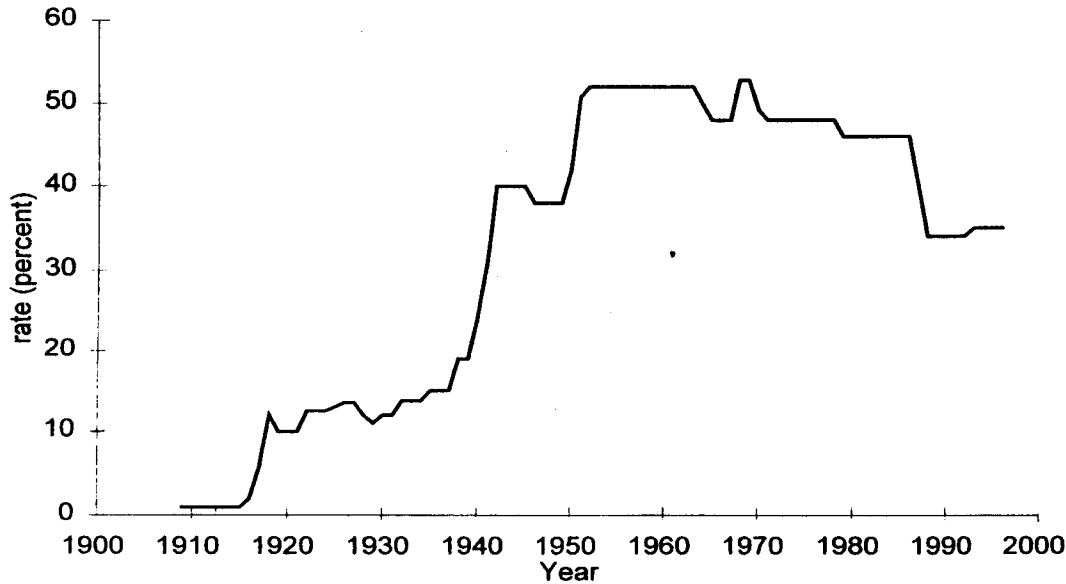


Figure 1 U.S. corporate tax rates. From Pechman (1987), updated by author.

sources of income and deductible expenses of U.S. corporations for tax year 1993, along with the aggregate amounts for each item.⁴ Allowable deductions include the use of losses from prior years and the ability to carry forward (or backward) losses generated in the current year to future years.⁵ The taxable income of the corporation is subject to a graduated tax rate schedule, currently beginning at 15 percent and increasing to 35 percent.

In addition to the regular tax, the Tax Reform Act of 1986 imposed an alternative minimum tax (AMT) on both corporations and individuals.⁶ In the case of corporations, the AMT acts as a parallel tax system, with firms paying the higher of the amounts of tax calculated under the two systems. The calculations of the AMT begins with taxable income as defined by the regular tax (before any deduction for net operating losses). From this base firms add back amounts to account for differences in allowable deductions and accounting methods between the two systems. For example, depreciation under the AMT is slower than under the regular tax, and tax-exempt interest is not excluded in calculating alternative minimum taxable income (AMTI).⁷

In addition, from 1987 to 1989, the book income adjustment (BIA) of the AMT required firms to include in their AMTI half of the difference between their taxable and financial statement income.⁸ The purpose of the BIA, at least as explicitly stated by Congress, was "to ensure that no taxpayer with substantial economic income can avoid significant tax liability by using exclusions, deductions, and credits."⁹ For tax years beginning after 1989, the BIA was replaced with the inclusion of 75 percent of the difference between adjusted current earnings (ACE) and AMTI.¹⁰

Corporations may reduce their tax liability though the use of tax credits. By far the most significant of these is the Foreign Tax Credit, which can reduce a firm's domestic tax liability by the amount of foreign taxes paid, up to the U.S. rate.¹¹ The extent to which credits can be used may be limited by the AMT.

Currently the corporation income tax generates approximately \$150 billion in revenues to the federal government, with the AMT responsible for approximately \$5 billion. Although substantial, the share of government receipts from the corporate tax has been falling, and represents less than 12 percent of overall receipts (Fig. 2).¹²

Table 1 Selected Items Included in the U.S. Corporation Income Tax Base, 1993 (Dollar Values in Millions)

Number of returns	3,964,629
Total assets	21,815,869
Total receipts	12,269,721
Business receipts	10,865,542
Interest	764,546
Interest on state and local bonds	43,319
Rents	85,478
Total deductions	11,764,744
Cost of sales and operations	7,052,237
Compensation of officers	226,147
Rent paid on business property	200,741
Taxes paid	289,514
Interest paid	546,236
Amortization	38,495
Depreciation	363,545
Depletion	8471
Advertising	140,143
Total receipts less total deductions	504,978
Net income less deficit	498,159
Net income, total	658,666
Deficit	160,507
Statutory special deductions	
Net operating loss deduction	45,159
Dividends received deduction	14,934
Income subject to tax	436,798
Income tax before credits	154,447
Regular tax	149,027
Alternative minimum tax	4863
Environmental tax	566
Tax credits	
Foreign tax credit	22,896
U.S. possessions tax credit	4723
General business credit	3078
Prior-year AMT credit	3103
Income tax after credits	119,937

Source: Internal Revenue Service (1996), Corporation Source Book, 1993.

III. ECONOMIC AND BEHAVIORAL EFFECTS OF THE CORPORATE INCOME TAX

As with any tax, the existence of the corporate tax may alter the behavior of those subject to it as they seek to minimize their tax liability or invest in tax-favored activities. Indeed, concerns over the neutrality of the corporate income tax have been cited as the reason for any number of proposed and enacted changes in the tax code. By neutrality it is meant that the tax system should not change the relative rates of return on different investments from what they would otherwise be in equilibrium in the absence of taxation.¹³

In the following four sections we discuss the reasons why taxes might be expected to influence specific aspects of firm's behavior. These sections are not meant to be a comprehensive

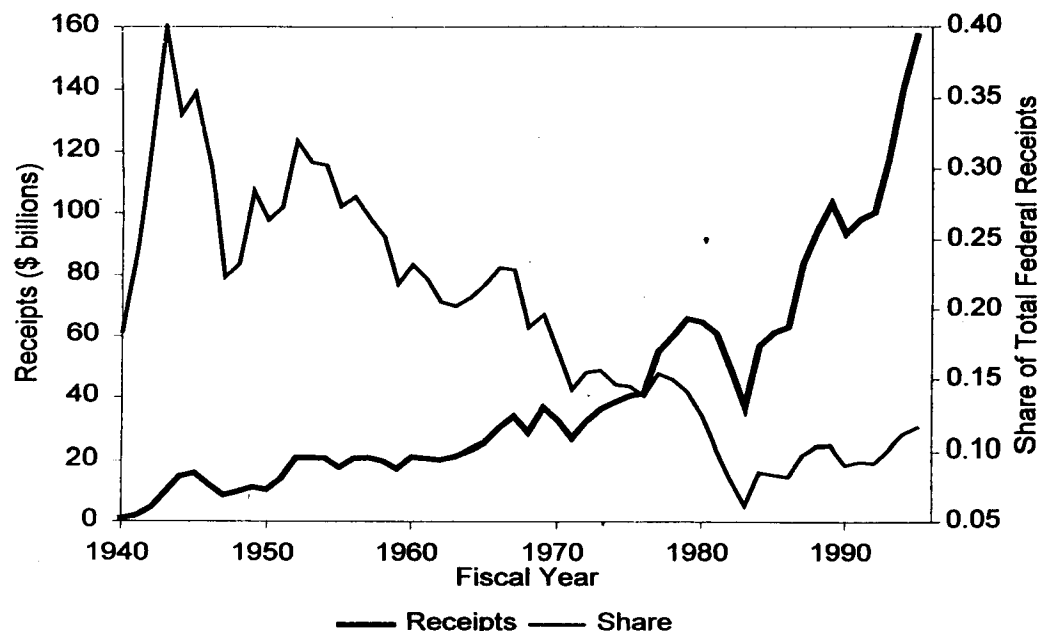


Figure 2 Corporate income tax receipts. From Executive Office of the President (1996).

review of taxes on corporations, but rather highlight areas that have received particular attention: organizational form, capital structure, capital investment, and dividend policy. It is important to note, however, that taxes are only one of the many financial and nonfinancial factors firms must consider when making decisions. As a result, the advantage—or disadvantage—of undertaking any action because of taxes may be mitigated or completely offset by other considerations.¹⁴

A. Organizational Form

One of the earliest and most fundamental decisions a business must make is the type of organizational form it will use.¹⁵ Businesses must choose among operating as a sole proprietorship, a partnership, or a corporation—each with its own nontax and tax advantages and disadvantages. Perhaps the most significant advantage of the corporate form is that owners are shielded from unlimited liability—generally, corporate shareholders are only at risk for losses of a business to the extent of their investment. Corporate ownership is also freely transferable between individuals and easily divisible, and unlike other types of organizations, a corporation can have an unlimited life span.

The existence of a corporate tax potentially places an additional cost on operating as a corporation that must be weighed against the nontax advantages. Under section 7701 of the U.S. Internal Revenue Code, a business will be subject to the corporation income tax if it “more nearly resembles a corporation than a partnership or trust.” In determining the degree of resemblance, the tax code sets out six characteristics to be considered: (1) the existence of associates, (2) a business objective, (3) continuity of life, (4) centralization of management, (5) limited liability, and (6) free transferability of interests.

The U.S. system does allow certain corporate (and some noncorporate) forms to escape double taxation while maintaining limited liability. Subchapter S of the internal revenue code allows eligible corporations to be taxed on an accrual basis as a flow through (like a partnership). The eligibility requirements are quite strict, however, and are intended to be limited to “small firms,” defined as those with few shareholders, currently defined as seventy-five or fewer.¹⁶

Table 2 Number and Types of Businesses by Form of Organization (1992)

	All corporations	S corporations	Partnerships	Nonfarm sole proprietorships
Total	3,869,023	1,785,371	1,484,752	15,495,419
Agriculture, forestry, and fishing	137,833	65,055	124,564	411,180
Mining	36,660	15,563	36,399	131,093
Construction	407,881	178,761	35,078	1,908,511
Manufacturing	300,071	117,812	24,074	460,845
Transportation and public utilities	178,284	74,886	23,535	615,174
Wholesale and retail trade	1,052,713	467,234	162,472	2,835,467
Finance, insurance, and real estate	635,268	273,415	797,324	1,277,992
Services	1,100,449	587,071	252,517	7,622,911
Other	19,864	5574	4454	232,247

Note: All corporations include S corporations.

Sources: For corporations see Internal Revenue Service (1995), for partnerships see Wheeler (1994), for sole proprietorships see Strudler and Shiley (1994).

Recently new types of organizational forms have been recognized. Limited liability corporations (LLCs) and limited liability partnerships (LLPs) possess many of the desirable traits of the corporate form (namely, limited liability and the ability to participate in the management of the business), but are not classified as corporations under state law, nor recognized as such for federal tax purposes.¹⁷

If a corporation is eligible to operate as a subchapter S corporation or other pass-through entity¹⁸ a key tax issue is whether the firm wants to be able to defer the recognition of income or losses to the shareholders. Consider the amount of tax paid by a pass-through entity and a corporation, assuming all after-tax corporate income is distributed to shareholders. Let t_p be the personal tax rate and t_c be the corporate tax rate. Then, in the case of corporate income, the total amount of income after tax will be $(1 - t_c)(1 - t_p)$ compared $(1 - t_p)$ for noncorporate income. Using current maximum marginal tax rates as an example, $t_p = .396$ and $t_c = .35$, the amount of after-tax income on \$100 of income would be

$$\$100(1 - 0.35)(1 - 0.396) = \$39.26$$

compared to

$$\$100(1 - .396) = \$60.40.$$

While this example assumes that all other aspects of corporate behavior (such as financing, investment, and dividend payments) remain unchanged in the absence of the corporate tax¹⁹ (issues that will be addressed later), it does make it clear that there appears to be a significant tax cost to operating as a corporation.²⁰

Aspects of corporate behavior and the structure of the tax law may temper this result. For example, if corporations do not distribute earnings the current tax payment will only be the corporate tax rate, and the additional tax will only be 4.6 percent $(0.396 - 0.35)$.²¹ Prior to 1986, the maximum individual tax rate exceeded the corporate tax rate, encouraging the accumulation of income inside of corporations.²²

It should not be surprising that given their tax advantages and the inversion of tax rates after the Tax Reform Act of 1986, which made the maximum corporate rate higher than the individual rate (34% versus 28%), these pass-through entities have become a preferred method of operation. Between 1986 and 1987, for example, the number of S corporations grew by nearly 37 percent, and now account for nearly half of all U.S. corporations.²³ Table 2 provides a breakdown of the distribution of business tax returns by type of entity for 1992.

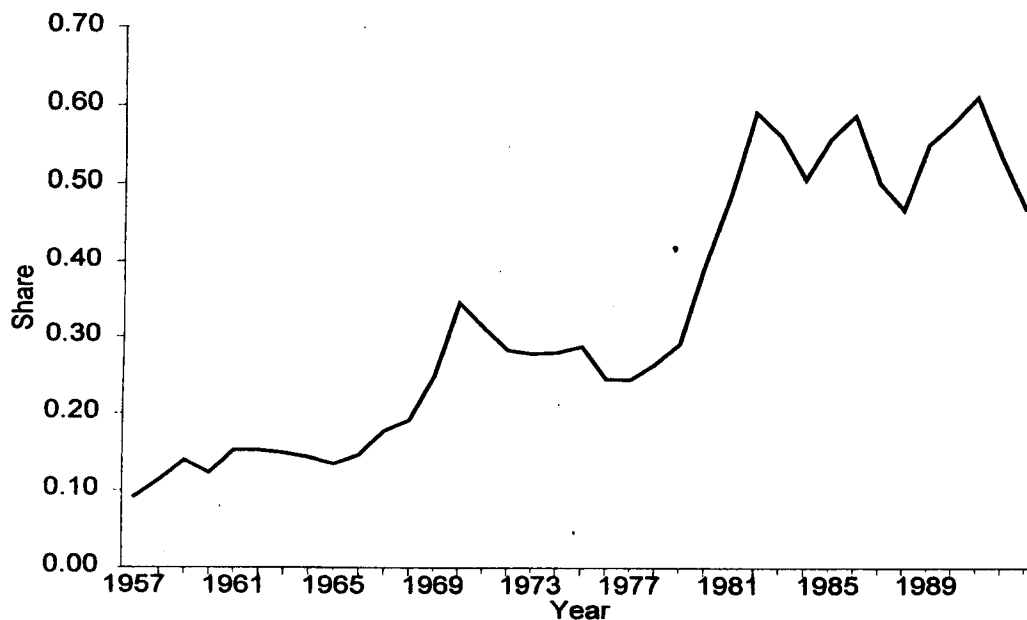


Figure 3 Interest as a share of net receipts. From Internal Revenue Service (1996) and earlier years.

The relative decline in the importance of the traditional corporation has a number of implications that have yet to be fully explored. While alternate forms may exist, the extent to which they may substitute for traditional business forms is not completely known, nor is it known how costly organizational changes may be for larger businesses. In addition, much of the recent work examining the efficiency effects of the corporate tax (e.g., Gravelle and Kotlikoff, 1989, 1993; Mackie-Mason and Gordon, 1997) has broadened the traditional analysis to reflect the growing role of the noncorporate sector. The growth of research in this area and the broad implications organizational changes may have to the tax system over longer time horizons highlight the importance of fully understanding the interaction of the corporate and individual tax systems and the influences each may exert on business behavior.

B. Capital Structure

In the absence of taxes, Modigliani and Miller (1958, 1963) showed that the value of the firm should be unaffected by its choice of capital structure.²⁴ Since its inception, however, the corporate tax code has treated debt and equity differently, with interest payments being deductible to the corporation and dividends not being deductible. As a result, it is generally accepted that the tax code creates a bias toward debt financing and may increase the value of a firm that uses debt by the amount of tax savings (or "tax shield") on the borrowed amounts.²⁵ Over time, debt has become more important to the nonfinancial corporate sector, and, as shown in Figure 3, the share of pretax income devoted to interest payments has increased.²⁶

In addition to their differential corporate treatment, each may be treated differently under the individual income tax as well. One can easily see the effect of the differential taxation by examining the after-tax returns of investments in debt and equity instruments to an individual. Suppose a firm has the opportunity to undertake a \$1000 marginal investment that will pay 10 percent before tax. If that investment is financed by raising \$1000 in equity, the after-tax yield to the individual (assuming all after-tax earnings are distributed) will be

$$(1 - t_c)(1 - t_p)$$

which, as we saw earlier, would be \$39.26 under the current maximum U.S. tax rates.

Instead, suppose the firm were to borrow \$1000 from its shareholders at the same (10%) rate. Then the amount of taxable income earned by the corporation would be zero—the interest payment exactly offsets the income from the investment. The shareholder would receive \$100 in interest income taxed at the individual rate of 39.6 percent, however, netting \$60.4—the same amount as we saw in the case of pass-through entities.²⁷

Offsetting this potential disadvantage to equity, however, are two factors. The first is that after-tax corporate earnings are not necessarily distributed to shareholders, thereby deferring the individual tax. Any corporate earnings that are not distributed are able to be reinvested at the corporate level (dividend behavior will be discussed in a later section), increasing the value of outstanding shares and any potential capital gain from the sale of the stock. As capital gains this income is treated differently under the individual tax code than dividends, which are treated as part of ordinary income and have generally been extended some preferential treatment. For example, capital gains are taxable only to the extent that they exceed capital losses. Up until 1986 only a portion of capital gains were included in the calculation of taxable income, lowering their effective tax rate. In addition, the recognition of capital gains are generally discretionary, and thus receive the benefit of deferral.²⁸

Miller (1977) extended the results of Modigliani and Miller to account for the differential personal taxes that might exist on the two types of income individuals might receive from the corporation: dividends and interest payments. In this model the advantage to the firm from leverage becomes

$$G_L = \left(1 - \frac{(1 - t_c)(1 - t_{PS})}{(1 - t_{PB})} \right) B_L$$

where G_L is the gain from leverage, t_c the corporate tax rate, t_{PS} the personal tax rate on income from stock, t_{PB} the personal tax rate on income from bonds, and B_L the market value of the firm's debt. What is important to note from this equation is that depending upon the values of the three tax parameters— t_{PS} , t_{PB} , and t_c — G_L could be positive or negative. As a result, the yields individual investors would require in order to hold corporate debt would vary relative to the yields on common stock, or, as stated by Miller, "the advantage of deductibility at one level thus merely serves to offset the disadvantages of includability at the other" (Miller, 1977, pp. 267–268). Miller thus concludes that given the existence of a personal income tax, the value of a firm would end up being independent of its choice of leverage. While there existed no optimal debt-equity ratio for any firm, Miller showed there could be an equilibrium debt-equity ratio for the corporate sector as a whole. Myers (1984) suggested industry debt-to-asset ratios could vary because of similarities in assets and financing requirements between companies within an industry.

DeAngelo and Masulis (1980) generalized Miller's analysis to allow for differences in personal and corporate effective tax rates across firms and investors. They noted that due to the asymmetric treatment of losses, the marginal tax rate on interest deductions is an endogenous function of firms' debt policy. Under these assumptions they found each firm would have a unique debt-equity ratio depending upon the amount of tax shields they possessed.

Although Harris and Raviv (1991) in their review of the empirical literature found the empirical evidence of taxes' effects on capital structure to be weak, recently published work has found empirical support for taxes influencing leverage. Mackie-Mason (1990), Givoly et al. (1992), Trezevant (1992), Graham (1996), and Shih (1996), for example, have all documented an empirical relationship between taxes and leverage choices. Mackie-Mason (1990) found that incremental financing decisions were affected by the tax status of the firms, with firms with net operating losses less likely to issue debt. Trezevant (1992) confirmed this substitution effect of debt for nondebt tax shields using data around the enactment of the Economic Recovery Tax Act of 1981, as did Shih (1996), using aggregate time series data. Using data surrounding the enactment of the Tax Reform Act of 1986, Givoly et al. (1992) found that firms' tax rates and nondebt tax shields as well as their dividend payments influenced leverage decisions.

Overcoming a shortcoming in the literature, Graham (1996) constructed a measure of the marginal tax rate of firms rather than rely on the average tax rate measures commonly constructed from financial statements. In addition to documenting a relationship between tax rates and leverage he also found that marginal tax rate proxies improve the ability to estimate these relationships.

While these works provide empirical support for a relationship between debt and taxes, there remains a substantial amount yet to be learned. Since taxes are suggested as only one of a number of factors influencing leverage, the relative significance taxes play remains to be determined, as does the extent to which taxes interact with the nontax factors.

C. Investment

Empirical investigations of investment generally follow the neoclassical model developed by Jorgenson (1963).²⁹ This model begins with the assumption that a firm will undertake investment up until the point at which the marginal cost of the investment equals its marginal benefit. Since the marginal benefit of investment will fall with the amount of investment, a decrease in the cost of investment is needed to induce the purchase of additional capital. Were the cost of investment to rise, investment would be expected to fall, as projects with returns less than the now higher cost would not be undertaken.

From this basic relationship the rental price, or user cost of capital, can be derived. This cost of capital represents what the use of the capital will cost the firm in a given period, and can be expressed as

$$c = q(r + \delta)$$

where c is the user cost of capital, q the purchase price of the capital, r the real interest rate, and δ the depreciation rate. In this case the cost of capital is merely the financing cost incurred to purchase the asset plus the depreciation of the asset during the period.

Hall and Jorgenson (1967) extended this analysis to a world with taxes. The equation becomes³⁰

$$c = \frac{q(r + \delta)(1 - k - t_c z)}{(1 - t_c)}$$

where k is the rate of the investment tax credit (if any), t_c the corporate tax rate, and z the present value of depreciation deductions. The imposition of a corporate tax thus introduces new parameters to the equation that can influence the cost of capital.³¹ Increases in the value of k or z , for example, would decrease c and be expected to increase the amount of investment.³²

Within this framework, numerous studies have been performed addressing the role tax policy plays in investment decisions. In a review of the literature to date, Chirinko (1986) concluded that empirical studies had yet to demonstrate a relationship between taxes and investment. After Tax Reform, however, Cummins and Hassett (1992) found extremely large elasticities for equipment (-1.1) and structures (-1.2)³³ with respect to changes in the cost of capital. More recently, however, Cummins, Hassett, and Hubbard (1994) estimated an elasticity of -.66.³⁴

In addition to affecting the level of investment, differences in tax policy across jurisdictions may influence the location of investment. Within the United States, for example, states may tax business activities differently, or provide special incentives, leading firms to invest more in states with more generous tax systems.³⁵ Differences in the tax treatment of corporate income are even greater across countries than across states. For multinational firms, with operations in multiple countries, location decisions will be affected by a variety of factors, including the rates and methods of taxation at home and abroad.³⁶

That investment might be affected by tax policy seems to be undeniable, but the role that taxes play relative to other factors remains an open question. In addition, to the extent

that the tax code is used to encourage investment, it remains to be seen which of the available tools—lower rates, an investment tax credit, or faster depreciation—is the most efficient.³⁷

D. Dividend Policy

Although the payment of dividends consumes a large amount of after-tax corporate profits (50 to 70 percent in recent years), these payments are one of the least understood aspects of corporate behavior (Allen and Michael, 1994). As a method of distributing earnings, dividends appear to be tax-disfavored when compared to either retaining the earnings or using alternative means, such as share repurchases. In this section we will focus on the tax aspects of dividend behavior, paying less attention to the numerous nontax considerations involved in dividend policy as well as the use of dividends in an international tax-planning context.³⁸

The tax disadvantage of dividends stems from the existence of the double tax on corporate income. Since corporate income has already been taxed at the entity level when earned, the payment of a dividend triggers a second level of tax on the earnings at the shareholder level. At the same time, increases in the value of equities are untaxed until realized (as capital gains, and often at a lower rate) by the individual. A firm that retains earnings would appear to be at an advantage over one that pays a dividend, as retained earnings could be reinvested by the firm and individuals would benefit from both the deferral and the (generally) lower tax rate on capital gains.

Two views of dividend taxation have developed.³⁹ The traditional, or “old view” of dividend taxation assumed dividends contained information valuable to investors that compensated for their unfavorable tax treatment. The suggested nature of the nontax benefits has been varied, as dividend payments have been hypothesized either to contain a signal about firms’s current and future financial position or to monitor manager performance.⁴⁰ The tax on distributions is thus viewed as the cost of obtaining the information provided by dividends.

Under the “new view,” dividends are assumed to be the only way in which earnings can be distributed to shareholders, and therefore will always be subject to a shareholder tax upon distribution. In this model, dividend taxes become capitalized in the value of the firm’s shares.

Empirical tests of these two theories have tended to support the traditional view.⁴¹

As a final issue it is worth noting that the burden of the individual tax applies only to the extent that the recipients of the dividends are taxable. Recipients that are untaxed (such as tax-exempt institutions), are able to defer their tax liability (pension plans), or are low-tax-rate investors should have a higher demand for dividend-paying stocks than those with high tax rates. Investors should thus form “clienteles” for stocks with particular payout characteristics. Scholz (1992) provides a direct test for the existence of tax clienteles.

IV. INCIDENCE AND EFFICIENCY EFFECTS OF A CORPORATE INCOME TAX

A. Incidence of the Corporate Tax

An important aspect in understanding the incidence of any tax is recognizing that the statutory and the economic incidence will usually differ. While the statutory incidence is determined legislatively by specifying who must make payments to the government, the economic incidence is determined by examining the effect of the tax on the distribution of income. Ultimately, “only people can pay taxes,” and any tax levied on a corporation has to affect the incomes of some group. In the case of the corporate tax, the tax may be shifted forward, to consumers of the products, backwards, to the suppliers of inputs (including labor), or to the owners of capital. The notion of “taxing corporations” is thus a misnomer, as the corporation itself can bear no tax, but rather can only serve as a conduit that will shift the tax to some other group. As a result, any attempt to understand the incidence of the U.S. (or any other) tax system, in its entirety, must address the issue of who ultimately pays the corporation income tax.⁴²

The Harberger (1962) model, and other general equilibrium models discussed below, allow for the calculation of the effects a tax will have on prices and quantities throughout the economy. These models start with the assumption that the economy is in equilibrium, and the imposition of a tax will cause prices and quantities throughout the economy to adjust until equilibrium is again achieved. As the adjustments take place, the burden of the tax (measured as the change in each group's income) will move from the corporation to other sectors.

As with any model, the results depend on both the structure of the model and the assumptions employed by the model. Given limitations in measurement, and disagreement over assumptions in the models, the literature to date has been inconclusive in determining how the corporation income tax is ultimately shifted. A recent comprehensive review of the literature by the U.S. Congressional Budget Office (1996) concluded that the short-term burden of the tax most likely fell on capital (i.e., the owners of the corporation) but that the burden among owners may further vary, given that corporate investments are taxed at different tax rates. Over longer time periods, however, the CBO report concluded that the tax was likely to be shifted to other sectors of the economy. Most likely these would be relatively immobile factors (such as land and labor).⁴³

B. Efficiency Effects

Closely related to these incidence issues is the efficiency cost of the corporate tax system. This efficiency cost of the corporate tax (also referred to as the excess burden or deadweight loss), is defined as the dollar value of the loss in utility in the economy over and above the amount of revenue collected by the tax. As with the estimation of tax incidence, estimates of efficiency losses depend on the assumptions and specifications of the models used in the calculations. Harberger's (1962) model was one of the first to measure the distortion of corporate taxes using a general equilibrium model of a two-sector world. In his model the economy consisted of a corporate and a noncorporate sector, each of which used capital and labor (under constant returns to scale) in order to produce their output. Production within a sector was classified as either being corporate or noncorporate, based upon the characteristics of the industry, rather than the actual organizational choice of the producers. These simplifying assumptions were employed to make the analysis easier and have since been examined and relaxed in later work. In addition, as computational resources have improved, these models have been expanded to include more sectors and less restrictive assumptions.⁴⁴ In Harberger's original model the excess burden of the corporate tax of the 1950s was estimated to be between 2 and 7 percent of the amount of tax collected, and .5 percent of GNP.

A different approach has been suggested by Gravelle and Kotlikoff (1989, 1993). They attempted to estimate the efficiency cost of the corporate tax system by allowing for differences in production between the corporate sector and a noncorporate sector, and allowed for the production of the same product by both sectors. In this "mutual production" model additional inefficiencies may arise due to the possibility of greater substitution between corporate and noncorporate production. Gravelle and Kotlikoff's results suggest that the excess burden of the corporate tax could be more than ten times larger than calculated in the Harberger model, and that the excess burden generally exceeds the amount of tax revenue.⁴⁵ They conclude the efficiency cost of the corporate tax to be roughly double that of the Harberger model.⁴⁶

Noting that the higher efficiency loss in Gravelle and Kotlikoff's model is due to the shifting of production between corporate and noncorporate producers, Gordon and Mackie-Mason (1994) estimated the degree to which such substitution has actually occurred and attempted to determine the magnitude of the nontax costs of operating in the noncorporate sector. Their results suggest that the efficiency costs of the corporate tax are much smaller than Gravelle and Kotlikoff found—on the order of magnitude of nine percent of business taxes, compared to 120 percent.

Clearly, much remains to be learned about the effects of the corporate income tax on the economy. As more is learned about specific responses to tax changes, such as the investment

and financial policies discussed earlier as well as the extent to which price changes in the corporate sector affect other markets, our understanding of the efficiency and equity effects of the corporate tax will improve.

C. Integration of the Corporate and Personal Tax

The United States remains the most significant country without at least partial integration of its personal and corporate taxes.⁴⁷ The purpose of integration is to eliminate the double tax on corporate earnings, and remove the inefficiencies described in the previous section caused by the imposition of the second level of tax.⁴⁸

Several approaches have been suggested for integrating the U.S. corporate tax, ranging from partial to complete integration.⁴⁹ Under full integration, the corporate level of tax is removed completely, and all income is taxed once—at the shareholder level and at shareholder rates. The amount of tax to be paid by the shareholder would be independent of the amount of distributions made by the corporations; all earnings would be taxed as accrued to the individual. A corporate-level tax might continue to exist under such a system, but it would serve as a method of withholding, with full credit being passed on to shareholders for their pro rata share of the tax paid. One policy decision to be made in moving to such a system is whether or not to make the credit refundable, as this would determine whether tax-exempt and foreign shareholders pay the corporate level tax.

Short of complete integration, partial integration would reduce some but not all of the second level of tax on corporate earnings. From a policy perspective, the advantages of partial integration are that it would not cost as much as foregone tax revenues as full integration (as it does not completely remove the second level of tax) and would likely be easier to administer. One method of partial integration that would equalize the tax treatment of debt and equity is to provide for dividend relief, either by allowing corporations to deduct dividends paid (just as they currently deduct interest payments) or by eliminating the shareholder-level tax on dividends received.

In its 1992 study the Treasury Department proposed an entirely new approach to corporate taxation through the Comprehensive Business Income Tax (CBIT). Under CBIT dividends and interest payments would have been given similar tax treatment through the disallowance of the deduction for interest paid, while maintaining the lack of deductibility for dividends. All corporate income would be taxed at a 31 percent rate, and personal taxes on corporate income would be eliminated.

V. CONCLUSIONS

The future of the corporate income tax remains unpredictable. While there has been relatively broad agreement among those who study the tax that it should eventually be replaced, the political reality of such a dramatic change is much less certain, especially in light of the potentially large revenue consequences and the nature of the tax changes that might be needed to offset the loss of corporate tax revenue. Even without formal integration, however, the ability of businesses to exercise control over their organizational form and financing will likely reduce the share of businesses (although not necessarily business activity) subject to two levels of tax, and further narrow the scope of the tax to those businesses that are publicly traded. This potential erosion in the base of the corporate income tax will also continue to attract the attention of both policy makers and researchers, although often for cross-purposes. While some will interpret the erosion of the base as a signal that the corporate tax should be eliminated, other will respond that additional steps need to be taken to preserve (or expand) the double tax. Even in the absence of integration, the corporation income tax will thus be viewed by many as in need of numerous, and perhaps substantial, changes. Recent legislative proposals would have substantially revised or repealed the corporate AMT, would have allowed

for more accelerated depreciation, or would have redefined what types of instruments should be treated as debt or equity in determining the deductibility of payments to their holders. That these proposals do not reflect a consistent underlying policy on the future of the corporate tax only serves to accentuate the need to better understand the effects of the present tax system.

Given the continuation of the corporate tax, new research could both have an influence on the understanding of the tax's effects as well as contribute to the debate over the potential benefits of integration and the eventual form any future reform might take. Business behavior is complicated, and the responses of businesses to entity-level taxes will be at least equally complicated. It is unlikely that taxes will be the only influence on these decisions; numerous nontax factors will also play a role. As described earlier in the discussions of various aspects of tax-related behavior, taxes are not the sole determinant of corporate actions, but rather one factor among many that firms must consider when undertaking any activity. While the minimization of taxes by itself appears to be a rational goal, pursuing such a goal will likely involve other costs, with the ultimate choice of a business depending on a balancing of various costs and benefits.

For example, to minimize the AMT immediately after the enactment of the Tax Reform Act of 1986, firms could have reduced their tax liability by reducing the difference between their financial reporting income and their taxable income. While such an action could reduce their tax liability, the prospect (and potential effects) of reporting lower earnings to shareholders and the markets may have been viewed as more than offsetting the expected tax benefits. In many of the situations in which options exist to minimize tax liability, the strategies may involve balancing these tax benefits with regulatory, political, or market considerations. This appreciation for the constraints faced by firms in their tax planning is an important aspect of current research, and one that will likely become more important in the future.⁵⁰

NOTES

1. Exceptions to the double tax include S corporations, regulated investment companies, and real estate investment trusts. A complete discussion of each of these is beyond the scope of this work, although S corporations will be discussed in more detail in the next section. For a description of the legal requirements of each see, for example, Bittker and Eustice (1994).
2. Pechman (1987) provides a brief history of the corporate income tax along with extensive historical tables. Other descriptions of the development of the tax can be found in Goode (1951), U.S. Congressional Budget Office (1985), U.S. Department of the Treasury (1992), and Arlen and Weiss (1994).
3. At times, including the present, the corporate income tax also contains a surtax on income within a specified range. This tax is applied to remove the benefit of the graduated tax structure from more profitable corporations, turning the graduated corporate income tax into a flat rate tax. For example, the 1993 tax rate on corporate income below \$50,000 was 15 percent, and taxable income over \$18,333,333 was taxed at 35 percent. A 39 percent rate applied to income between \$100,000 and \$335,000, and a 38 percent rate applied to income between \$15,000,000 and \$18,333,333.
4. Numerous legal and accounting texts are available to provide a more detailed description of the U.S. federal income tax system. In particular, see Abrams and Doernberg (1995), Bittker and Eustice (1994), Kramer and Nordhauser (1994), Lind et al. (1987), and Westin et al. (1995).
5. See Cordes and Sheffrin (1981, 1983) and Altshuler and Auerbach (1990) for analyses of the significance and effects of losses.
6. Additional information on the structure and effects of the AMT can be found in Dworin (1987a, 1987b), Graetz and Sunley (1988), Gerardi et al. (1993), and Gill and Treubert (1993).
7. The amount of environment tax paid by the firm is determined by their AMTI, regardless of whether or not the firm actually pays the AMT.

8. The effect of the BIA on the timing of reported corporate earnings has been the subject of extensive study. See, for example, Gramlich (1991), Manzon (1992), or Boynton, Dobbins, and Plesko (1992).
9. U.S. Congress, Joint Committee on Taxation (1987), p. 432. The very existence of an AMT remains a significant political issue, as evidenced in recent congressional hearings (U.S. Congress, U.S. Senate Committee on Finance, 1995).
10. Changes to the law in 1993 provide for the same depreciation of new property under ACE as under AMT depreciation so as to remove an additional tax under the ACE adjustment.
11. The effect the tax code may have on foreign investment is not explored here. A number of the foreign tax issues are addressed in Giovannini et al. (1993).
12. The downward trend in corporate liabilities has been of concern to some policy makers and has been the subject of Senate hearings (U.S. Congress, U.S. Senate Committee on Finance, 1990).
13. Textbook descriptions of the economic criteria for efficient taxes can be found in Atkinson and Stiglitz (1980), Boadway and Wildasin (1984), Musgrave and Musgrave (1989), and Rosen (1995). Gravelle (1994) provides a detailed analysis of capital taxes.
14. Most of the issues below are covered in corporate finance textbooks such as Brealey and Myers (1996) or Copeland and Westin (1988). These topics are discussed with an emphasis on the tax considerations in Scholes and Wolfson (1992). Klein and Coffee (1996) provide an overview of economic and legal aspects of various business entities.
15. Bankman (1994) provides a valuable study of business structure choices and the influence of tax and nontax factors in high-tech firms.
16. A concise yet relatively thorough treatment of the tax rules for S corporations can be found in McNulty (1992).
17. Keating et al. (1992) and Kwall (1995) provide a comprehensive treatment of the taxation of these new entities.
18. Watson (1988) provides a theoretical analysis of the incentive to operate as a partnership after 1986.
19. Ayres, Cloyd, and Robinson (1996), Guenther (1992), Plesko (1994), and Terando and Omer (1993) find that organizational choice influences many of the operating characteristics of firms.
20. The additional tax paid may be viewed as the price of gaining all of the benefits of the corporate form. Gordon and Mackie-Mason (1994) present a model that explicitly measures the nontax benefits of organizational forms.
21. The graduated rate structure for corporations and individuals may also influence this behavior. Even if the maximum corporate rate is higher than the individual rate it may be the case that for smaller amounts of incomes the relationship is reversed.
22. While this ignores the eventual payment of the individual tax it is possible that the individual-level tax would be reduced through favorable capital gains treatment.
23. Though large in number, the typical S corporation remains small compared to other corporations; in 1990 S corporations accounted for only slightly more than four percent of corporate assets. For descriptions of these trends see Nelson (1988, 1992, 1993), Petska and Wilson (1994), and Plesko, (1994, 1995).
25. Masulis (1988) provides an easy-to-read survey of the theoretical and empirical literature relating to capital structure decisions. Scholes and Wolfson (1989) look at the financing decisions with a focus on tax considerations. Reviews of the literature and developments since the original work by Modigliani and Miller can be found in Gordon and Malkiel (1981), Bradley et al. (1984), Miller (1988), Modigliani (1988), and Ross (1988).
25. It is important to note that distinguishing debt from equity may not be a trivial matter, as various financial instruments exist that appear to have characteristics of both. In addition, leveraged buyouts and other types of corporate restructuring, which may in part be tax-motivated, have also served to alter corporate capital structure. See Kopcke and Rosengren (1989) and Shoven and Waldfogel (1990) for surveys.
26. The interest share of net receipts is calculated as

Interest paid
 Total receipts – total deductions + interest paid

27. Scholes and Wolfson (1992, Chap. 18) detail the uses of leverage to achieve partnership results.
28. If held until death the individual-level tax will be completely avoided, as the assets receive a stepped-up basis.
29. While this section focuses on Jorgenson's cost of capital model this is not meant to imply this is the only approach to modeling investment. Other models of investment behavior are discussed in Fromm (1971), Nickell (1978), Feldstein (1982), and Chirinko (1986). In contrast to this approach are models based upon Tobin's q (Tobin, 1969), and the ability to measure marginal q (Hayashi, 1982). These models are also discussed in Chirinko (1986), and applications can be found in Hendershott and Hu (1981) and Cummins, Hassett, and Hubbard (1994).
30. This expression will vary, depending upon how the investment tax credit affects the basis of the asset for depreciation.
31. For simplicity, this derivation ignores the role personal taxes may play. For further information see Auerbach (1983).
32. Financing and the asymmetric treatment of debt and equity may also affect the cost of capital.
33. The authors point out that their estimates are three times larger than the largest of any previous study.
34. Lyon (1990, 1997) provides an analysis of the effects the Tax Reform Act of 1986's AMT may have had on investment behavior.
35. Papke (1987, 1991) is an example of research in this area.
36. Examples of research in this area are Slemrod (1990), Harris (1993), and Hines (1996). Broader discussions of international taxation can be found in Scholes and Wolfson (1992, Chaps. 12 and 13), Gravelle (1994, Chap. 10), Giovanni, Hubbard, and Slemrod (1993), and Feldstein, Hines, and Hubbard (1995).
36. Gravelle (1994, Chap. 5) discusses the competing policy choices.
38. The seminal work on dividend policy and firm valuation is Miller and Modigliani (1961). Overviews of dividend issues in finance can be found in Brickley and McConnell (1992) and Mann (1992). A recent review of the literature is presented by Allen and Michaely (1994). For international issues see Hines and Hubbard (1990) and Harris (1993).
39. Reviews of these issues can be found in Zodrow (1991) and in Sinn (1991), who argues that each view is relevant to firms at different stages of their life cycle.
40. Bernheim's (1991) results, which assume dividends and repurchases are identical except for their tax treatment, suggest that the tax costs are outweighed by the ability of higher-quality firms to signal shareholders at a lower cost relative to the cost that would be incurred by lower-quality firms.
41. See Poterba and Summers (1985), Poterba (1987), Nadeau (1988), and Nadeau and Strauss (1993).
42. See Pechman and Okner (1974) and Pechman (1985) for examples.
43. The report of the U.S. Congressional Budget Office (1996) provides a thorough literature review and analysis of the issues underlying the incidence debate.
44. Ballard et al. (1985) provide a detailed description of computable general equilibrium models. Chapter 4 of Gravelle (1994) provides an overview of these results and the intuition behind the various models.
45. In both papers Gravelle and Kotlikoff (1989, 1993) present detailed explanations for the sources of these differences.
46. A more recent development in general equilibrium modeling can be found in Fullerton and Rogers (1993), although in the context of measuring tax incidence rather than the efficiency costs of the corporate tax.
47. Descriptions of other countries' approaches to corporate income taxes can be found in Gourevitch (1977), the U.S. Department of the Treasury (1992), and Strauss and Nadeau (1995).
48. As described earlier, a number of types of business forms are available that are effectively integrated under the corporate tax, but they are primarily available to smaller firms.

49. For detailed descriptions of integration methods and proposals see McLure (1979), Warren (1993), Gravelle (1994, Chap. 4, 1995), U.S. Department of the Treasury (1992), and Hubbard (1993).
50. Trezevant (1995) presents a model that explicitly allows for the simultaneous determination of corporate decisions in the presence of taxes. Research recognizing the trade-off of tax versus other types of reporting is described by Wilson (1991). A recent example for commercial banks is Beatty et al. (1995).

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