Tax Policy and Corporate Borrowing

*Alan J. Auerbach**

Aggregate statistics readily indicate why so many observers of financial markets in the United States are concerned about the balance between debt and equity in the corporate financial decision. Exceeding zero in most years before 1984, net equity issues by U.S. nonfinancial corporations have been negative in each year since. Net redemptions averaged approximately $80 billion annually during the period 1984–87, and then rose in 1988 to $131 billion. Over the same period, net new borrowing by the nonfinancial corporate sector rose sharply, with outstanding credit market debt growing annually by nearly $170 billion during 1984–87 and by $189 billion in 1988 (Board of Governors of the Federal Reserve System 1989).

Debt-equity ratios can be calculated in many ways, however, and not every measure provides such a sharp picture of recent events. The change in the value of corporate equity over any period equals net equity issues plus changes in the value of existing equity. Because of the strong performance of the stock market during the 1980s, the ratio of the stock of debt to the stock of equity, measured at market value, began rising only in 1987, the year of the stock market crash.

Although little consensus exists about how debt-equity ratios should be measured to evaluate recent events, the continuing strength

*Professor and Chairman of the Department of Economics, University of Pennsylvania. The author is grateful to the Institute for Law and Economics at the University of Pennsylvania for financial support, to Carlos Budnevich for assistance with the calculations, and to George Mundstock and Larry Summers for comments on an earlier draft.

of corporate borrowing, combined with the historically unusual magnitude of equity redemptions, has led to many theories seeking to explain the new behavior and has evoked calls for tax reform by those attributing the borrowing to flaws in the tax system. This paper considers the theory and evidence relating tax factors to the recent borrowing surge, concluding that changes in tax incentives are not the primary cause of the shift toward debt and that the social costs of increased borrowing may have been overstated. It then reviews a variety of alternative tax reform proposals that have been made over the years to reduce the disparities in the tax treatment of debt and equity. Given the tenuous link between recent borrowing and the tax environment as well as the uncertainty about the social costs of such borrowing, the benefits of these proposals should be clearly established before adoption is considered. Most proposals either would provide significant windfalls at great tax revenue cost or would introduce new distortions to financial behavior.

Taxes and Leverage

The United States has a "classical" corporate income tax, treating corporations and their shareholders as separate entities. The result is the "double taxation" of corporate equity income, with firms paying the corporate tax and shareholders being taxed on dividends and capital gains. With interest a deductible expense, cash flow used to meet corporate interest payments is taxed only once, to the recipient. The distinction of the tax treatment of the corporation from that of an unincorporated business, such as a partnership, is therefore in the treatment of equity, and many reform proposals have been aimed at changing the tax treatment of equity earnings.

Perhaps the easiest way to express the corporate imbalance between debt and equity is in terms of the after-tax return an investor receives per dollar of corporate source income. For equity, the return is $(1-t_c)(1-t_e)$, where t_c is the corporate tax rate and t_e is the investor's tax rate on equity earnings. For debt, the return is $(1-t_b)$, where t_b is the investor's tax rate on interest income.

For a single investor facing equal tax rates on debt and equity income ($t_b = t_e$), debt is clearly the security of choice. Yet, even after the events of recent years, equity remains the dominant form of holding corporate wealth in the United States, and many theories have attempted to explain why.

Taxpayer Clienteles

Two other key features of the income tax are progressivity in the marginal rate structure and a tax advantage for equity at the individual level afforded by the deferral and potentially favorable taxation of capital gains. This causes high-bracket investors to have a tax preference for equity relative to low-bracket investors, and, if the individual tax advantage of equity is high enough, may also cause high-bracket investors to have an absolute tax preference for equity: their tax rate on equity income, t_e, may be far enough below their tax rate on interest income, t_b, that it outweighs the extra burden of the corporate tax.

This sorting of investors by tax rates has been discussed in many contexts in the literature, and is often associated in this particular case with the contribution by Miller (1977). From the perspective of absolute tax preference, the Tax Reform Act of 1986 seems a likely suspect as the source of the recent growth in corporate indebtedness.

As of 1986, the top individual federal tax rate on interest income, t_b, was 50 percent, while the corporate tax rate was 46 percent. Thus, the smart investor who held low-yield stocks and died before realizing capital gains (and hence paid no taxes on them) might actually have faced a lighter total tax burden by holding equity, even with the corporate tax. After the 1986 act, this is no longer possible. The corporate rate, 34 percent, now exceeds the highest marginal tax rate on interest income, 33 percent. Moreover, the maximum tax rate on capital gains has risen from 20 percent to 33 percent, pushing attainment of the "Miller equilibrium" even farther from feasibility. The argument may be put simply: before 1986 there were investors with an absolute tax preference for equity; now there are none. Hence debt has been encouraged.

Diversification and the "Marginal" Investor

A serious problem with this argument is that it presumes that equity is held only by those with an absolute tax preference for it. Yet even zero-bracket investors such as pension funds hold considerable equity in their portfolios. For example, at the end of 1987, private pension funds in the United States held $486.8 billion in corporate equities (including mutual funds) and only $356.2 billion in credit market debt (Board of Governors of the Federal Reserve System 1988a). Clearly, an element of diversification is involved in investor decisions between debt and equity, and this makes every investor a "marginal" investor in the sense that the overall demand for debt versus equity is affected by the tax treatment of each investor currently buying both securities.

Once one recognizes this, the impact of the 1986 tax act becomes far less clear. For some equity investors, such as pension funds, the corporate tax rate is the only tax rate that matters, and the reduction in this tax rate has made equity more attractive. The highest-income investors, who enjoyed a reduction in their marginal tax rate from 50 percent to 28 percent while suffering an increase from 20 percent to 28 percent in the rate of capital gains tax, were almost certainly given a greater incentive to hold debt. Middle-income individuals now in the 33 percent bracket experienced a much lower reduction in their marginal tax rates (which previously had been well below 50 percent), and it is not clear that for them the tax act exerted a strong push toward either equity or debt. Thus, whether the 1986 act encouraged or discouraged borrowing depends on how the demands of each investor group changed. If one looks simply at changes in average marginal tax rates on returns to debt and equity, the calculation suggests that the act actually favored equity.[1]

In a sense, this complication is fortunate if one is attempting to demonstrate that corporate borrowing is tax-driven, since the real break in behavior appears to have occurred in 1984, well before any prudent investor would have viewed a tax reform such as the one that occurred in 1986 as a likely event. A more likely culprit is the Economic Recovery Tax Act of 1981, which lowered individual tax rates without lowering the corporate tax rate. That borrowing did not explode immediately after 1981 could very well be attributable to the serious recession that immediately followed.

Tax Losses and the Marginal Corporate Tax Rate

Not all changes in the marginal corporate tax rate occur through legislation. Firms that incur net operating losses have a current marginal tax rate of zero unless they can offset these losses against income in the previous three years to obtain a tax refund. Otherwise, they must carry the losses forward until sufficient income is earned to be offset by them, or until the losses expire after fifteen years.

While firms carrying losses forward may ultimately use them to shelter gains, the present value of such tax benefits is well below their face value, due to their potential expiration and the fact that they carry over without interest. Altshuler and Auerbach (1990) estimated that the present value of a dollar of tax losses carried forward by a representative corporation in the early 1980s was between forty and fifty cents. Since additional interest deductions simply add to the tax loss carryforward

[1] For further discussion, see Auerbach (1987). Also see Poterba (1987).

for a firm not currently paying taxes, the value of such deductions for such a firm may be less than half that indicated by the statutory corporate rate: a dollar of deductions may be worth only 17 cents or less, rather than 34 cents. Indeed, since interest deductions on new borrowing are received in the future, this reduction in their value applies to all firms except those certain never to incur tax losses.

The correction for the asymmetry of the tax system provides an additional rationale for the coexistence of debt and equity. For example, Altshuler and Auerbach estimated an average effective tax rate for interest deductions of approximately 32 percent during the early 1980s, when the statutory corporate tax rate was 46 percent. Cutting the effective corporate tax rate by nearly a third could reestablish an absolute tax preference for equity among high-bracket investors, even under current law.

The changing frequency of tax losses over time should also influence borrowing trends, since firms with tax losses have a weaker tax incentive to borrow. Panel and cross-section studies give some evidence that firm indebtedness does respond as predicted to high tax losses (Auerbach 1985; Givoly et al. 1989). But the aggregate pattern of tax losses in recent years does not offer any reason for borrowing to have increased.

Table 1 provides a breakdown of nonfinancial firms by tax status for the period 1969–88, based on a sample of firms taken from the COMPUSTAT Industrial and Industrial Research Files. The sample includes all firms for which a tax loss carryforward (zero or otherwise) was reported.[2] As is clear from the table, the fraction of firms reporting tax losses has risen sharply during the 1980s, falling only slightly in 1988 from its peak in 1987. One might argue that increased borrowing has led

---

[2] The nonreporting rate varies over time, and is correlated with the fraction of firms reporting tax losses in the same year. This suggests that an unreported value may indicate the presence of a tax loss carryforward that is not of "material significance" from an accounting standpoint.

It should also be noted that the "accounting" tax loss carryforwards reported on COMPUSTAT differ in some cases from the true tax loss carryforwards. However, there is no machine-readable source of the correct measures. Even if one is willing to examine the financial statements of individual firms, the problem of missing data is much more severe for the true tax loss carryforward measure, leading to a substantial underreporting in the aggregate (Auerbach and Poterba 1987).

The fractions reported in Table 1 follow the same pattern through 1982 as those given by Altshuler and Auerbach (1990) based on actual corporate tax returns but, even if missing values are included, also appear to underrepresent the fraction of firms actually having tax loss carryforwards. To evaluate the pattern of tax losses over time rather than their exact level, however, the accounting measure seems adequate. The same general pattern was found for samples of firms drawn only from the Industrial File (that is, those that had not disappeared before 1988) and those with complete data for the entire period 1969–88.

Table 1
Tax Loss Carryforwards in the United States
Percentage of Nonfinancial Firms Reporting:

Year	Carryforward = 0	Carryforward > 0	Carryforward Not Reported
1969	95.5	3.2	1.2
1970	96.7	2.6	.7
1971	95.5	3.6	1.0
1972	96.0	3.7	.3
1973	95.8	3.2	1.0
1974	94.7	3.9	1.5
1975	95.9	3.0	1.2
1976	94.4	4.1	1.5
1977	93.8	4.3	1.9
1978	93.3	5.1	1.6
1979	91.6	5.3	3.1
1980	91.0	5.6	3.3
1981	91.6	6.0	2.4
1982	89.7	6.4	3.9
1983	88.2	7.4	4.4
1984	86.7	8.4	4.9
1985	83.9	11.1	5.0
1986	82.2	11.8	6.0
1987	81.5	11.9	6.6
1988	83.8	10.5	5.7

Notes: Sample includes all nonfinancial firms on COMPUSTAT Industrial and Industrial Research Files having data on debt and equity values.
Percentages are weighted by firm values (debt plus equity).

to this outcome, but then a *reduction* in the incidence of tax loss carryforwards could not have been a causal factor itself. If it has played a role at all, the asymmetry of the tax system has mitigated the urge to borrow.

Untrapping the "Trapped Equity"?

The recent increase in equity retirements raises an important and controversial issue regarding the impact of taxation on corporate financial policy. A particularly puzzling aspect of corporate behavior over the years has been the decision of firms to pay dividends to shareholders subject to ordinary income taxes when an apparently dominant form of distribution, the repurchase of a firm's own shares, has been available. Since shareholders pay capital gains taxes on such redemptions, such transactions traditionally have had two tax advantages. First, capital gains were taxed at a lower rate. This advantage disappeared (perhaps

temporarily) in 1986. However, a second advantage remains, the ability to deduct the basis of shares redeemed in calculating one's tax liability. Since redemptions are essentially equivalent to dividends in other respects, it is difficult to use standard arguments (for example, signalling) to rationalize the choice of dividends over repurchases by firms.[3]

Given that dividends exist, some controversy remains over the extent to which they influence the cost of equity capital. While the traditional approach has been to estimate the effective tax rate on equity earnings as a weighted average of tax rates on dividends and capital gains based on payout ratios, this is inappropriate to the extent that marginal equity funds are generated internally. Since the retention of earnings relieves shareholders of the need to pay taxes on dividends, this lowers the cost of equity capital, making the effective capital gains tax rate the correct measure of the individual tax burden on all returns to equity and the dividend tax rate irrelevant in computing the cost of funds (Auerbach 1979; Bradford 1981; King 1977). A corollary of this view is that taxes on distributions in excess of the effective capital gains tax rate are unavoidable and hence capitalized into the value of corporate shares. Note that the effective capital gains tax rate in this context takes into account the deferral advantage and possibility of avoidance at death that taxpayers with capital gains tax liabilities enjoy.

While a dispute continues about whether this "new" view or the traditional one is correct (Auerbach 1983; Poterba and Summers 1985), neither provides an explanation for the existence of dividends. In effect, the theories differ with respect to whether new equity funds are seen to come from a reduction in current distributions or an increase in the sale of new shares, but neither offers a prediction of the *form* of the distributions a firm makes. Each theory would be entirely consistent with firms minimizing the taxes actually paid by shareholders on the distributions. Thus, the explosion of share redemptions in recent years tells us little about which theory is "correct." However, this "discovery" of share repurchases has different implications for the cost of capital under the two hypotheses. For the traditional view that prescribes a weighted-average approach to measuring the tax rate on equity, there would be a reduction in the marginal equity tax burden. Under the alternative view, that taxes on distributions do not exert a marginal effect, the discovery would simply raise share prices.[4]

Have corporations really learned to avoid the dividend tax? If so,

---

[3] For one attempt in this direction, see Bernheim (1988).

[4] The tax reduction would also be likely to raise share prices under the traditional approach, since distributions from existing assets would be taxed at a lower rate and investment would be encouraged by the lower marginal tax rate. However, this increase in value would be similar to that associated with any uniform income tax reduction.

Table 2
Disposition of Earnings and Sources of Funds, U.S. Nonfinancial Corporations
Billions of Dollars

Year	(1) Earnings	− (2) Dividends	− (3) Redemptions	= (4) Retentions	+ (5) Equity Issues	+ (6) Net Borrowing	= (7) Funds Raised
1980	89.8	61.0	8.2	20.6	21.1	57.8	99.5
1981	108.3	67.6	33.0	7.7	21.5	102.1	131.3
1982	92.9	72.0	22.5	−1.6	28.9	43.4	70.7
1983	135.5	78.0	16.5	41.0	40.0	54.4	135.4
1984	178.9	81.0	92.5	5.4	18.0	170.3	193.7
1985	185.3	84.0	106.5	−5.2	25.0	132.4	152.2
1986	184.8	89.9	118.6	−23.7	37.8	173.8	187.9
1987	173.6	95.5	112.0	−33.9	35.5	136.8	138.4
1988	181.6	103.3					

Source: Columns 1 and 2: Board of Governors of the Federal Reserve System (1988b).
Earnings are worldwide, after-tax, adjusted for capital consumption allowances and investment valuation adjustments.
Data for 1988 come from unpublished Board of Governors data.
Columns 3, 5, and 6: Joint Committee on Taxation (1989).
Redemptions include retirement of shares of acquired firms.

one would expect them to have replaced dividends with share repurchases. Evidence of this is not immediately evident, at least in the aggregate. The increase in net share redemptions has come about through an increase in gross retirements rather than a decrease in gross new issues, and the fraction of distributions accounted for by these redemptions has certainly risen in recent years. However, no decline in dividends has occurred, and a significant fraction of the redemptions have been associated with takeovers rather than self-tenders.

Table 2 presents changes in the sources and uses of funds in the U.S. nonfinancial corporate sector from 1980 through 1987. Given the cash-flow identity of each firm and hence the corporate sector as a whole, the increase in net redemptions must have been associated with an increase in profits (net of taxes and interest payments), a decrease in dividends, an increase in borrowing, a decrease in funds available for investment, or some combination of these events (all measured relative to trend). Dividends have grown quite smoothly over the period, while there has been no obvious trend in investment. Clearly, a sharp correlation exists between borrowing and redemptions.

Even though dividends have continued to grow, this does not prove that repurchases have not slowed their growth. To obtain a more precise estimate of the extent to which firms may have used repurchases to substitute for dividends, we use a typical model of aggregate

Table 3
Actual and Predicted Dividends of Nonfinancial Corporations
Billions of Dollars

Year	Actual	Predicted[a]
1984	81.0	84.7
1985	84.0	93.3
1986	89.9	102.2
1987	95.5	111.4
1988	103.3	123.0

[a] Estimated using a dynamic simulation based on equation (1) in the text.

dividend policy,[5] estimated over the sample period 1947–83 (1983 being the last year before the explosion of repurchases), to predict dividends for the years 1984–88. If the model overpredicts aggregate dividends, this result will indicate that firms have replaced them with repurchases.

The estimated equation is:

$$\Delta \log(DIV) = \underset{(1.62)}{.14} + \underset{(1.20)}{.03}\,\Delta \log(Y) + \underset{(2.36)}{.06}\,\log(Y_{-1}) + \underset{(0.26)}{.09}\,\Delta \log(T) + \underset{(1.37)}{.43}\,\log(T_{-1}) - \underset{(-2.41)}{.15}\,\log(DIV_{-1}) \quad (1)$$

$R^2 = .243$
Durbin-Watson statistic = 1.95
(t-statistics are in parentheses)

where DIV and Y are nonfinancial corporate dividends and earnings (as given in Table 2) divided by the GNP deflator and T is one minus the tax rate on dividends, taken from Poterba (1987, Table 4). Dynamic simulations based on equation (1), beginning in 1984, yield the predicted dividends given in Table 3. The results suggest that even though dividends have grown during the last five years, they would have grown more quickly had previous behavior been followed. In 1987, for example, dividends were $15.9 billion less than predicted. If one attributes this change entirely to the substitution of share repurchases for dividends, then approximately 30 percent of the $52.6 billion of share repurchases (Bagwell and Shoven 1989) that occurred in 1987 replaced

[5] The equation is essentially the one estimated by Poterba (1987, Table 5, column 2). The coefficients are somewhat different, owing to differences in sample periods and data definitions.

dividends. Thus, while substitution for dividends may have been significant, it is not the major explanation for the rise in the level of share repurchases.[6]

Moreover, an even greater amount of equity than was repurchased by firms themselves disappeared through cash-financed takeovers, with the total value of shares redeemed through both channels equaling $112 billion in 1987. One can therefore explain only a small percentage of total equity retirements as having occurred in lieu of concurrent dividends. While it is not clear what fraction of acquisitions were associated with additional borrowing, a significant fraction of the total equity retired through acquisitions, $46.4 billion, came through leveraged buyouts,[7] which have had initial debt-value ratios close to one.

Thus, the pattern of equity retirements appears to be much more one of borrowing to finance takeovers and, to a lesser extent, to repurchase one's own shares rather than one of altering the nature of distributions to shareholders. It is perhaps more accurate to characterize it as a shift from equity to debt through the redemption of shares rather than a change in the form of corporate distributions. It is therefore unclear whether the mix of *prospective* distributions and the associated taxes thereon has changed. If firms will continue to rely on dividends for distributions, little has changed. All of this must be said with a fair degree of uncertainty, for we still understand very poorly what drives firms to pay dividends.

Takeovers and Leverage

The preceding empirical evidence suggests that much of the recent shift from equity to debt in the U.S. corporate sector has been associated with takeover activity, including leveraged buyouts. Indeed, to the extent that managers of potential targets have felt compelled to borrow as a defensive measure, to avoid being taken over, much of the

---

[6] Additional evidence from data on individual firms suggests that the high level of share redemptions in recent years has not been primarily a phenomenon of dividend replacement. A sample with complete data for the period 1969–88 was used for the investigation. This sample accounted for over half the dividends of all nonfinancial corporations during the 1980s, and so should be fairly representative.

Before the period 1984–88, repurchases were small in aggregate size and did appear to be used in place of dividends. For the period 1979–83, only 30 percent of the firms in the sample (weighted by firm value) repurchased at least 0.5 percent of their equity in at least one of the five years. For the repurchasing subset of firms, however, total repurchases exceeded total dividends in each of the five years. During the next five-year period, 1984–88, repurchasing became much more widespread, with only 21 percent failing to repurchase at least 0.5 percent of shares in at least one year. However, for this group, dividends exceeded repurchases in every year of the period.

[7] U.S. Joint Committee on Taxation (1989, page 11).

borrowing not directly associated with acquisitions may also be attributable to the increase in takeover activity.

Many observers have viewed the tax advantages of borrowing as an incentive to engage in takeovers. However, this argument has its problems. Foremost among them is that firms can gain the tax advantages of borrowing by purchasing their own shares rather than the shares of another company.

The Tax Reform Act of 1986 contained various provisions aimed at curtailing some of the other tax benefits associated with corporate takeovers.[8] It is possible that this change contributed to an increase in firms borrowing to repurchase their own shares (leveraged buyouts are essentially in this category, from a tax perspective) as a substitute for more traditional debt-financed acquisitions of one corporation by another, but it does not explain why debt-financed equity retirements as a whole should have increased in the past couple of years.

Debt, New Equity and Old Equity

Much of the discussion of debt versus equity has ignored the different choices facing new or expanding companies and those with a sufficient base of existing equity. Since all evidence suggests that the rise in corporate indebtedness has come about through increased borrowing by existing companies, it is important that any analysis of the subject apply to the replacement of existing equity with debt rather than borrowing in lieu of issuing new equity.

This distinction is essentially the one made above between the "new" and "traditional" views of the burden of dividend taxation (and, more generally, any taxes on cash distributions). While a single tax (that of the bondholders) is levied on newly issued debt, two levels of taxation (on corporate income and distributions) are levied on newly issued equity. Firms borrowing to replace equity avoid the double taxation of future equity income, but must "prepay" the shareholder-level tax immediately when the funds are distributed. It is not of obvious relevance whether current distributions of equity take the form of repurchases, since they could have done so in the future had the equity not been redeemed. Thus, the recent ascendancy of share repurchases and their favorable tax treatment cannot in themselves explain why firms would wish to substitute debt for existing equity, unless this preferred method of disbursing equity funds is perceived to be temporary (as would be the case if a crackdown on repurchasing activity were

[8] The changes and their implications are discussed in Auerbach and Reishus (1988).

anticipated). Otherwise, one can view an increase in the ability to repurchase simply as a permanent reduction in the rate of tax on distributions.

Just as firms face a smaller marginal tax rate on investment of retentions than on investment financed by issuing new shares, they have a smaller incentive to replace existing equity with debt than to borrow instead of issuing new equity. In each case, it is the avoidance of taxes on current distributions that favors the use of existing equity over new equity. This distinction is of particular relevance when one considers the effects of proposals for the reform of the corporate tax, since they differ markedly in their recognition of it.

Summary

The recent increase in borrowing by nonfinancial corporations is difficult to attribute to the Tax Reform Act of 1986. While the overall tax incentives for some equity investors to hold debt increased, the incentives for other significant equity investors to purchase debt declined. The growth of corporate equity retirements is clearly related to the increase in borrowing, but the tax advantage of redemption over dividends cannot in itself explain the shift toward debt. Another potentially important tax factor, the reduction in the value of interest deductions associated with limitations on the deductibility of net operating losses, points in the opposite direction.

If tax changes have not induced the change in borrowing, however, the underlying imbalances always present in the tax system may have contributed to it. In this sense, the borrowing could be tax-related even if it is not tax-induced, and the need to reduce the remaining imbalance between debt and existing equity might have increased even if the imbalance itself has not.

This distinction requires an understanding of the nontax factors affecting borrowing. If borrowing to retire equity has even a small tax advantage, other, nontax costs must prevent equity from disappearing entirely. These costs might include increased bankruptcy risk, distorted choice of investments and, potentially, an inefficiently short planning horizon.[9] If these nontax costs have not declined, an increase in borrowing would represent an increase in the overall social cost of financial distortions. On the other hand, a reduction in any of these costs, as through increasing efficiency in financial markets or a more competitive market for corporate control, could have led firms to take greater advantage of

[9] No consensus exists that forcing a decline in horizons and, more generally, putting managers "under the gun" would reduce efficiency. Some, for example Jensen (1989), see this as a major benefit of additional borrowing.

whatever tax advantage to borrowing already existed. In this case, the total social costs of tax-driven borrowing would not necessarily have increased. While more of the distortionary activity, borrowing, would be occurring, the financial innovations would have made the activity itself less distortionary. In the extreme case that all real distinctions between debt and equity cease to exist, firms would be led to replace all equity with debt to the extent that any tax advantage at all were available, but the distortion of financial behavior would be entirely absent.[10]

Tax reform may be important even if recent tax changes are not at fault. The case is weakened, however, if the borrowing has resulted from real (as opposed to perceived) reductions in the distinction between debt and equity.

The Gains from Reforming the Corporate Tax

Arguments favoring reform of the corporate tax take two forms. Some are based on welfare arguments concerning the economic distortions of increased corporate borrowing, while others stress the revenue loss to the government if tax-advantaged debt supplants equity. Though evaluating the significance of the economic distortions of borrowing is beyond the scope of this paper, one should be cognizant that, as stressed above, increased borrowing may be due in part to a reduction in such distortions. In addition, the importance of the revenue-loss argument may well have been overstated.

First of all, if debt is tax-favored and firms use more of it, the ensuing revenue losses will be associated with reductions in the marginal corporate tax burden and the corporate cost of capital in the United States. Although reducing the marginal tax burden on new corporate investment would not necessarily increase social welfare, neither is it obviously a destructive policy. Many analysts have viewed with envy the high debt-equity ratios in Japan, interpreting them as a partial explanation for the lower cost of capital there (for example, Hatsopoulos 1983). Second, the estimated losses of revenue from increased indebtedness may be overestimated.

Several factors contribute to such overestimates. Some observers simply ignore the taxes paid by recipients of interest payments on the newly created debt. A more subtle point is that replacements of equity with debt cause a speeding-up of the payment of capital gains taxes on

[10] These changes, and their welfare implications, are discussed in more detail in Auerbach (1989). Also see Bernanke and Campbell (1988).

retired shares.[11] In addition, although it is customary to apply average marginal tax rates on existing interest receipts to estimate the taxes paid on additional interest, such an assumption has little justification.

For purposes of illustration, consider a model in which each firm issues risky equity and riskless debt, with the underlying before-tax returns to the firm unaffected by its financial structure. Investors choose portfolios of debt and equity based on both tax preferences and the motive for diversification. This means that all investors will hold some equity, even those with a strong tax preference for debt, in order to bear some risk and achieve the risk premium that comes with doing so. Now, suppose each firm replaces a fixed fraction of its equity with debt, repurchasing the shares from its shareholders. The mean cash flow passing to owners of equity will decline and the variance of this cash flow will be unaffected, so that the value of equity will fall and the riskiness of its rate of return will increase. Who will hold the additional debt? Consider the following logic.[12]

If existing equity owners simply use the sale proceeds to buy the new debt, they will essentially undo the changes in financial structure generated by the firms, following the standard Modigliani-Miller homemade leverage approach. Investors will hold the same claims to each firm as before, but packaged in different ways. Absent taxes, this would result in the initial equilibrium and no further adjustments would occur. In the presence of taxes, however, a new equilibrium will result.

The shift in each firm's financial structure toward more risky equity will make equity investment in general more attractive to those low-bracket taxpayers with a relative tax preference for debt, since they may now assume a given amount of risk while committing less wealth to the asset, equity, that they would prefer to avoid for tax reasons. Hence, we would expect to observe further shifts toward equity by lower-bracket taxpayers, with more of the debt being purchased by higher-bracket taxpayers. The resulting distribution of purchasers of the new debt will therefore have a higher average marginal tax rate than the distribution of initial equity owners. Note that this argument is not based on any assumption about the initial distribution of equity ownership or the level of risk aversion of any class of investors; nor does it depend in any way on the identity of investors directly purchasing the newly issued bonds.

Given the different distributions of debt and equity holdings, this

---

[11] See Jensen, Kaplan and Stiglin (1989). These authors also include tax revenue coming from increased operating efficiency in their calculations, but these do not derive directly from the transaction replacing equity with debt.

[12] The following arguments may be demonstrated rigorously using the model presented in Auerbach and King (1983), assuming that each investor is at an interior portfolio optimum both before and after the change in financial policy.

Table 4
Marginal Tax Rates on Interest Receipts, Based on Ownership Patterns of Debt and Equity
Percent

Group	Marginal Tax Rate	Percentage of Equity	Percentage of Debt
Households	21.7 (Debt) 25.3 (Equity)	54.2	7.6
Tax-Exempt Organizations	0	11.1	4.4
Foreigners	0	6.1	13.3
Banks and Thrifts	14.9	.2	10.4
Insurance Companies	20.0	5.4	37.6
Private and Public Pension Funds	0	22.6	25.0
Brokers and Dealers	34.0	.4	1.6
Addendum: Average Marginal Tax Rate		15.0	11.2

Sources: Ownership percentages (for 1987): Board of Governors of the Federal Reserve System (1988a). Mutual fund holdings of debt and equity distributed among groups. Tax-exempts separated from household sector according to percentages given in U.S. Joint Committee on Taxation (1989).
Tax rates (for 1988): households, Hausman and Poterba (1987); other sectors, Summers (1989).

weighting scheme leads to a higher estimate of the average marginal tax rate on new interest receipts. An estimate of this difference is provided in Table 4, showing the average marginal tax rates on interest receipts based on ownership of debt and equity. Moreover, it should be kept in mind that not all additional interest deductions will be taken at the 34 percent corporate tax rate. The net gap between effective corporate and bondholder tax rates could well be as little as 10 percentage points, given the current incidence of tax losses among firms.

Proposals to Reform the Taxation of Corporate Cash Flows

One can distinguish two broad classes of proposals aimed at dealing with imbalances between debt and equity.[13] Some would attempt to restrict particular forms of borrowing associated with perceived abuses and "loopholes," while others would be aimed at a more general rationalization of the tax treatment of debt and equity.

Despite their continuing popularity, specific interest limitations are difficult to justify as an appropriate policy tool, except in cases where better-suited approaches are politically impractical or otherwise not

[13] The analysis of this section draws heavily on Auerbach (1989), which discusses the various reform proposals in greater detail.

possible. From a theoretical perspective, few situations exist in which one would wish to control specific types of borrowing rather than regulating directly the objectionable activities with which the borrowing may at times be associated. Moreover, borrowing restrictions may be difficult to enforce.[14] The discussion that follows focuses, therefore, on proposals to bring the general treatment of debt and equity into balance.

Traditionally, analysts have considered integrating the corporate and individual income taxes, converting the corporate tax into a withholding mechanism for the individual income tax. Full integration has never been adopted, but partial integration schemes to alleviate the double taxation of dividends have been implemented in several countries.

Beyond full and partial integration schemes, two alternative proposals have received considerable attention in recent years, the corporate cash flow tax and the proposal for limited dividend relief of the American Law Institute. Each of these proposals has a particular advantage over integration schemes in limiting windfalls to owners of existing equity, but each would also introduce new problems. This section of the paper reviews and compares the effects of corporate tax integration and the newer approaches to corporate tax reform.

Integration

Under full integration, investors would be taxed on a partnership basis. The single, individual tax on equity income would eliminate the importance of the debt-equity distinction; all corporate-source income would be taxed at the individual's tax rate.

Much of the opposition to full integration has been of a technical nature (see McLure 1979), but other difficulties are also found. Because it would subject all equity income to a single tax at the individual's tax rate, few question that an integrated tax system would produce windfalls for the owners of existing equity, for the prospective tax burden on such equity would have been reduced. More disturbing, however, is the prospect that such windfalls would bring with them little positive contribution to the incentive to invest.

Already discussed above is the argument that taxes on distributions from *existing* equity are capitalized into the value of shares and do not influence the marginal cost of capital for reinvested funds. This would mean a current effective rate of tax of 34 percent on reinvested equity funds, plus the effective rate of capital gains tax on accumulated

[14] See Auerbach (1988) for a general discussion. In the particular context of takeovers, see Bulow, Summers and Summers (1989).

earnings, compared to the 28 percent or 33 percent tax rate that most investors would face under an integrated tax system. Put simply, investors would receive a small cut in their marginal tax rates and a large windfall, equal to the present value of the capitalized taxes on distributions forgiven. This would include distributions from all net assets, equal to returns to existing capital plus economic rents less interest payments on preexisting debt.

Because taxation would be only at the investor level, an integrated tax system would cease to tax foreign and tax-exempt shareholders at all on their corporate-source income, treating equity income the way that interest income is now treated. This would increase the relative incentives for foreigners and tax-exempts to hold equity.

Dividend Relief

Dividend relief is much more easily implemented than full integration, for it requires the measurement only of dividends, rather than all earnings. Given the traditional view that the serious problem of corporate double taxation applies primarily to earnings distributed as dividends, dividend relief has been seen as an acceptable solution to the distortions of the corporate tax.

The two basic approaches to dividend relief differ with respect to whether the corporation or the shareholder receives the tax rebate. Relief at the corporate level comes in the form of a full or partial deduction for dividends paid, often expressed in terms of a lower tax rate on distributed earnings, or a *split-rate* tax system.

In practice, split-rate systems have typically allowed only partial deduction for dividends. In Germany, for example, the split-rate system in the 1980s had rates of 56 percent and 36 percent on retentions and distributions (King and Fullerton 1984). In Japan, the rates are currently 42 percent and 32 percent (Japanese Ministry of Finance 1988).

The shareholder-level alternative to the split-rate system is known as the *imputation system,* since in calculating their income shareholders add to the dividends they actually receive additional imputed income equal to some or all of the taxes the corporations are assumed to have paid on the earnings distributed. The shareholders are then given credit for these imputed taxes in calculating their own income, in exactly the way that taxes withheld by employers on wage and salary income are included by employees in their taxable income but also are creditable against their tax liability. In the United Kingdom, for example, the imputation system permits a credit at the basic individual tax rate, so that most taxable investors neither owe additional tax nor receive a refund for excess taxes withheld (King and Fullerton 1984).

As with the split-rate system, any degree of dividend relief is

possible under an imputation system, according to the fraction of corporate taxes imputed. In general, the two systems are equivalent in the case of taxable dividend recipients. The main difference is in the treatment of foreign and tax-exempt shareholders. Since the imputation system allows a credit for corporate taxes only against a shareholder's tax liability, those paying no taxes would receive no credit. Hence, one may view an imputation system as being equivalent to a split-rate system plus a withholding tax at the normal corporate tax rate on dividends distributed to low or zero-bracket shareholders.

Like full integration, dividend relief suffers from the major drawback that it is provided at the very least for all dividends paid to taxable investors, including dividends from existing equity for which there may be very little change in the incentive to reinvest funds. Since the relief would focus on dividends (and, as discussed next, firms will have the incentive to make dividends the main form of distributions), one may view either proposal as being equivalent simply to lowering the tax on distributions directly at the shareholder level. To the extent that the marginal source of equity funds is retained earnings, this would not change the effective tax rate on equity-financed investments at all. Given the revenue cost of dividend relief, this lack of marginal impact is a serious drawback.[15]

An additional effect of both dividend relief and full integration would be that, with dividends relieved of double taxation, firms would have no tax incentive to repurchase shares instead. It should be stressed again, however, that the removal of the incentive to repurchase shares rather than pay dividends should have little effect on the incentive to replace existing equity with debt.

The American Law Institute Proposal

In 1982, the American Law Institute published a volume considering the reform of the U.S. corporate income tax that included proposals by the project's reporter, William Andrews, to provide dividend relief in a manner that would avoid the windfalls common to the schemes discussed above. The Institute/Andrews scheme is fairly elaborate in its detail, and has gone through several draft versions, the most recent published in June 1989. To understand this plan and its effects, it is

[15] Up-to-date revenue estimates for full and partial integration schemes are hard to obtain. However, the 1984 Treasury proposal for a 50 percent dividends-paid deduction estimated a total (corporate and individual) revenue cost of $31 billion for fiscal year 1990 (the last year for which projections were provided).

useful to consider first a much simpler one that shares many of its important characteristics.

The basic problem the American Law Institute plan seeks to attack is that dividend relief is a windfall for equity funds already within the corporate solution. A direct attack on this problem would be to couple a dividends-paid deduction with a tax at the corporate rate on the present value of deductions attributable to dividends paid from existing equity. One would not need to keep track of these dividends. Since dividends are normally taxable to recipients to the extent that they are paid out of a firm's accumulated earnings and profits, the stock of these earnings and profits would serve as an appropriate tax base. The incentive effects would be the same as under a dividends-paid deduction alone, but the revenue effects would be quite different. Even if the windfalls tax were made payable over several years, its revenue could well exceed that lost from the dividends-paid deduction for many years (though not in the long run).

The idea of taxing windfalls is not new. However, proposals to recoup windfalls through explicit taxes have commonly been opposed as being retroactive and unfair, even when they may only partially offset windfall gains delivered implicitly at the same time.[16] The American Law Institute approach achieves such a tax on windfalls, but does so implicitly, in effect making the payment of the windfalls tax (the "toll charge") and qualification for dividend relief a decision of the firm, allowing each firm the option of not qualifying for dividend relief and not paying a windfalls tax.

Despite its many incarnations and sophisticated analysis, the Institute's plan has retained its basic thrust and purpose of providing dividend relief limited to newly contributed equity. It has two major components. The first would provide limited dividend relief along the lines of the dividends-paid deduction. The second would restrict the ability of firms to make tax-favored nondividend distributions of funds not qualifying for dividend relief.

The plan would distinguish between "old" and "new" equity, with shares issued after its enactment being "new" and qualifying for special treatment under the plan's first component, a deduction for dividends paid. The allowable deduction would be calculated by multiplying the value of funds raised from the sale of new shares by some reasonable rate of return. For example, if the plan became effective on January 1,

---

[16] This was the case, for example, for an element of the President's Tax Proposals of May 1985, which would have recouped from corporations the tax reduction due to the corporate rate cut on that component of taxable income arising from previous accelerated depreciation deductions. That scheme would have raised considerable revenue.

1990 and the allowable rate of deduction were 5 percent, a firm issuing $1 million of equity after this date would be entitled to deduct up to $50,000 of dividends annually thereafter. If the firm issued more equity subsequently, its allowable dividend deductions would increase.

Like the other forms of dividend relief discussed above, this part of the American Law Institute plan would alleviate the double taxation facing newly contributed equity capital; for such equity, the plan would be essentially identical to a dividends-paid deduction. This first component of the plan, providing dividend relief for newly contributed equity, is neither problematic nor controversial. It simply does for a certain class of shares what standard dividend relief would do for all. It is the second provision, which aims to curtail nondividend distributions, that has caused controversy (see, for example, Jensen 1989).

The tax on nondividend distributions would apply to shares repurchased by a corporation itself as well as shares redeemed by another via a cash acquisition. It is intended to offset the current tax advantage such distributions enjoy, attributable to the basis that shareholders may deduct from capital gains tax liability (and, before 1987, the lower rate at which such capital gains were taxed). Under the original 1982 American Law Institute plan, this tax would have been an excise tax on the distributions themselves, added to the individual income tax burden. The 1989 version includes instead a corporate-level minimum tax on nondividend distributions at the tax rate of most high-income individual investors (28 percent), creditable against individual tax liability on the distributions. In either case, low-bracket investors would actually face a higher tax burden on nondividend distributions than on ordinary dividends, while the burdens would be similar for high-bracket investors.

Why is the tax on alternative distributions seen as necessary by its supporters, and why is it opposed by others? The relevant question here is what the appropriate benchmark is. The American Law Institute plan takes the view that dividends are the normal form of distribution and that taxes on such distributions are also normal. From this perspective, the recent reduction in taxes through increased nondividend distributions represents an unintended windfall to which shareholders are not entitled. Further, if firms see the nondividend option as unlikely to continue indefinitely into the future, the new opportunity to convert old equity into new equity qualifying for the plan's dividend deduction will spur further nondividend distributions unless the tax on alternative distributions is also instituted. Others, taking the current situation as the normal state of affairs, would view the tightening of rules on nondividend distributions as unfair.

Because the first of the American Law Institute plan's provisions would reduce taxes and the second would increase them, it is natural

that the two parts are viewed with different degrees of enthusiasm by those who would be affected by the plan. Together, the provisions may be seen as providing dividend relief for new equity while eliminating all windfalls from existing equity *relative to the full taxation of all distributions.*

The analysis of the American Law Institute plan to this point has been based on a permanent, unannounced enactment of the plan. However, in a world of uncertain and temporary tax policy, a change in the tax on distributions could do more than change the value of taxes capitalized in equity values. Unlike a direct windfalls tax, the plan's toll charge, consisting of taxes on dividend and nondividend distributions from existing equity, would be paid only upon the distribution of these funds. Given a constant tax system, this distinction would be irrelevant; that is what makes the analogy to the windfalls tax useful. But given the option to delay distributions, the possibility of distorted behavior is very real under the plan.

If, for example, investors expected the tax on alternative distributions to be temporary, the incentive to delay share repurchases and cash-financed takeovers could be significant. In fact, if a phase-in to full dividend deductibility for old and new equity alike were anticipated, even current dividends would be discouraged. Only a convincing, permanent adoption of the American Law Institute plan would avoid these incentives, and consistency of this policy over time would require the system maintaining the distinction between old and new equity to be permanent. Likewise, anticipation that the plan would be enacted would increase nondividend distributions and reduce equity issues. Even if the enactment came entirely as a surprise, there would still be the inevitable question of fairness in transition: for example, how to treat the company that made a large equity issue a day before the provision of relief for new equity took effect.

The Cash-Flow Corporate Tax

Direct taxes on individual consumption or cash flow have enjoyed considerable intellectual support in recent years (for example, Andrews 1974; Bradford 1980). Such a tax base would identify a household's consumption indirectly, using the identity that income is exhausted by saving, taxes, and consumption, by allowing a deduction for saving from the income tax base. Although corporations do not consume, a cash-flow tax base for the corporation has its attractions, too. Like the individual consumption tax, it would not alter the net return to saving.

The literature has noted the attractiveness of a corporate cash-flow tax as part of a system of consumption taxation (Institute for Fiscal Studies 1978; Aaron and Galper 1985), but the corporate cash-flow tax

has, more recently, been proposed as a freestanding reform of the corporate tax (Feldstein 1989).

The two basic approaches to corporate cash-flow taxation are referred to by the Meade Committee (Institute for Fiscal Studies 1978) as the R(eal) versus the R(eal)+F(inancial) bases. The two approaches differ with respect to their treatment of borrowing and interest payments. While the R-base would eliminate interest deductions (and not tax the corporation's interest income), the R+F-base would preserve such deductions (and taxes) but add borrowing to (and deduct lending from) the tax base. Perhaps the most significant difference between the two approaches would be in their treatment of financial intermediaries, whose profits, interest receipts less interest payments, would be tax exempt under the R-base. For nonfinancial corporations, the approaches would have similar effects, although the timing of tax payments by firms could be quite different.

To convert the present corporate income tax to a cash-flow tax, one would replace depreciation deductions with an immediate deduction for all new investment and, under the R+F-base, include all net borrowing in the tax base. The resulting tax base would be the firm's receipts less expenditures, that is, its net cash flow. This cash flow is the sum of all the firm's current distributions to its shareholders, including dividends plus share repurchases. Given the previous discussion of the effects of taxes on distributions, one can see immediately that the cash-flow tax is nondistortionary: although it affects the value of the corporation, it imposes no additional tax on the return to earnings that are reinvested. Moreover, unlike other taxes on distributions (such as the dividend tax) it does not discriminate against newly contributed equity, since it is a tax on distributions net of new equity issues. New equity would not face a net tax, in present value, on its distributions, receiving an offsetting deduction upon its initial contribution. Thus, a move to the R+F-base would be equivalent to replacing the current corporate tax with a tax on all distributions from existing equity. In terms of marginal incentives, this outcome would be equivalent to the abolition of the corporate tax.

A similar analysis applies for the R-base, which has been discussed more frequently as a possible tax reform. By eliminating the deduction for interest payments instead of taxing net borrowing, the R-base would add net distributions to holders of existing debt (interest payments less net borrowing) to those already taxed under the R+F-base. Again, there would be no marginal impact of the corporate tax.

In comparing the impact of the cash-flow tax to the approaches previously considered, one may identify three significant differences:

(1) Unique among the proposals, the cash-flow tax would raise the corporate tax burden on debt-financed investment;

(2) Unique among the proposals, the cash-flow tax would cause the tax system as a whole to favor equity over debt;
(3) Like the American Law Institute proposal, but unlike the other schemes, the cash-flow tax would avoid giving windfalls to existing equity.

Under the current income tax, the effective corporate tax rate on equity-financed investments is close to the statutory tax rate of 34 percent (Auerbach 1987). However, owing to the full deductibility of nominal interest payments, the effective corporate tax rate on debt-financed investment is negative: marginal debt-financed investments will generate negative corporate tax liabilities, since more than the real cost of funds is deductible. Hence, a move to the cash-flow tax will, by setting both effective tax rates to zero, raise the tax burden on debt and lower the burden on equity. This demonstrates the first proposition in the above list.

The second proposition given above also follows immediately. While the *corporate*-level marginal tax rates on debt and equity would be the same under a corporate cash-flow tax, the overall tax rates would not be, since even under current law the treatment of capital gains is favored relative to ordinary interest income. The individual tax advantage to equity, combined with the neutral corporate treatment of debt and equity, would tip the balance toward equity. Depending on the contribution of the dividend tax to the effective individual equity tax rate, this gap could be considerable. The treatment of equity under the cash-flow tax would be more favorable than under a dividend relief scheme, since there is no tax on retained earnings. The treatment of debt is less favorable, since only the cash-flow tax would eliminate the negative corporate tax on debt-financed investment.[17]

Finally, like the American Law Institute proposal, the cash-flow tax would avoid windfalls. Whereas a deduction for all dividends paid, for

[17] In favoring corporate equity over debt, the corporate cash-flow tax might also favor corporate equity over noncorporate investment, which is currently taxed once, to the income recipient, like corporate debt. The answer would depend on how the tax reform would affect noncorporate business, an issue typically ignored in recent policy discussions.

If the noncorporate sector were covered by the new provisions (immediate write-off of assets plus the elimination of interest deductions), then all business borrowing would be equally discouraged relative to equity, and the current relative treatment of corporate and noncorporate equity would be maintained. If, however, there were no change in the treatment of noncorporate equity and debt, this would make noncorporate debt more attractive than corporate debt, and noncorporate equity potentially less attractive than corporate equity, leading to a divergence in the financial incentives at corporate and noncorporate levels.

This issue would clearly require more thought were the corporate cash-flow tax to be considered as a serious policy option.

example, would eliminate the corporate-level tax on all distributed income, including the corporation's pure economic rents and the returns to its existing capital, the cash-flow tax would not do so. If, during the transition period, it preserved the tax treatment of preexisting assets and liabilities by maintaining depreciation allowances for existing assets, allowing existing inventories to be deducted when used and (under an R-base) continuing the interest deductions of existing debt, the cash-flow tax would not alter the tax treatment of distributions from existing equity at all. It would be equivalent at the margin to the abolition of the corporate income tax but would avoid the windfalls. Like the American Law Institute proposal, its only effect would be at the margin. However, unlike that proposal, it would raise the effective marginal tax rate on debt-financed projects and would reduce the tax burden on *all* equity-financed projects, including those financed by existing equity.

The corporate cash-flow tax would, again like the American Law Institute plan, present serious transition problems. Even with a preservation of the tax treatment of existing assets and debt, firms would have a strong incentive to wait to invest if the adoption of a cash-flow tax were anticipated, for the immediate write-off of investment would be received only for new investment. In general, attempts to limit windfalls by distinguishing new from old activity may be subject to similar problems.

Recent estimates for the United States have found that a switch to corporate cash-flow taxation would broaden the corporate tax base, either raising revenue or permitting a reduction in the corporate tax rate without a revenue loss. For the period 1981–83, Aaron and Galper (1985) estimated that a tax rate of only 33 percent, rather than the then-prevailing rate of 46 percent, would have been necessary were a cash-flow tax base adopted. Gordon and Slemrod (1988) estimated that a switch to corporate cash-flow taxation would have increased tax revenues from nonfinancial corporations by $20.8 billion in 1983. However, for two reasons, these results likely overstate the positive revenue impact of adoption today.

First, both estimates are based on the pre-1986 period when depreciation allowances were accelerated and the investment tax credit applied. Thus, the immediate write-off of assets provided by cash-flow taxation would, in itself, have represented a smaller tax reduction than under current law. Moreover, both of the reported estimates are for the long run, and do not properly account for transition-period revenue losses. Based on information provided by Gordon and Slemrod (1988) in their own analysis, Auerbach (1989) found that maintaining depreciation allowances on existing corporate assets and interest deductions on the existing stock of corporate debt would have reduced the revenue gain of a switch to cash-flow taxation from the initial estimate of $20.8

billion to just under $7 billion. However, starting from the post-1986 tax system, with its reduced investment incentives, the same policy would likely lose revenue and reduce marginal tax rates overall. The revenue loss cannot be avoided unless less generous transition provisions are introduced or the corporate tax rate is increased.

The corporate cash-flow tax, like the American Law Institute plan, provides its equity incentives through tax reductions at the corporate level. Therefore, unlike an imputation system, it would extend the benefits of equity relief to foreign equity owners. However, just as a withholding tax could be used to convert the split-rate system into an imputation system, one could couple the cash-flow tax with a withholding tax on equity distributions to foreigners and nontaxable entities. Such a withholding tax was included in the corporate cash-flow tax considered by Aaron and Galper (1985).

Conclusions

The most significant problem one confronts in deciding whether and how to reform the tax treatment of corporate debt and equity is that the impact of taxation on corporate financial policy is poorly understood. Little evidence supports the view that changes in the tax environment have spurred the borrowing boom of the past few years. While the tax advantages of debt have increased for some equityholders, they have decreased for others. The increased incidence of tax losses has contributed further to a decline in the value of interest deductions overall.

The rise in equity retirements appears to be associated with conversions of equity into debt much more than a reduction in dividends; the dividend puzzle remains largely intact. However, the ability to redeem equity without incurring the tax cost of dividends does little to explain why the redemptions have occurred, since such favorable tax treatment would also have been available to future distributions from equity.

Given this uncertainty, one should tread carefully toward significant changes in corporate taxation. Rationalizing the treatment of debt and equity is in general a sufficiently desirable objective that it should be considered, even if recent changes in financial policy are not tax-driven. However, available alternatives all have their drawbacks, offering either revenue-losing windfalls or new complications and distortions. These costs must be measured against the costs of maintaining the current system, difficult as they are to estimate.

References

Aaron, Henry and Harvey Galper. 1985. *Assessing Tax Reform.* Washington: The Brookings Institution.

Altshuler, Rosanne, and Alan J. Auerbach. 1990. "The Significance of Tax Law Asymmetries: An Empirical Investigation." *Quarterly Journal of Economics*, February, pp. 61–86.

American Law Institute. 1982. *Proposals on Corporate Acquisitions and Dispositions and Reporter's Study on Corporate Distributions.*

———. 1989. *Federal Income Tax Project: Reporter's Study Draft.* June 1.

Andrews, William. 1974. "A Consumption-Type or Cash Flow Personal Income Tax." *Harvard Law Review*, April, pp. 1113–18.

Auerbach, Alan. 1979. "Wealth Maximization and the Cost of Capital." *Quarterly Journal of Economics*, August, pp. 434–46.

———. 1983. "Taxation, Corporate Financial Policy and the Cost of Capital." *Journal of Economic Literature*, September, pp. 905-40.

———. 1985. "Real Determinants of Corporate Leverage." In *Corporate Capital Structures in the United States*, B. Friedman, ed., pp. 301–22. Chicago: University of Chicago Press.

———. 1987. "The Tax Reform Act of 1986 and the Cost of Capital." *Journal of Economic Perspectives*, Summer, pp. 73–86.

———. 1988. "Should Interest Deductions be Limited?" In *Uneasy Compromise: Problems of a Hybrid Income-Consumption Tax*, H. Aaron, H. Galper and J. Pechman, eds., pp. 195–221. Washington: The Brookings Institution.

———. 1989. "Debt, Equity and the Taxation of Corporate Cash Flows." Paper presented at The Brookings Institution Conference on Taxes and Corporate Restructuring, May.

Auerbach, Alan J. and Mervyn A. King. 1983. "Taxation, Portfolio Choice and Debt-Equity Ratios: A General Equilibrium Model." *Quarterly Journal of Economics*, November, pp. 587–609.

Auerbach, Alan J. and James M. Poterba. 1987. "Tax Loss Carryforwards and Corporate Tax Incentives." In *The Effects of Taxation on Capital Accumulation*, M. Feldstein, ed., pp. 205–38. Chicago: University of Chicago Press.

Auerbach, Alan and David Reishus. 1988. "The Effects of Taxation on the Merger Decision." In *Corporate Takeovers: Causes and Consequences*, A. Auerbach, ed., pp. 157–83. Chicago: University of Chicago Press.

Bagwell, Laurie S. and John B. Shoven. 1989. "Cash Distributions to Shareholders." *Journal of Economic Perspectives*, Summer, pp. 129–40.

Bernanke, Ben S. and John Y. Campbell. 1988. "Is there a Corporate Debt Crisis?" *Brookings Papers on Economic Activity* 1, pp. 83–125.

Bernheim, B. Douglas. 1988. "Dividends versus Share Repurchases as Signals of Profitability." Mimeo.

Board of Governors of the Federal Reserve System. 1988a. *Flow of Funds Accounts: Financial Assets and Liabilities Year-End, 1964–87.* September.

———. 1988b. *Flow of Funds Accounts, Third Quarter 1988.* December 2.

———. 1989. *Balance Sheets For the U.S. Economy 1949–88.* April.

Bradford, David. 1980. "The Case for a Personal Consumption Tax." In *What Should be Taxed: Income or Expenditure?* J. Pechman, ed., pp. 75–125. Washington: The Brookings Institution.

———. 1981. "The Incidence and Allocation Effects of a Tax on Corporate Distributions." *Journal of Public Economics*, February, pp. 1–22.

Bulow, Jeremy, Lawrence Summers and Victoria Summers. 1989. "Distinguishing Debt from Equity in the Junk Bond Era." Paper presented at The Brookings Institution Conference on Taxes and Corporate Restructuring, May.

Feldstein, Martin. 1989. "Excess Debt and Unbalanced Investment: the Case for a Cashflow Business Tax." Testimony presented to the U.S. Congress, House of Representatives, Committee on Ways and Means, January 31. *Tax Policy Aspects of Mergers and Acquisitions.* 100 Cong., 1st Sess. Washington, D.C.: Government Printing Office, January 31; February 1, 2; March 14, 15, 1989. Part I. Serial 101-10.

Givoly, Dan, Carla Hayn, Aharon Ofer, and Oded Sarig. 1989. "Taxes and Capital Structure: Evidence from Firms' Response to the Tax Reform Act of 1986." Mimeo.

Gordon, Roger and Joel Slemrod. 1988. "Do We Collect Any Revenue from Taxing Capital Income?" In *Tax Policy and the Economy*, L. Summers, ed., vol. 2, pp. 89–130.
Hatsopoulos, George N. 1983. *High Cost of Capital: Handicap of American Industry*. Waltham, Massachusetts: Thermo Electron Corporation.
Hausman, Jerry and James Poterba. 1987. "Household Behavior and the Tax Reform Act of 1986." *Journal of Economic Perspectives*, Summer, pp. 101–119 .
Institute for Fiscal Studies. 1978. *The Structure and Reform of Direct Taxation*. London: Allen and Unwin.
Japanese Ministry of Finance, Tax Bureau. 1988. *An Outline of Japanese Taxes 1988*.
Jensen, Michael C. 1989. "The Effects of LBOs and Corporate Debt on the Economy." Testimony presented to the Committee on Ways and Means, February 1.
Jensen, Michael, Steven Kaplan and Laura Stiglin. 1989. "The Effects of LBOs on Tax Revenues of the U.S. Treasury." *Tax Notes*, February 6, pp. 727–33.
King, Mervyn. 1977. *Tax Policy and the Corporation*. London: Chapman and Hall.
King, Mervyn and Don Fullerton, eds. 1984. *The Taxation of Income from Capital*. Chicago: University of Chicago Press.
McLure, Charles. 1979. *Must Corporate Income Be Taxed Twice?* Washington: The Brookings Institution.
Miller, Merton. 1977. "Debt and Taxes." *Journal of Finance*, vol. 32, May, pp. 261–75 .
Poterba, James M. 1987. "Tax Policy and Corporate Saving." *Brookings Papers on Economic Activity* 2, pp. 455–503 .
Poterba, James M., and Lawrence Summers. 1985. "The Economic Effects of Dividend Taxation." In *Recent Advances in Corporate Finance*, E. Altman and M. Subrahmanyam, eds., pp. 227–89. Homewood, Ill.: Irwin.
Summers, Lawrence. 1989. "Taxation and Corporate Debt." Testimony presented to the Senate Finance Committee, January 26.
U.S. Joint Committee on Taxation. 1989. *Federal Income Tax Aspects of Corporate Financial Structures*. January 18.

Discussion

*David F. Bradford**

As usual, Alan Auerbach has given us a very nice paper, one that includes some elegant and underplayed formal touches about the effect of taxes when general equilibrium portfolio effects are taken into account. In my brief time I am not going to linger on those refinements, but instead will emphasize some of the economic analytical problems that he has highlighted. Most of these problems or puzzles are familiar to tax specialists, but may not yet be sufficiently appreciated by the wider community interested in corporate tax policy.

Corporate Tax Puzzles

The challenge to economic analysis is nowhere clearer than in the case of the dividend paradox to which Auerbach refers, and I would like to work through it in a bit more detail to emphasize its nature. The broad question is, why do corporations pay dividends. But it is not, as often posed more specifically, why do corporations not retain more earnings. Instead it is, why, given a desire to make a distribution to shareholders, corporations use dividends, as the term is defined in the tax law, rather than an alternative form of distribution that is more favorably taxed. The alternative form on which I would like to focus is the use of corporate funds to purchase its own equity shares. Table 1 lays out the consequences of distributing $1 of funds from a corporation to a shareholder

*Associate Dean and Professor of Economics and Public Affairs, Woodrow Wilson School of Public and International Affairs, Princeton University.

Table 1
Effect of Alternative Routes of $1 Distribution to Shareholders

	Dividend	Stock Repurchase
Corporation Bank Account	−1	−1
Corporation Memo: E & P Account	−1	
Shareholder Bank Account	1−m	1−g(1−b)
Shareholder Stock Value	−s	−s−e
Shareholder Memo: Basis		−b

m = Shareholder's marginal tax rate on ordinary income.
g = Shareholder's marginal capital gains tax rate.
b = Shareholder's basis in $1 worth of the stock.
s = Ex-dividend effect (market value of $1 in corporation bank account).
e = Market's valuation of $1 in earnings and profits (E & P) account.

alternatively in the form of a dividend or in the form of a repurchase of $1 worth of the company's stock from the shareholder.

The effect of both transactions is almost the same at the company level. The difference is in the tax-technical detail of the treatment of the company's accumulated "E & P" (earnings and profits) account. When the E & P account is exhausted, a dividend-style distribution is treated by the shareholder as a "return of capital," giving rise to a reduction in the shareholder's tax "basis" in the shares (roughly, the purchase cost of the shares, less any previous return of capital) and no current shareholder income tax.[1] In principle, therefore, a smaller earnings and profit account is a good thing, a small plus for the dividend form of distribution.

A noncorporate shareholder with marginal tax rate m nets $(1−m) from a $1 dividend and suffers a loss of $s in the value of his or her holding, the ex-dividend effect on the stock's price, a result of reducing the corporation's bank balance by $1. If, instead, the shareholder absorbs the $1 distribution via a sale of some of the stock, the net cash realized is reduced, not by the ordinary income tax rate, but by the capital gains tax. The latter is the capital gains rate times the difference between $1 and the shareholder's tax basis in the shares sold, denoted b in the table. Generally, b is greater than zero, and furthermore it used to be the case that the capital gains tax rate was substantially less than the ordinary income tax rate. There is a price to the shareholder, though, for this tax advantage, namely, the using up of some basis, which

[1] If the shareholder's basis is zero, then a "return of capital" is taxed in the same way as a dividend.

implies a possible increase in tax at some time in the future (unless the share is held until the owner's death). Because the thing the shareholders as a group continue to own after the distribution is almost the same, whether the cash flows out by dividend or by share repurchase, the "ex dividend" effect of the share repurchase should also be the same, namely $s. The tiny difference is in the decrement to the corporate E & P account associated with the dividend, and not with the share repurchase, shown in the table as an extra decrement of $e to shareholder wealth under the latter route.

In the typical case we can probably safely assume that the value of e is negligible because most large public corporations can expect never to reach the stage of exhausting their E & P accounts (and for that reason many have no reason to know and do not know their accumulated E & P). In many cases it is also reasonable to neglect the shareholder's basis reduction associated with share repurchase. Under these circumstances the advantage of the repurchase route over the dividend route is: $1-g(1-b) - (1-m)$, or $m - g(1-b)$. In the good old days, the marginal tax rate on ordinary income for a well-to-do shareholder was 50 percent; the marginal rate on capital gains was 40 percent of that on ordinary income: $g = .4m$. The basis in $1 worth of stock might commonly be fifty cents: $b = .5$. These figures imply that in the good old days the net advantage of the repurchase route was $0.42 per dollar distributed! For an average marginal tax rate of 0.2 instead of 0.5, the net advantage per dollar was still $0.17. When one considers that the economic effect of the two routes is *identical*, $0.42 or even $0.17 per dollar was a very substantial penalty to pay for using the traditional dividend method. Yet corporate dividends were, and still are, very substantial. That is the dividend paradox.

The point of this close exploration of the tax advantages of share repurchase over dividends as a method of distributing funds out of corporations is twofold: On the one hand, it illustrates the weakness of wealth-maximizing as a hypothesis upon which to base predictions of the effect of tax policy in the short run. On the other hand, corporate owners do appear to have slowly begun to adapt their actual policies to those that economics suggests are financially dominant. But the change is not by any means complete. Furthermore, by eliminating the rate differential between ordinary income and capital gains, the Tax Reform Act of 1986 sharply reduced (although it did not eliminate) the relative advantage of share repurchase. The lesson may be that the economic analysis does give good predictions over a long enough horizon, but that behavior will adjust slowly and with considerable inertia.

On the face of it, the tax changes in 1986 not only greatly reduced the incentive to use share repurchase (or cash acquisition of one corporation by another, about the same thing as share repurchase as a

way of avoiding dividend tax), they shifted the incentives in favor of debt over equity finance when the matter is viewed from the perspective of the well-to-do individual. Over a period of a decade or so, the marginal tax rate on interest received by such individuals fell from 70 percent to 28 percent, while the tax on equity return in the form of retained earnings dropped from 46 percent plus capital gains tax accrual of, say, 8 percent to 34 percent plus capital gains tax accrual of, perhaps, 9 percent. From an earlier comparison of 70 percent tax on interest and 54 percent on equity, the recent comparison is between 28 percent on interest and 43 percent on equity. As Auerbach points out, tax-exempt entities also hold significant amounts of equity; for them the rate differential has moved in the opposite direction. Interest receipts were and are taxed at 0 percent, whereas the rate of tax on equity has dropped from 46 to 34 percent.

Both of these are partial pictures, however, and neglect the role of inflation. Consider as an example of a corporate asset a machine that costs \$100 and yields \$5 per year in perpetuity. A corporation could borrow at 5 percent interest to buy such a machine and break even, with or without an income tax. By contrast, if it bought the machine outright and retained the earnings it would generate a yield of $(1-t)5$ percent, where t is the corporate tax rate and the individual shareholder level tax on capital gains is ignored. High-bracket individuals, with marginal rates above the corporate rate, would prefer equity to debt. Now introduce inflation at 10 percent per annum. Assuming (heroically) inflation-adjusted depreciation, the corporation's asset would continue to yield 5 percent in real terms before tax, $(1-t)5$ percent real after corporate tax. But the return on debt will now depend on the adjustment of the nominal interest rate. If it adjusts point for point with inflation (thus maintaining constancy in real terms exclusive of tax effects), interest will go to 15 percent. The real interest rate for a high-bracket taxpayer is now sharply negative (15 percent, less, say, 7.5 percent tax, less 10 percent inflation), and there is a strong incentive for high-bracket taxpayers to borrow. Indeed, there is money to be made by borrowing to buy equity, even if the real return from equity is also hurt by inflation (owing to inadequate correction of depreciation allowances). Once again, we have a story with incompletely worked out equilibrium implications, but it would seem that conditions of inflation would induce a shift of equity from low- to high-bracket taxpayers and probably a larger amount of equity overall. With the reduction of inflation rates in the later 1980s one would expect downward pressure on the stock of equity, and upward pressure on the stock of debt.

Since we do not know how equilibrium is determined we cannot be confident about the windfall effects of a program of dividend relief, stressed by Auerbach. Again, a simple example may help clarify the

problem. Suppose both high-bracket individual and corporate tax rates are 30 percent and capital gains are not taxed (because of deferral until death). Then, if the only way corporations can distribute to shareholders is in the form of dividends, we can imagine an equilibrium in which high-bracket individuals are indifferent between equity and debt and zero-bracket individuals (read pension funds) hold only debt. The equityholders are indifferent between "their" corporation's distributing an extra dollar in dividends and its retaining the dollar for distribution a year hence, after earning the going rate of interest (say, 10 percent) less corporate tax. This is because the dollar currently distributed yields the shareholder $0.70. Saved in the bond market for one period, the $0.70 becomes $0.70 x (1 + .10 x (1 − .30)). Alternatively, the dollar retained becomes $(1 + .10 x (1 − .30)) in the coffers of the corporation, which, when distributed, becomes 0.70 x $(1 + .10 x (1 − .30)) in the hands of the shareholders, after payment of dividend tax. The policies, "Distribute now" and "Retain and distribute next year," have the exactly the same consequences for high-bracket taxpayers.

To render this outcome consistent with equilibrium in the market for shares requires that the shares representing $1 inside the corporation be valued at $0.70. The difference between the two values is the dividend tax that has to be paid to get the money out of the corporation. In this situation, eliminating the dividend tax through dividend relief, while leaving the other taxes, would imply a jump in the value of shares by 30/70, or 43 percent. But note that if, instead, the value of shares is based upon the expectation that the funds can be gotten out of the corporation by share repurchase, much less of a discount will be predicted, and much less of a windfall effect of the shift to dividend relief.

Among the approaches to rendering the tax system neutral with respect to the financial structure of the corporate sector, the R-base corporate cash flow tax is certainly the most radical that Auerbach discusses. In my view, he understates the pressure that such a system would create if it were not coordinated with parallel changes in the individual income tax. Here, too, we have a structure of rules under which the usual economic models of the determinants of corporate investment and financial behavior have no equilibrium. The taxation of corporate equity investment would be effected through the realization-based capital gains tax only, while interest receipts would continue to be overtaxed (by virtue of no inflation adjustment). The corporate sector would become a vast tax shelter; high-bracket taxpayers would have strong pressures to borrow to buy equity.

Let me conclude with a less radical suggestion than Auerbach's for moderating the potential windfall gains from introducing an imputation credit on dividends (thereby moving toward neutrality with respect to

financial structure). The approach is suggested by Auerbach's discussion that relates the size of such gains to the amount of dividend tax that would be avoided on, in effect, undistributed earnings accumulated from the past. The trick would be to use the existing tax concept of accumulated corporate earnings and profits (E & P) that is the operational counterpart to undistributed earnings accumulated from the past. Under current rules, this tax account is incremented each year by that year's corporate E & P (which are more broadly defined than taxable income) and decremented by dividends paid. The suggestion is simply to discontinue the addition of earnings to a corporation's E & P account, and treat what we now call dividends (that is, payments out of accumulated E & P) just as we do now. An imputation credit would apply only for distributions that we would now call a return of capital. Recognizing that such an approach would invite many refinements (for example, to reduce a continuing incentive to postpone dividends by making distributions to shareholders through share repurchase), it would take advantage of familiar tax concepts and would probably appear much less academic than a onetime windfall tax.

If these remarks and Auerbach's paper give the impression of a most uncomfortable state of knowledge about corporate income taxation, and about the taxation of capital income more broadly, I do not think the reader is being misled. We live in a system in which the writers of tax law seem to be driven by the requirements of staying ahead of the ingenuity of financial technicians. In my view, approaches are available to us to move toward logically consistent rules that are vastly simpler than the evolving legal tangle that Auerbach analyzes. The key to a tax system that might hold still is uniformity of the tax treatment of both sides of what we think of as capital income transactions, including the applicable tax rate. But, obviously, that would take the fun out of tax analysis and would be the subject of another paper.

Discussion

*Emil M. Sunley**

Alan Auerbach has provided a comprehensive survey of a very complex field. The first part of his paper focuses on the role tax factors may have played in the recent surge in corporate borrowing. I agree with his major conclusion that changes in tax incentives are not the primary cause of the shift toward debt and that the social costs of increased borrowing may have been overstated. One factor that may have contributed to the increased corporate borrowing, not discussed by Auerbach, is the development of a market for high-yield, low-grade corporate bonds; that is, a market for so-called junk bonds. It is only in recent years that large publicly traded corporations have learned that they can issue low-grade subordinated debt.

A tax factor that may have contributed to the surge in corporate borrowing is the expansion of the tax base as a result of the 1986 cutback in tax preferences. For example, the repeal of the investment tax credit permits companies to absorb more interest deductions.

What I want to focus on is the second part of Auerbach's paper: the review of alternative tax reform proposals to reduce the disparities in the tax treatment of debt and equity.

Integration

One of the most significant trends in tax policy in recent years has been the movement in national tax structures from classical systems,

*Director of Tax Analysis, Deloitte Haskins & Sells.

with separate taxation of corporations and their shareholders, towards some form of integration of corporate and shareholder taxation with respect to distributed corporate profits. This trend has grown out of an increasing concern over the impact of the double tax burden that the classical system places on income from capital in the corporate sector.

The double taxation of corporate profits, once at the corporate level and again at the shareholder level, creates three types of distortions that reduce the efficiency of capital markets. First, the classical system distorts the allocation of capital between the corporate and the noncorporate sectors. Second, it encourages corporations to retain their earnings in order to avoid the double taxation of dividends. Third, it encourages the use of debt finance because interest payments are deductible for tax purposes and dividends are not. The integration of individual and corporate taxes would reduce these distortions and would thereby increase economic efficiency.

Although it is recognized that a movement towards corporate integration would improve the allocation of capital, it is not clear that it would increase the level of investment. The major concern is that corporate integration would reduce the "tax" on distributions and thereby encourage additional distributions, reducing business savings. Unless savings of individuals increased, total savings would be reduced.

The United States has not adopted a form of dividend relief primarily because business has offered very little support for such proposals. Business opposition to integration is due to the fact that the benefits of integration are spread very unevenly across industries and across firms within an industry. Integration would provide little or no benefit to small closely held companies, which currently pay little in dividends. Integration would also not benefit rapidly growing or high technology firms, which also pay little in dividends. The utility companies are concerned that integration, particularly the dividends-paid deduction variety, would be treated for utility rate-making purposes as a reduction in the corporate tax, resulting in the benefits of integration being immediately passed through to customers. Large multinational companies that pay substantial foreign taxes but little in U.S. taxes would also not benefit from the proposals, since it is unlikely that the Administration or the Congress would support an integration proposal providing a credit at the shareholder level unless taxes had actually been paid to the U.S. government at the corporate level. Finally, some academics are concerned that dividend relief would provide an unwarranted windfall for old capital.

The choice between the shareholder credit and a dividends-paid deduction hinges on some subtle issues. The shareholder credit looks like individual tax relief, while the dividends-paid deduction looks like corporate relief. The two approaches can be made equivalent if the same

level of dividend relief is provided. If cash dividends are sticky in the short run, the dividends-paid deduction increases corporate cash flow and the shareholder credit increases the cash flow of the shareholders. Also, it is easier to deny the relief to tax-exempt shareholders and foreigners if the relief takes the form of a shareholder credit rather than a dividends-paid deduction.

The American Law Institute proposal described by Auerbach deals with the windfall problem by limiting dividend relief to new equity and by restricting the ability of firms to make tax-favored non-dividend distributions. One problem with this proposal is that Congress might take the stick and not the carrot.

No country has adopted a system of full integration of the corporate and individual taxes where the corporate income is imputed to the shareholders whether it is distributed or not. Full integration, compared to partial integration, would put less pressure on increased distributions since the tax relief from the "double tax" is not triggered when distributions are made. Compared to the classical system of taxing corporations and individuals, however, full integration would increase the pressure to pay out dividends since under the classical system, dividends trigger the second tax.

As Auerbach points out in his paper, the technical problems of full integration have not yet been fully worked out. I believe that most of the complexity could be logged at the corporate level if the corporate tax is retained as a withholding tax. Two particularly difficult areas in a full integration proposal are the treatment of tiers of corporations and how to handle companies with multiple classes of stock.

Cash Flow Tax

A corporate cash flow tax would also eliminate bias between debt and equity. A movement to a corporate cash flow tax involves significant transition problems. How should old investments be treated? How should old debt be treated? There are no easy answers. If, for example, companies are permitted to expense new investments while at the same time continuing to write off old investments, the tax base will shrink significantly. On the other hand, to go cold turkey and deny any further write-offs on old investments would penalize companies that made very large irregular investments just before the switch to the cash flow tax.

Blueprints suggested that the transition problem be handled by requiring taxpayers, for a period of ten years, to compute their tax under the old and new laws and pay the higher of the two computed taxes. This approach avoids significant revenue loss during the transition, but

the simplicity gains from a cash flow tax would be dissipated if the old law is retained for ten years.

The international implications of introducing a cash flow tax also are troublesome and have no easy solutions. If the United States adopts a pure corporate cash flow tax, a significant amount of tax revenue would be transferred from the United States to any home country that continues to rely on income taxes. This problem was recognized by the Meade Commission. The solution was to impose a special withholding tax on dividends paid to foreigners. The purpose of this withholding tax would be to soak up the allowable foreign tax credit in the home country, so that no residual tax would have to be paid in the home country. It is not at all clear whether the regular cash flow tax or the special withholding tax would be creditable against the home country's income tax. The withholding tax would violate the nondiscrimination provisions of existing tax treaties.

Conclusion

In 1986, Congress rejected any fundamental change in the way the United States taxes corporations and shareholders. Since then, the wave of corporate mergers and reorganizations and the surge in corporate debt have rekindled interest in reducing or removing the bias against corporate equity. Auerbach provides a very able survey of the issues surrounding any fundamental change in the tax treatment of corporations and shareholders.

Reference

Bradford, David F. and the U.S. Treasury Tax Policy Staff. 1984. *Blueprints for Basic Tax Reform*. Second edition, revised. Arlington, VA: Tax Analysts.