FUNDAMENTAL TAX REFORM AND CORPORATE FINANCIAL POLICY

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ABSTRACT

How tax reform affects corporate financial decisions helps determine whether reform will increase capital formation and simplify the tax system. This paper describes the effects of fundamental tax reform on corporate tax planning and summarizes economists' knowledge of the magnitude of these effects. We analyze income tax reform, consisting of integrating corporate and personal income taxes, and moving to a broad-based consumption tax. As prototypes of reform, we use the U.S. Treasury's Comprehensive Business Income Tax proposal for income tax reform and the Flat Tax for consumption tax reform. The critical difference between these reforms is that the consumption tax gives firms immediate deductions for capital outlays instead of the depreciation allowances of the income tax. Tax reform can affect organizational form, capital structure, and timing decisions. Our major theme is that the two types of reform will have similar effects on business financial decisions because they both integrate corporate and personal income taxes. Both reforms eliminate the tax differentials between corporate and noncorporate businesses and between debt and equity financing. Since both reforms eliminate investor-level taxes on financial assets, they reduce the effects of taxes on timing decisions associated with financial assets, such as the timing of corporate dividends. How taxes affect these financial decisions have important implications for the incidence of the corporate tax. These reforms also greatly alter the current incentives for tax-motivated financial planning.

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I. INTRODUCTION

Proponents of fundamental tax reform in the United States claim that tax reform would increase saving and investment (see, *e.g.*, the analysis in Auerbach, 1996) and create a simpler tax system (see, *e.g.*, the analysis in Slemrod and Bakija, 1996). Both of these claims depend on how reform would change the tax treatment of business organization and financing decisions. These decisions help determine the allocative and efficiency consequences of capital taxation, an important input for analyzing the effects of tax reform on saving and investment. For example, if borrowing is the marginal source of funds, Stiglitz (1973) concludes that the corporate income tax is a nondistortionary tax on economic profit that does not change the rate of return to capital; in contrast, general equilibrium models of the corporate income tax, starting with Harberger (1962), typically assume equity-financed investment and find that the corporate income tax lowers the rate of return to capital. Regarding tax simplification, much of the current tax system's complexity arises from taxing capital income; hence whether reform can simplify the tax system depends on its effects on the tax incentives for financial planning. In this paper, we describe the major effects of fundamental tax reform on corporate tax planning and summarize economists' knowledge of the magnitude of these different effects.

"Fundamental tax reform" is a broad term that encompasses a wide range of policies, including income tax reforms and replacing the current tax system with a broad-based consumption tax. Despite this range of policies, possible reforms have several common features. First, a common goal of tax reforms is to reduce the disparity in tax rates across different types of real assets and across different financial contracts. Second, fundamental tax reforms of both the income and consumption variety typically call for a broader tax base with lower marginal tax rates. For income tax reform, our definition of fundamental tax reform includes proposals to integrate the personal and corporate tax systems and move toward a more consistent definition of income across types of assets. Moving to a consumption tax can be thought of as taking such an income tax reform one step further -- the consumption tax would replace the system of

depreciation allowances under the integrated income tax with immediate deductions for capital outlays of businesses. A major theme of our analysis is that since the two reforms share this first step, many of their effects on corporate financing decisions are similar.

We identify two major areas of policy concern. First, available evidence on the importance of financing and organizational distortions suggest efficiency gains from fundamental income or consumption tax reform. Second, fundamental tax reform could greatly alter the tax planning landscape which would impact the complex financial transactions (*e.g.*, derivatives and swap contracts) that firms use to lower their tax payments under current tax rules.

This paper proceeds as follows. Section II describes tax planning under the current tax system. Section III briefly outlines prototypes for tax reform and their treatment of the business sector and financial assets. Sections IV - VI evaluate distortions of organizational form, capital structure, and timing, respectively. Section VII links assumptions about financing distortions with analyses of the incidence of the corporate tax. In section VIII, we evaluate likely tax planning opportunities in the aftermath of tax reform. Section IX concludes.

II. TAX PLANNING UNDER THE CURRENT TAX SYSTEM

The current U.S. tax system is a hybrid of income and consumption tax rules (see, *e.g.*, the review in Engen and Gale, 1996). The reasons behind the hybrid tax system include both administrative issues (*e.g.*, difficulties in measuring income accruing as unrealized capital gains or as consumption flows from consumer-owned durables) and policy choices (*e.g.*, special tax provisions for retirement saving). As part of this hybrid, the United States has a classical corporate income tax. This system taxes corporate income twice, once at the entity level and again at the investor level.

The classical corporate tax and the hybrid of consumption tax and income tax rules create incentives for firms to minimize their tax liabilities through financial planning. Specifically, these

incentives include discouraging incorporation, encouraging borrowing (since the interest payments on debt-financed corporate investment are tax deductible), and altering the timing of transactions (including the payment of dividends and the sale of assets). In sections IV - VI, we provide more details on these incentives and how fundamental tax reform would affect them.

While firms sometimes respond to tax incentives by changing their financial plans, firms also creatively design contracts to get the tax benefits of a decision without incurring all of the associated nontax costs. For example, firms write contracts that blur the nontax distinction between debt and equity but qualify for interest deductions for tax purposes. Such financial "engineering" challenges the tax authorities to distinguish between different contracts. This cycle of financial innovation and regulation increases the complexity of the tax system. Furthermore, if firms differ in their access to these techniques, then this planning creates unintended distortions across firms. In the sections on organizational form, capital structure, and timing, we illustrate how the tax system encourages financial innovation.

Before describing the impact of potential tax reforms on tax planning, we review how the current system creates tax planning opportunities. The returns to tax planning depend both on the level of tax rates and on the dispersion of tax rates across investors or assets. Higher tax rates increase the returns to arranging financial contracts to minimize taxable income. Tax rate differentials -- across investors and across different types of income -- play a crucial role in tax planning. The simplest tax rate differentials occur across investors. For example, with progressive taxation, marginal income tax rates rise with income. In addition, taxable investors and tax-exempt investors, such as pension funds and not-for-profit organizations, face different tax rates. These differentials often reflect policy decisions that tax rates should vary depending on the ownership of income. Tax rate differentials across investors create incentives for investors with positive income trying to be classified as having a lower tax rate and investors with negative income trying to be classified as having a higher tax rate. For example, parents (corporations) with high marginal tax rates may try to shift income to their children (unconsolidated

subsidiaries or pension funds) who face a lower marginal tax rate.

Stronger tax incentives occur when these tax rate differentials across investors are combined with tax differences across types of income or assets. The tax system has a myriad of distinctions among types of income and assets. Income can either be ordinary (*e.g.*, wages, interest, or dividends) or capital (*e.g.*, capital gains). Some investors face lower tax rates on capital gains than ordinary income. The timing of tax payments may also differ because some capital income is taxed on realization rather than accrual. Examples of how tax rules vary across assets include: depreciation schedules for cost recovery, rules to differentiate equity from debt, and rules applying to original issue debt to determine the accrual of interest income and deductions. These tax rules often rely inherently on arbitrary judgments. The rules for financial transactions are particularly difficult to design because a set of cash flows can be produced by many different financial arrangements. Unless all of these arrangements yield the same tax result, then taxpayers can choose the financial arrangement that minimizes their tax burdens.

Combining the tax rate differences across assets and investors creates clientele-based tax planning opportunities and, in some cases, the possibility of tax arbitrage. Investors with high tax rates are the natural clientele for lightly-taxed forms of income (*e.g.*, high-tax-rate investors own municipal bonds) and investors with low tax rates tend towards highly-taxed assets (*e.g.*, pension funds own corporate bonds). In its extreme form, tax planning leads to tax arbitrage -- investments in which firms have a zero net position but earn income from the differential taxation of the components of the transaction.

Financial market innovation has facilitated more advanced forms of tax planning.[1] The flexibility inherent in financial assets simplifies splitting the returns on real assets to construct tax-motivated clienteles. Derivative securities and other complex transactions complicate defining ownership of an asset.

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[1] While the economics and finance literature has long recognized the role of complex financial instruments in tax avoidance, the details of particular transactions are much more developed in the tax law literature. Recent examples from the legal literature on the general issue of taxes and financial innovation include Kleinbard (1991), Shuldiner (1992), Warren (1993), Strnad (1994), and Weisbach (1995).

For example, the risk involved in owning a share of stock can be undone by either selling the share, short-selling the share, or writing an appropriate set of options on the share; however, these three methods of disposing of risk are taxed differently.[2] These differences in the taxation of economically similar transactions create arbitrage opportunities. Because the principal role of financial markets is to make financial claims liquid and fungible, it is inherently difficult to measure consistently the outcomes of these different transactions (see, *e.g.*, Weisbach, 1995). For physical assets, however, it is relatively easy to assign ownership of the asset to an entity and measure the benefits and costs of ownership.[3] Whether tax reform can successfully reduce the incentives for tax planning depends on whether it can decrease the tax rate differentials across investors and assets and lessen the scope for tax-motivated financial innovation.

III. PROTOTYPES FOR FUNDAMENTAL TAX REFORM

Proposals for fundamental tax reform typically suggest moving to either a more pure income tax or a more pure consumption tax. Although these two proposals appear to be on opposite ends of a spectrum, the purer income tax and the purer consumption tax may affect corporate financing decisions in similar ways. Moving to a purer tax system of either type would reduce tax-planning opportunities because tax-minimizing strategies often involve combining transactions with different tax treatments (*i.e.*, part of the transaction receives pure income tax treatment, while another part receives consumption tax treatment) or by taking advantages of disparities in tax rates across investors. Thus either reform reduces the tax rate differentials discussed in the previous section.

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[2] We are assuming that investors' portfolio choices are primarily motivated by risk and return considerations rather than the other benefits (or burdens) of ownership, such as voting and liability issues. Paul (1996) discusses the distinction between holding (versus disposing) of an asset for tax purposes and hedging risk as a substitute for disposing of the asset.

[3] While it is easier to assign ownership to the returns to physical assets than the returns to financial assets, some scope remains for tax planning with physical assets. Leases provide opportunities to separate the physical use of an asset from its ownership for tax purposes. However, as discussed below, the incentives for this tax planning are linked to disparities in marginal tax rates which tax reform would reduce.

In the next subsection, we describe a prototype of income tax reform. We proceed to show how this income tax could be converted into a consumption tax and argue that this conversion would not have major implications for corporate finance issues. We conclude the section with an outline of how we define fundamental tax reform for the remainder of the paper.

A. Broad-Based Income Tax Reform

For corporate financing decisions, the critical element of fundamental reform of the income tax is the integration of the corporate and the personal income tax systems. In theory, integrating the systems would eliminate two distortions from the current tax system. First, integration would eliminate the distinction between corporate and noncorporate businesses by abolishing the double taxation of corporate income. Second, this reform would remove the differential taxation of debt and equity financing. Whether the actual tax reform process would deliver these benefits depends on the details of the new tax system.

The U.S. Treasury Department's recent study of corporate tax integration (see U.S. Department of the Treasury, 1992) presents several alternative approaches to integrating the individual and corporate tax systems. Rather than repeat this discussion of the various proposals, we outline a stylized version of one proposal, the Comprehensive Business Income Tax (CBIT). The goal of CBIT is to tax business income once. CBIT is a business-level tax on the return to capital of businesses. Broadly speaking, the business-level tax base under CBIT is revenue from the sale of goods or real assets less wages, material costs, and depreciation allowances for capital investments. To conform to standard income accounting principles, the CBIT base uses depreciation allowances that follow as closely as possible economic depreciation. Because CBIT includes a tax on capital income, it runs afoul of the standard income tax accounting problem of adjusting for inflation. To tax real, rather than nominal, capital income, the cost recovery system (depreciation allowances) must be indexed for inflation. CBIT does not distinguish whether investment is financed by debt or equity. That is, in contrast with the current tax system, CBIT would not allow

businesses to deduct interest payments from their tax base.[4] Because CBIT taxes business income at the entity level, there is no need for investor-level taxes on capital gains, interest, or dividends received.[5]

CBIT can be thought of as the capital income tax component of a broad-based income tax that collects taxes from labor income through a household-level wage tax. We assume, for simplicity, that the marginal tax rate in CBIT is the same as the marginal wage tax rate. With this assumption, capital and labor income face the same tax rate. If the wage tax rate differs from the CBIT rate, then labor and capital income face different tax rates; however, capital income from different types of assets faces a common tax rate regardless of whether it is financed by debt or by equity.[6]

B. Converting the Income Tax into a Consumption Tax

Converting CBIT into a consumption tax turns out to be quite straightforward. Instead of measuring business income through depreciation allowances, a consumption tax version of CBIT would allow businesses a deduction for capital investments when assets are purchased. This adjustment converts the combination of CBIT and a wage tax into the Flat Tax proposed by Hall and Rabushka (1983, 1995). We use the Flat Tax as the model of the consumption tax for the purposes of this paper.[7] Our focus on

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[4] As with a consumption tax, this raises questions about how to tax financial intermediaries. For suggestions, see U.S. Department of the Treasury (1992, Chapter 5) and Bradford (1996).

[5] Moving beyond the business sector, an important distinction between a pure income tax (sometimes referred to as a "Haig-Simons" income tax) and the combination of CBIT and a wage tax is that CBIT does not tax capital income earned outside of business entities. Owner-occupied housing is the primary form of capital outside the reach of CBIT. While this distinction is important for analyzing the efficiency of tax reform proposals (*e.g.*, the allocation of capital between housing and business uses) and the distribution of tax payments, it is less clear that this omission from the tax base greatly affects the corporate finance issues surrounding tax reform.

[6] If the household and business tax rates differ, then tax planning opportunities arise from recharacterizing income as wage or capital income. This form of tax planning is especially relevant for closely held businesses that have more leeway in substituting a lightly taxed form of income for a more heavily taxed form of income. This type of tax planning is probably less relevant for publicly held corporations; however, it could create some forms of tax arbitrage for financial intermediaries.

[7] Related issues arise in the discussion of consequences of other tax reform proposals. We describe other recent proposals in Gentry and Hubbard (1997a); see also Slemrod and Bakija (1996).

expensing as the central difference between CBIT and the Flat Tax reflects our emphasis on the effects of tax reform on business finance. The Flat Tax has an added advantage of mitigating the distortions of capital allocation between the business and housing sectors. In the aggregate, the tax base is a measure of consumption because sales between businesses induce offsetting inclusions and deductions for the seller and buyer: the seller's tax base increases by the purchase price, but the buyer's tax base decreases by the purchase price. If the buyer and seller face the same tax rate, then the transaction creates no revenue for the government. For business sales to households, the aggregate tax base increases by the value of the sale.

Having described CBIT and the Flat Tax in this way, we can see that the Flat Tax does not exempt all of what is commonly called "capital income" from taxation (see also Gentry and Hubbard, 1997a). Under the business cash flow tax component of the Flat Tax, the present value of depreciation allowances for one dollar of current investment is one dollar, while the present value is less than one dollar under the income tax. For a risk-free investment project, the tax savings from depreciation allowances represent risk-free flows,[8] which the firm would discount at the risk-free rate of interest. For a marginal investment (in which the expected rate of return just equals the discount rate), the up-front subsidy to investment provided by expensing equals the expected future tax payments. It is in this sense that the "return to capital" is not taxed under a cash flow tax or a consumption tax.[9]

What about inframarginal investments? That is, in addition to risk-free projects, suppose that certain entrepreneurs have access to investments with inframarginal returns (associated with rents to ideas, managerial skill, or market power). In this case, what is taxed is rates of cash flow in excess of the firm's discount rate for depreciation allowances. Cash flows representing inframarginal returns are taxed

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[8] Here we are abstracting from tax loss asymmetries.

[9] Life-cycle simulation models used to evaluate tax reforms follow this intuition and generally assume one risk-free return on accumulated savings (see, *e.g.*, Auerbach and Kotlikoff, 1987; Hubbard and Judd, 1987; Hubbard, Skinner, and Zeldes, 1995; and Engen and Gale, 1996). In such models, the shift from an income tax to a consumption tax is equivalent to forgiving the taxation of capital income from new saving and imposing a one-time tax on existing saving used to finance consumption.

equivalently under the broad-based income tax and the cash flow tax (or consumption tax). As long as the scale of inframarginal projects is limited (and entrepreneurs' project selection is optimal), the tax saving from expensing should be invested in another risk-free asset. Hence for inframarginal projects only the return representing the risk-free rate is untaxed under the cash flow tax or consumption tax.

What about risky investments? First, risky investments generate *ex post* high or low returns. The component of capital income that represents luck after a risky investment has been made can be treated like the inframarginal return in the foregoing example of the income tax and the cash flow tax. Second, risky investments have a higher *ex ante* required rate of return than risk-free investments, reflecting a risk premium to compensate savers for bearing risk. Whether either tax system levies a tax on the risk premium depends on how one defines a "tax." If a tax is defined as an increase in expected government revenue, then both the income tax and the cash flow tax include the risk premium. If, in contrast, a tax is an increase in the discounted present value of government revenue, then neither tax system includes the risk premium. In either case, the central point is that the stylized income tax and consumption tax treat the return to risk-taking similarly.

To summarize, what is often called the return to capital can be though of as the sum of the risk-free return (opportunity cost), inframarginal returns (economic profits), and returns to risk taking (payment for bearing risk and luck). In contrast to the base of the consumption tax, the income tax includes the opportunity cost of capital, which equals the rate of return on a marginal riskless project.

C. Working Definition of Tax Reform

For the remainder of the paper, we use the term "fundamental tax reform" to represent tax proposals with the following characteristics:

(1) It is a combination of a business-level tax (with either cash flow or business income as the base) and a household wage tax.

(2) For an income tax version of reform, we assume that depreciation allowances are as close to economic depreciation as possible; for a consumption tax version of reform, businesses will deduct capital expenditures.

(3) The business-level tax does not distinguish between debt and equity financing.

(4) In order to minimize the differences in marginal tax rates across business entities and investments, firms carry net operating losses forward with interest.[10]

(5) There are lower marginal tax rates with a single marginal tax rate across business entities and households; the household tax can have a personal or family exemption.

Because fundamental tax reform implies either income tax reform or moving to a consumption tax, we will distinguish between effects on corporate finance issues that do not depend on the choice of tax reforms from effects that differ between the two reform proposals.

IV. ORGANIZATIONAL FORM DISTORTIONS

Traditional arguments for eliminating differential capital taxation have focused on the distortions of business organizational form[11] arising from a classical corporate income tax. By taxing corporate equity income twice, the classical corporate tax system discourages equity-financed investment by corporations.

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[10] The actual CBIT and Flat Tax proposals do not include interest for tax loss carryforwards. These proposals would probably maintain something like the current tax rules that allow limited carrybacks and carryforwards of current tax losses without an adjustment for the time value of money. With such rules, effective tax rates can still vary across firms even when all firms face the same statutory marginal tax rate. Hence these rules motivate several tax planning strategies, including leasing and some forms of corporate reorganization. These tax planning incentives would continue under tax reforms that retain such loss offset rules.

[11] We discuss tax-induced distortions in business organizations in Gentry and Hubbard (1997b). In addition, because of our emphasis on corporate finance, we abstract from a more general discussion of intersectoral and interasset distortions caused by the current system of differential taxation of business capital income (see, e.g., Gravelle, 1981; Fullerton and Henderson, 1987; and Auerbach, 1989). For the most part, removing such distortions can be accomplished by fundamental income tax reform in the form of CBIT (or the spirit of the Tax Reform Act of 1986). Some additional improvements in allocational efficiency are made possible by a consumption tax because of inflation non-neutralities in the income tax (see Cohen, Hassett, and Hubbard, 1997).

In addition, the corporate sector must earn a higher pretax rate of profit to prevent capital from flowing to the noncorporate sector. The tax distorts the allocation of resources by discouraging the use of the corporate form even when incorporation would provide nontax benefits -- such as limited liability for the owners, centralized management, free transferability of interests, and continuity. Since Harberger's (1962) seminal research, more sophisticated models have been constructed to determine the costs of the economic distortions caused by the corporate income tax (see the studies reviewed in Shoven and Whalley, 1992, and U.S. Department of the Treasury, 1992). For example, Harberger's original model delineated only noncorporate and corporate sectors; some researchers developed models with more sectoral detail.

More recently, models emphasizing shifts in the relative importance of corporate and noncorporate producers within an industry have suggested greater distortions under the corporate tax than suggested by earlier approaches (see Gravelle and Kotlikoff, 1989). The additional cost arises because corporate and noncorporate producers within an industry possess differential advantages. Corporations may be better able to exploit scale economies, while noncorporate organizations may be better able to encourage entrepreneurial skill. Distorting the choice between these organizational forms thus means diminishing the use of scale economies as well.

While theoretical such models as Gravelle and Kotlikoff (1989) suggest that the tax-induced distortion of organizational form could have substantial efficiency costs, recent empirical estimates by MacKie-Mason and Gordon (1997) contradict these predictions. Using time-series data from U.S. tax returns, MacKie-Mason and Gordon find that the differential taxation of corporate and noncorporate businesses has a modest (but statistically significant) effect on the amount of assets and income in the corporate form. For example, they estimate that a 10-percentage-point decrease in the tax rate on noncorporate income would cause only 0.2 percent of total assets to shift out of the corporate form. Despite these relatively small effects, the results of MacKie-Mason and Gordon imply that the excess burden from distorting organizational form choices equals 16 percent of business tax revenue. One

difficulty in measuring the excess burden from this organizational form distortion is that it requires evaluating how much the *marginal* firms value corporate characteristics, such as limited liability and access to public equity markets.

MacKie-Mason and Gordon focus on tax rate changes and organizational form choices using data from 1959 to 1986. Their model only predicts about half of the observed shift in organizational form after the Tax Reform Act of 1986 (TRA86). In addition to changing marginal tax rates substantially, TRA86 also changed various tax rules, such as the General Utilities Doctrine and passive loss rules, that affect organizational form choices. Several responses to TRA86 suggest that taxes do play an important role in organizational form decisions. First, Nelson (1991) and Poterba (1992) document the proliferation of S-corporations which do not face double taxation. Second, the rise of publicly traded partnerships in the mid-1980s and the subsequent tax reforms that legislated their demise are another case study of how organizational form adapts to tax law (see Gentry, 1994). Third, the increasing importance of limited liability companies (LLCs) also attests to the incentives to avoid organizational forms with double taxation after TRA86 (see Hamill, 1996). In summary, taxes appear to play an important role in organizational form choices for some firms (though not necessarily the largest public corporations) but the magnitude of this effect and the efficiency costs are difficult to measure.

The tax bias against corporate equity investment must be placed in the context of other tax considerations (which we discuss in greater detail below). For example, when the source of corporate equity investment is retained earnings, rather than new share issues, then the funds for investment are taxed at the corporate level and as capital gains to investors. At various times and in certain industries, the combination of the corporate tax rate and the effective tax rate on capital gains has been greater than, equal to, and less than the individual income tax rate on business income. In this way, differences among tax rates may reduce, eliminate, or even reverse the bias against investment by corporations. An additional mitigating factor is the use of debt financing; to the extent that corporations finance investments through

debt, the relative tax advantage for noncorporate businesses is reduced.

Switching from the current tax system to the Flat Tax would eliminate the distortions of organizational form arising under the classical corporation income tax. This efficiency gain -- which some models summarized in U.S. Department of the Treasury (1992) suggest is substantial -- is accomplished, however, by integrating the corporate and individual income tax systems. Hence fundamental income tax reform would also yield this gain, though the Flat Tax would also address the distortion in the allocation of capital between owner-occupied housing and corporate capital.

V. CAPITAL STRUCTURE DISTORTIONS

In practice, the effect of the corporate tax distortion on debt-equity ratios and on economic efficiency depends in part on the degree of substitutability of debt and equity from a nontax perspective. If, on the one hand, firms consider debt and equity to be perfect substitutes in corporate finance, taxes will affect capital structure but will have no efficiency consequences for the firm. If, on the other hand, capital structures are completely determined by nontax considerations, differential taxation leads to differences in effective tax rates on capital among firms.

The general benchmark for analysis is the frictionless world of Modigliani and Miller (1958): with no taxation, no bankruptcy costs, and no information problems, corporate financial policy is irrelevant. With bankruptcy costs and corporate taxes, firms experience a tradeoff at the margin when raising additional debt financing between an increased probability of incurring bankruptcy costs and the tax subsidy granted to debt.

In general, both corporate and individual taxes (on ordinary income and capital gains) matter for decisions about corporate capital structures. While the corporate tax favors debt financing, the individual tax favors equity financing. Although dividends and interest income are taxed similarly in the individual tax, equity income received in the form of capital gains is taxed at a lower effective rate on account of

deferral (and, in some periods, lower explicit tax rates).

With corporate and individual taxes, the net tax benefit to financing through debt depends on individual tax rates on interest, dividends, and capital gains, the corporate tax rate, and dividend policy. In particular, for an investor facing tax rates of θ on interest and dividends and c on capital gains, the relative attractiveness of debt financing over equity financing is measured at the margin by:

$$(1 - \theta) - [(1 - \tau) d (1 - \theta) + (1 - d)(1 - c)] - b,$$

where τ is the corporate tax rate, d is the dividend payout rate, and b is the marginal bankruptcy cost. Gordon and MacKie-Mason (1990) specify b as a function of the capital structure and obtain an expression for selecting the capital structure that maximizes the net incentive for debt financing.

In the frictionless model ($b = 0$) considered by Miller (1977), when no dividends are paid ($d = 0$) and the effective tax rate on capital gains is zero ($c = 0$), the marginal investor is indifferent between bonds and equity if $\theta = \tau$. If $\theta > \tau$, the investor will invest only in equity; if $\theta < \tau$, the investor will invest only in debt. While firms' capital structures are indeterminate in Miller's model, the equilibrium capital structure for firms as a whole depends on individual income tax rates and the distribution of wealth across tax brackets. While the Miller model is analytically transparent, its predictions about investor clienteles and the lack of patterns in corporate capital structures is counterfactual. Generally speaking, researchers have attempted to extend the intuition by describing cross-sectional variation in the net tax incentives based on non-debt tax shields or on information incentive problems in financial contracting.

In the first research program, DeAngelo and Masulis (1980) linked non-debt tax shields with cross-sectional variation in debt policy. In their approach, the firm's effective tax rate on interest deductions at the margin depends on such non-debt tax shields as tax-loss carryforwards and investment

tax credits.[12] Despite the theoretical link between taxes and debt policy, empirical work following Miller and DeAngelo and Masulis failed to find statistical support for the theory.[13] MacKie-Mason (1990) improves on previous studies by focusing on how taxes affect capital structure decisions at the margin and by using data on incremental financing decisions rather than firms' levels of debt. While this research design leads to clear evidence that taxes affect financing decisions, it does not provide a precise estimate of the long-term effects of fundamental tax reform on corporate financial structure. Exploiting the changes in tax incentives created by the Tax Reform Act of 1986, Givoly, Hayn, Ofer, and Sarig (1992) find further support for the effects of taxes on financing decisions.

Other sources of cross-sectional variation arise from information and incentive problems in financial contracting. Debt can discipline the moral hazard associated with equity financing (as in Jensen and Meckling, 1976), although it can also lead to inefficient increases in managerial risk-taking (as in Myers, 1977). In such approaches, the desirability of debt financing for nontax reasons may vary across firms according to differences in the extent of asymmetric information or in the tangibility of assets being financed.

An additional source of cross-sectional variation comes from differences in firms' relative exposure to idiosyncratic and aggregate risk as in Gertler and Hubbard (1993). Even without taxes, the presence of both types of risk leads to the use of both debt and equity in corporate capital structures. Tax distortions confront firms with an *ex ante* tradeoff between the costs of equity finance and the costs of increasing exposure to the macroeconomic risk that accompanies debt financing. Consistent with the model, Gertler and Hubbard show that, holding firm-level determinants of dividends constant, dividend payments rise in aggregate good times and fall in aggregate bad times.

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[12] Strictly speaking, this approach requires that the cross-sectional variation be exogenous. This is a strong requirement; one firm may have more investment tax credits than a "similar firm" because it has higher investment opportunities.

[13] Examples include Auerbach (1985); Bradley, Jarrell, and Kim (1984); and Titman and Wessels (1988).

An additional possible source of cross-sectional variation is cross-country differences in capital structure for "similarly situated" firms. Rajan and Zingales (1995) offer some suggestive evidence that cross-country differences in the net incentive for debt financing are positively associated with cross-country differences in leverage. One could extend this line of inquiry by studying differences in leverage across countries for firms in the same industry or by exploiting the cross-sectional variation in the net incentive for leverage created by major tax reforms (as in Cummins, Hassett, and Hubbard, 1996 for investment).

Recent financial innovation also suggests cross-sectional variation in firms' ability to increase leverage at the margin to finance investment. Regulatory and other constraints may require some equity-like financing. One such innovation with growing popularity is a class of hybrid securities typified by Monthly Income Preferred Stock (MIPS).[14]

The key to achieving these tax benefits is the insertion of a noncorporate financial intermediary between the issuer of the security and the buyer of the security. For MIPS, this intermediary is often a Limited Liability Company (LLC) that is wholly owned by the issuer. The LLC is taxed as a partnership under U.S. tax law because it has neither continuity of life nor freely transferable ownership claims. The LLC issues publicly traded preferred stock and lends the proceeds to the parent as subordinated debt. The parent's interest expense is tax-deductible, but it is income for the LLC. Typically, the parent's interest payments are timed to match the preferred stock dividends of the LLC. Thus MIPS owners receive dividends equal to their share of the LLC's taxable income and typically pay taxes on the cash received as ordinary income.[15] For financial accounting purposes, the transaction is viewed as if the parent had issued the preferred stock because it is the sole owner of the common shares of the LLC.

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[14] For a comprehensive evaluation of MIPS, see Engel, Erickson, and Maydew (1997).

[15] The parent firm often has the right to defer interest payments. During such periods, the LLC can suspend the payment of dividends but still accrues income interest. If the parent defers interest payments, then the MIPS holder pays taxes before they receive cash dividends. In contrast, with traditional preferred stock, if the issuer skips a dividend, the investor does not have a tax liability.

Goldman Sachs developed MIPS in 1993. Subsequently, investment banks have embellished upon the MIPS structure with various features regarding the organizational form of the "middle man," redemption options, and payment structures. Rather than forming an LLC, which has the paperwork associated with partnership taxation, Merrill Lynch used a trust as the financial intermediary in creating Trust Originated Preferred Securities (TOPRS).[16] While, in 1993, these hybrid securities accounted for just 4 percent of preferred stock issues, they grew to 52 percent of preferred stock issues in 1994 and over 70 percent of such issues in 1995 (see Crain and Jackson, 1996).

For the issuer, the advantage of MIPS over traditional preferred stock is that dividends are paid with pre-tax income rather than after-tax income. A corporation with a 35 percent tax rate raising $100 million through MIPS with a yield of 10 percent saves $3.5 million annually in tax payments relative to issuing traditional preferred stock with the same yield.[17] In practice, MIPS pay slightly higher yields (about 75 basis points) than traditional preferred stock, so some of the firm's tax benefits are lost in the form of higher pre-tax returns to investors (see Bary, 1995); whether this difference in yields is associated with the introduction of a new financial product or will be a characteristic of the long-run pricing of these securities is unclear. For individuals, the tax treatment of preferred stock dividends and MIPS dividends is the same (provided the parent does not defer any interest payments). Because MIPS owners include allocated income from the LLC in their tax bases (rather than dividends), corporate investors do not get the dividends received deduction for owning MIPS, which may lead them to prefer traditional preferred stock.

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[16] Other examples include Lehman Brothers' Quarterly Income Capital Securities (QUICS) and Goldman Sachs' Quarterly Income Preferred Securities (QUIPS). QUICS are closer to straight debt than the other securities and do not necessarily require a financial intermediary between the issuer and buyer; however, unlike standard debt, the issuer has the right to defer payments for up to five years (see Perlmuth, 1995).

[17] To make the $10 million annual dividend payments on traditional preferred stock, the firm needs to earn $15.38 million in pre-tax income and pay $5.38 million in income taxes. If the firm issues MIPS, then it deducts the $10 million payment from income; for the same $15.38 million in earnings (before interest deductions), the firm would only pay tax of $1.88 million (35 percent of $5.38 million) for a tax saving of $3.5 million. This example holds the firm's investment decision fixed; alternatively, if less-heavily taxed equity is available, the firm may invest more, which would lower the marginal return to capital.

The MIPS example highlights the somewhat arbitrary nature of deciding whether a financing tool qualifies for the tax advantages of debt. It is easy to imagine tax regulations reclassifying MIPS as preferred stock rather than as debt by consolidating the parent firm and the financial intermediary for tax purposes.[18] However, these "simple" reforms beg the question of determining when the financial intermediary is sufficiently unrelated to the parent firm so that the loan receives the tax treatment of debt.

Fundamental tax reform would eliminate the need for financial innovations such as MIPS. By eliminating the distinction between debt and equity, either CBIT or the Flat Tax would reduce the incentives to blur the distinction between debt and equity. Under the current tax system, it is unclear why the level of taxation on investment should depend heavily on the form of financing and the arbitrary tax rules determining the taxation of different securities. As financial markets become even more sophisticated, the line between debt and equity for tax purposes is likely to be tested more often. Other recent examples of securities that challenge the tax classification are long-maturity (*e.g.*, 50 or 100 years) zero-coupon bonds and contingent debt (*e.g.*, loans with interest payments contingent on equity returns). By reducing the amounts of tax-motivated financial innovation, these reforms may not greatly affect the level or composition of corporate investment; however, there could be social benefits from reducing the resources devoted to creating, marketing, and managing these financial transactions.[19]

Further empirical research is needed on the degree of substitutability of debt and equity in capital structures and in household portfolios to refine estimated welfare gains from eliminating financing

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[18] Recent tax proposals from the Clinton Administration (eventually excluded from the Taxpayer Relief Act of 1997) have attacked MIPS and similar securities. These proposals would base the distinction between debt and preferred stock on whether the instrument is reported as debt on the balance sheet (for financial reporting) and the maturity of the instrument ("MIPS" loans with maturities of greater than 15 years would be candidates for reclassification). Norris (1997) discusses how firms are tailoring new securities to meet these criteria.

[19] Measuring the social benefits from reducing these activities would be quixotic, but anecdotal evidence suggests these activities are expensive. In June 1995, RJR Nabisco offered to exchange $1.25 billion of outstanding 9.25 percent preferred stock for a 10 percent issue of TOPRS. RJR paid fees totaling $20 million in part to convince investors to swap into a new product; this marketing effort included mailings of Nabisco snack packs. However, these payments were worthwhile for RJR; the net effect of the tax benefits and the higher yield on the TOPRS was to save the firm $26 million in 1996 with similar benefits expected in future years; see McConville (1996) for details.

distortions. The economic models used in the Treasury Department's corporate tax integration study (U.S. Department of the Treasury, 1992) suggest modest efficiency gains from eliminating corporate financing distortions. Returning to our theme, the gains from fundamental income tax reform (CBIT) and the Flat Tax would be identical.

VI. TIMING DISTORTIONS

The current tax system distorts the timing of many financial decisions as taxpayers attempt to postpone (or, occasionally, accelerate) the recognition of income. In this form of tax planning, it is critical that the taxpayer has some control over whether income is recognized (or realized) for tax purposes. One example of how taxes may affect the timing of financial decisions comes from the double taxation of corporate income. While the corporate-level tax occurs when income is earned, the investor-level tax is postponed until the corporation pays a dividend.[20] The other main class of timing distortions comes from the reliance in the current income tax on the realization principle for measuring some income, most notably capital gains income. For investors in financial assets, these incentives lead to a "lock-in" effect for assets with capital gains and to tax-motivated trading strategies. At the business level, similar tax planning issues arise in the area of mergers and acquisitions.[21] In this section, we examine the effects of taxes on corporate payout policy, one of the major timing issues in corporate finance. We then discuss how financial innovation has complicated defining income with the realization principle.

A. Corporate Payout Policy

[20] As we discuss below, if future dividend taxes are capitalized into current stock prices, then current shareholders who sell their shares may bear part of the burden of the future dividend taxes. The key point, however, is that the sellers have some discretion over whether they sell their shares and pay the capital gains taxes associated with past retained earnings.

[21] We discuss the effects of tax reform on the taxation of mergers and acquisitions in more detail in Gentry and Hubbard (1997b). Auerbach and Reishus (1988) discuss the effects of taxes on merger and acquisition activity.

One significant source of tax asymmetry in corporate financial policy arises from the differential treatment at the individual level of equity income in the form of dividends and capital gains. Distributing earnings through dividends is taxed more heavily than distributing earnings through capital gains generated by reinvested earnings or share repurchases.

Financial economists have offered two explanations for why corporate dividends are paid despite the tax bias against dividend distributions (see, *e.g.*, the review of Poterba and Summers, 1985; and U.S. Treasury Department, 1992).[22] The first -- known as the "traditional view" -- argues that dividends offer nontax benefits to shareholders that offset their apparent tax disadvantage. For example, analogous to the earlier discussion of nontax benefits of debt financing, high dividend payouts may decrease managerial discretion over internal funds. Alternatively, dividends may provide signals to investors about a firm's prospects or relative financial strength, although the need to maintain dividend payments as a signal will constrain the use of retained earnings as a corporation's source of financing for new investments. Under the traditional view, firms set dividend payments so that, for the last dollar of dividends paid, the incremental nontax benefit of dividends equals their incremental tax cost. Thus the amount of dividends paid out is expected to decrease as the tax burden on dividends relative to capital gains increases.[23] The Treasury Department's integration report largely adopted this approach.

The second explanation, or "tax capitalization view," assumes that dividends offer no nontax benefits to shareholders relative to retained earnings (see Auerbach, 1979; Bradford, 1981; and King,

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[22] It is fair to say that the question of why distributions take the form of dividends -- instead of, say, share repurchases -- is an open question for research.

[23] The traditional view is not represented by a single analytical model. In most implementations, the traditional view is taken to be consistent with models in which firms derive an advantage -- reflected in market values -- from the payment of dividends. Candidate models are those in which firms pay dividends to: signal private information about profitability (see, *e.g.*, Bhattacharya, 1979; Miller and Rock, 1985; and Bernheim and Wantz, 1995); reduce the scope for managerial discretion (see, *e.g.*, Easterbrook, 1984; and Jensen, 1986); or accommodate investors' "behavioral" preferences for dividends (see, *e.g.*, Shefrin and Statman, 1984).

1977).[24] An additional assumption in this view is that corporations have no alternative to dividends (like share repurchases) for distributing funds to shareholders. As a result, investor-level taxes on dividends reduce the value of the firm (as they are capitalized in share values), but would generally affect neither corporate dividend nor investment decisions. Under the assumptions of the tax capitalization view, corporate tax integration or switching to the Flat Tax would not encourage corporations to increase dividend payouts for existing equity, but would confer a windfall on holders of existing equity.

Two types of empirical tests figure prominently in examinations of the traditional view. One approach (identified with Poterba and Summers, 1985) tests the relative predictive power of a model in which marginal equity financing comes through new shares issues (in which $q = 1$, the traditional view) and a model in which retained earnings are the marginal source of equity financing (in which $q < 1$, the tax capitalization view). Poterba and Summers find that the q model based on the traditional view has greater explanatory power (though there are real concerns about measurement error in proxies for q; see Hassett and Hubbard, 1997). A second line of inquiry compares the costs of paying dividends with the effect of distributions on share values. Bernheim and Wantz (1995) argue, for example, that if dividends are used to signal future prospects, their information content (effect on value) should relate to their tax cost. Bernheim and Wantz estimate that the information content per dollar of dividend distributions declined with the investor tax rate on dividends in U.S. tax reforms in 1981 and 1986, consistent with the traditional view. Such evidence is not necessarily inconsistent with the tax capitalization view if the reductions in marginal tax rates on dividends were anticipated by investors.

The tax capitalization view confronts the problem that dividends appear to be smoothed relative to fluctuations in fixed investment spending. However, simple predictions about the comovement of dividends and investment are confounded when firms have financial slack or use both debt and equity

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[24] Studies of integration by the American Law Institute have sometimes adopted this view. American Law Institute (1989) assumed the tax capitalization view of the dividend decision, while American Law Institute (1992) generally argues the traditional view as a general description.

financing (see, *e.g.*, Gertler and Hubbard, 1993; Gross, 1995; and Auerbach and Hassett, 1997).

Harris and Kemsley (1997) and Harris, Hubbard, and Kemsley (1997) study the direct prediction of the tax capitalization view that the dividend tax is capitalized in share values. Specifically, these papers observe that retained earnings are subject to dividend taxes upon distribution, but paid-in equity can be returned to shareholders as a tax-free return of capital. This observation leads to the cross-sectional prediction that dividend taxes result in a lower value for retained earnings than for total common equity, which includes paid-in capital. Using firm-level data for the United States, they find, consistent with dividend tax capitalization, that accumulated retained earnings are valued less per unit than paid-in capital. In addition, examining firm-level data for a set of countries with different degrees of corporate tax integration, cross-country variation in dividend tax rates is associated with predictable variation in the implied dividend tax discount. This set of evidence provides some support for at least partial capitalization of the dividend tax.

B. Financial Innovation and Realization-Based Tax Rules

In this subsection, we present a stylized example of how derivative securities can be used in tax planning and discuss how the prototypical reforms would affect these forms of tax avoidance. Our example has three critical features. First, assets differ in how they are taxed. Second, tax rate differences across investors create tax-motivated clienteles for the assets. Third, derivative securities can be written on the assets without triggering a change in how the underlying assets are taxed.

A simple illustration of how taxation differs across assets is the difference between assets taxed on an accrual basis and those taxed on a realization basis. For a constant tax rate, accrual-based taxation leads to a higher tax burden than realization-based taxation because the realization principle allows for deferral of taxes. For concreteness, we label the asset taxed on accrual as debt and the asset taxed upon realization as (non-dividend-paying) equity. With these labels, the assets have obvious economic differences in terms

of risk, priority in bankruptcy, and decision-making responsibilities. In some cases, these non-tax differences can be quite small (recall the discussion of MIPS in the previous section); however, for the tax code to treat the assets differently, the assets need at least some cosmetic non-tax difference. Our example focuses on the differences in risk and assumes the other non-tax motivations for holding different securities are relatively unimportant.

Tax rate differences across investors could come from a variety of sources. The simplest example of tax rate differences across investors is perhaps that between taxable investors and tax-exempt investors, such as pension funds. Other differences include those caused by progressive rates and by differences across businesses in loss carryforward positions. The combination of the differences in tax treatment of assets and tax rates for investors creates tax-motivated clienteles for the assets. For simplicity, we consider a transaction between a taxable investor and a non-taxable investor. Similar calculations hold for any tax rate differential. The taxable investor prefers the lightly-taxed asset and the non-taxable investor is the natural clientele for the heavily-taxed asset.

The downside to these tax-motivated investment strategies is that the high-tax-rate investor might not like the non-tax characteristics of the lightly taxed asset (*e.g.*, it is too risky) and vice versa. Derivative securities offer investors a mechanism for trading the risk characteristics of the assets without giving up the tax characteristics. As an example of a derivative security, we use a swap contract.[25] Suppose the debt offers a riskless return and the equity offers a risky return. For tax reasons, tax-exempt investors tilt their portfolios toward debt and the taxable investors increase their relative holdings of equity. To undo this tax distortion in the riskiness of their portfolios, the investors enter into a swap contract. The tax-exempt investor promises to pay the taxable investor the return on a fixed amount of debt in exchange for the

[25] The swap contract is convenient for expository purposes. However, the Taxpayer Relief Act of 1997 changed the rules so that investors with unrealized gains on swap contracts must recognize them before the termination of the contract. One can design similar strategies by combining put and call options. In describing the strategies with options, it is necessary to keep track of the exercise prices of the different options and the tax treatment of the premiums in addition to the cash flows at settlement.

return on an investment of the same size stake in the equity security at some specified future date (*e.g.*, five years from the beginning of the contract). The size of the investment (*i.e.*, the fixed amount of debt specified in the contract) is referred to as the notional principal for the contract. Through the swap contract, the high-tax-rate investor's exposure to the risk of the equity return falls and the tax-exempt investor's exposure to this risk increases. However, this contract is taxed on a cash flow basis rather than an accrual basis.

At the end of the contract, if the equity has outperformed the debt, then the taxable investors pays the tax-exempt investor the value of the equity return in excess of the return on debt.[26] This payment would decrease the taxable investor's taxable income and increase the tax base of the counterparty (not relevant in the case of the tax-exempt investor).[27] The taxable investor has hedged the risk of owning the equity, replacing the risky return with the safe return on debt. However, the taxation of this safe return is deferred until the settlement of the swap contract. Effectively, the taxable investor has recharacterized the financial return on debt from being taxed on accrual to being taxed on a realization basis.

These tax avoidance strategies are even more powerful when the owner of the equity has an unrealized capital gain. The swap contract allows the investor to hedge the risk of future price changes but continue to defer the tax on the gain. Without these derivative securities, the unrealized capital gain creates the well-known "lock-in" effect of discouraging portfolio reallocation. The derivative securities allow investors to sidestep the lock-in effect: The derivative security can hedge all (or, at the investor's discretion, some) of the risk of keeping the asset with gain but its use does not trigger a tax on the unrealized gain. Of course, for many investors, the transaction costs of this type of tax planning are prohibitively high; however, as liquidity in these financial markets improves, the costs of these strategies

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[26] Contracts settle on a net basis rather than each party making a gross payment to the other.

[27] In this example, we focus on how derivatives change the risk exposures of portfolios and the timing of tax liabilities. There are also issues as to whether the income is classified as capital or ordinary for tax purposes.

may fall considerably.

Tax reform greatly reduces the scope for tax planning through derivative securities. Both CBIT and the Flat Tax eliminate the critical elements of these strategies -- the disparity in tax rates across assets and across investors. For both the issuer and the investor, debt and equity have symmetric treatment. For financial investments, both reforms have zero marginal tax rates for all investors. Thus investors can reallocate their portfolios without triggering realization-based taxes. By eliminating the rationales behind these investment strategies, fundamental tax reform would curtail the revenue losses associated with tax arbitrage. Another benefit from this tax simplification would be reducing the uncertainty firms face regarding tax regulations.

VII. FINANCING DECISIONS AND TAX INCIDENCE

In this section, we describe two general frameworks for analyzing the incidence of the corporate income tax. In these analyses, corporate financing decisions play a pivotal role in predicting the incidence of fundamental tax reform. Thus the evidence on tax distortions of organization and financing decisions surveyed in the previous sections helps understand the debate over how tax reform will affect rates of return. As summarized in Table 1, the major effects of these reforms on corporate financing decisions are similar. We proceed to analyze the effects of tax reform on the risk-free interest rate and stock prices. The risk-free interest rate is important for comparing consumption tax and income tax reforms since, as we discussed in section III, it is the portion of the return to capital for which the tax treatment differs under the two reforms.

A. Frameworks for Analyzing Tax Reform

Much of the policy discussion in the United States over reform of capital income taxation has focused on the excess burden and incidence of the classical corporation tax. In the classic partial factor tax

approach of Harberger (1962, 1966), the corporate tax affects the required return on marginal equity-financed investments in the corporate sector, thereby distorting organizational form and investment decisions. In the central case emphasized by Harberger, the burden of the tax is borne by owners of capital generally.

An opposing view traces to Stiglitz's (1973) exposition of the corporation tax. If, in contrast to Harberger's all-equity-financed world, marginal investment projects are financed by debt, the corporate tax does not distort investment decisions; the burden of the tax is borne by inframarginal equity and any economic rents associated with new investment. This story is consistent with the ideas of dividend tax capitalization and frictionless decisions about capital structure, as we describe below.

Returning to our consideration of fundamental tax reform, integration has different efficiency and distributional consequences in the two approaches. In the Harberger approach, integration eliminates a costly distortion of organizational form and reduces the tax burden on investment and the tax burden on owners of capital generally. In the Stiglitz approach, efficiency consequences of integration are minimal, and the elimination of the incremental corporate tax creates a windfall gain for current equity holders. The Harberger and Stiglitz approaches are more similar in their depiction of the consequences of moving from an integrated tax system of the CBIT form to a consumption tax of the Flat Tax form. In either approach, the shift in tax base eliminates the tax on the riskless return to capital, increasing investment demand.

B. Tax Reform, Interest Rates, and Stock Prices

How integration affects interest rates on business debt has been the subject of considerable debate (see, *e.g.*, Feldstein, 1995; and Hall, 1996b). The conventional closed-economy explanation of the effect of interest rates of switching from the current tax system to an integrated tax system of the CBIT form is that the pretax interest rate should fall (see Hall and Rabushka, 1983, 1995; and Hall, 1996a). The

intuition for this argument is as follows. Two features of the CBIT reform would directly affect corporate interest rates. First, taxes on interest income are eliminated. Second, interest deductibility is eliminated. In the market for business credit, the supply and demand schedules for credit (as a function of the interest rate) both shift down. In the simplest story, all interest income is taxed, and all interest expenses are deducted. In a closed economy, if there is no heterogeneity in tax rates, the introduction of CBIT maintains the existing after-tax interest rate; that is, the pretax interest rate falls by the amount of the tax.[28,29]

Hall's argument for flat or declining interest rates in response to CBIT-type integration is in this spirit. Taking the Stiglitz (1973) model – incorporating dividend tax capitalization – as a benchmark, integration should have no effect on the marginal return on equity-financed investment. To maintain (closed-economy) capital market equilibrium, the net-of-tax return on debt also will not change. Hence, as in Hall's analysis, the pretax interest rate falls by the amount of the tax.

Feldstein's argument for a rising interest rate in response to integration is closer to the Harberger benchmark. In this setting, integration increases the marginal return on equity-financed corporate investment (capitalization effects are minimal). Maintaining capital market equilibrium requires the after-tax interest rate to rise.

One can add to these analyses of how integration affects interest rates the consequences of expensing of capital expenditures (as in the movement from CBIT to the Flat Tax). The effect of the shift from CBIT to the Flat Tax on interest rates depends on the interest sensitivity of the supply of funds to the domestic business sector. If the domestic business sector is a "small open economy," the introduction of the Flat Tax leaves interest rates at their CBIT levels, consistent with Hall's analysis. If the supply of

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[28] In a small, open economy, integration increases desired international lending.

[29] In reality, of course, there is heterogeneity in the effective tax rates facing suppliers and demanders of credit. For example, tax-exempt investors and lightly taxed foreign investors are major suppliers of credit to U.S. businesses.

funds is not perfectly elastic, the higher demand for funds puts upward pressure on interest rates, consistent with Feldstein's analysis of a shift to consumption taxation. Table 2 summarizes the effects of tax reform on interest rates.

Fullerton and Gordon (1983) use a computable general equilibrium model with endogenous financial behavior (calibrated to 1973 data) to simulate the effects of integrating corporate and personal income taxes. In their case in which any revenue lost from this reform is replaced by a lump sum tax on individuals, the risk-free interest rate changes by only a few basis points relative to the equilibrium without the reform in both the short run and the long run. While the data underlying these results are dated, the findings fall squarely in the middle of the current debate -- integration of the corporate and personal taxes neither substantially raises nor lowers interest rates.

Both Hall and Feldstein assume that a fixed fraction of marginal investments (zero in Hall's case and positive in Feldstein's case) is financed with equity. To the extent that information and incentive problems in capital markets suggest a role for debt and equity in the capital structure, removing the double taxation of corporate equity returns would then led to a substitution of equity for debt and gains in efficiency (see the results of simulation models used in U.S. Department of the Treasury, 1992). The Harberger and Stiglitz benchmarks also imply different reactions of stock prices to tax reform. In the Harberger setting, capitalization is absent, so stock prices do not change in response to CBIT-type integration. By contrast, incorporating dividend tax capitalization into the Stiglitz framework, integration should increase stock prices. Moving from CBIT-type integration to the Flat Tax price should reduce stock prices, all else being equal, owing to the expensing of "new capital" (see, for example, Auerbach and Kotlikoff, 1987; and Hall, 1996a).[30] At the current corporate tax rate of 35 percent, the move from current

[30] Under the income tax, the effective cost per dollar of capital goods purchased equals $\$(1 - \tau z)$, where τ is the corporate tax rate and z is the present value of depreciation deductions for the invested dollar. Under the consumption tax, capital investment is expensed, so that z rises to unity and the effective cost per dollar of capital goods purchased falls to $\$(1 - \tau)$. That is, one can think of the investment incentives accompanying expensing as reducing the price of capital. If "new capital" purchased under the expensing (consumption tax) regime is otherwise the same as "old capital" in place under the depreciation (income tax) regime, the price of old capital will fall.

law to expensing for equipment investment would lead to a decline in equity values through this channel of about 8 percent (using the calculations in Hassett and Hubbard, 1997).[31] Table 3 reviews the issues of how tax reform would affect stock prices.

As we described above, available evidence suggests that both debt and equity are likely to be used in new investment and that at least part of the dividend tax is capitalized in share values. The former observation confirms the economic intuition in the Treasury Department's evaluation of the salutary effects of integration. The latter observation suggests that some windfall gains will accompany integration. That is, integration would likely raise stock prices. In addition, to the extent that base broadening in tax reform reduces marginal tax rates, tax reform can reduce the tax rate on business income (or business cash flow), raising the present values of after-tax returns on business investments and equity values in the short run.

VIII. TAX PLANNING AFTER TAX REFORM

One of the most radical features of fundamental tax reform is its shift in the types of transactions subject to the tax system. The current income tax base includes both "real" and "financial" transactions. For example, measuring corporate income as a proxy for the return on the productive assets of the firm is an exercise in taxing real transactions, whereas measuring the returns on the debt and equity contracts financing this investment focuses on a set of financial transactions. Neither CBIT nor the Flat Tax would attempt to tax financial transactions; instead, these tax systems focus on taxing real transactions by businesses and households. CBIT would measure the capital income of businesses and the labor income of households; the Flat Tax would levy a cash flow tax on businesses and a labor income tax on households.

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[31] This simple calculation assumes that firms can costlessly adjust their fixed capital stocks to take advantage of changes in expected profitability or in the tax treatment of investment. Economic studies of investment have shown, however, that firms face costs of installing new capital goods, leading firms to smooth changes in their capital stocks over time. If these "adjustment costs" are high, old capital remains valuable relative to new capital, and stock prices need not fall. If adjustment costs are low, the shift to expensing *per se* reduces stock prices. In their review of existing studies, Hassett and Hubbard (1997) conclude that adjustment costs are relatively low, so that focusing on the changes in τ and z is sensible for estimating consequences of expensing for stock prices.

Financial transactions between businesses, between households, or between a business and a household would not be targets of the tax system.

Excluding financial transactions from the tax base is not necessarily a feature of fundamental tax reform. Alternative integration proposals, such as dividend deduction or imputation systems, would continue to base the tax system on a combination of real and financial transactions. Consumption tax proposals based on the personal expenditure model, such as the recent USA Tax proposal, would also tax a combination of real and financial transactions. Thus the advantages and disadvantages of focusing the tax system on real transactions are specific to the proposals we outlined as prototypes for reform rather than being generic features of moving to a pure income or consumption tax.

Fundamental tax reform dramatically reduces the incentives for tax planning. This reduction comes primarily from reducing the disparity in tax rates for various types of transactions. For example, under either the Flat Tax or CBIT, investors in financial assets face a marginal tax rate of zero. In addition, issuers of financial assets do not get deductions from their tax bases for returns paid on different financial assets (*e.g.*, interest is not deductible). For real assets used for business purposes, all firms have a common marginal tax rate that applies to cash flow under the Flat Tax or business income under CBIT. Furthermore, allowing losses to be carried forward with interest reduces the tax rate differential between firms with positive and firms with negative tax bases. In addition, to the extent that it lowers top marginal tax rates, tax reform reduces the incentives for clientele-based tax planning even in cases when a transaction is taxed differently across investors. By not taxing financial transactions, tax reform eliminates the tax rate differentials on ordinary and capital income and on debt and equity returns. Thus tax reform eliminates the tax preference for different forms of financing and the incentives for forming tax clienteles in portfolio choice.

While these prototypical tax reforms eliminate the distinctions between debt and equity and the tax status of many business organizational forms, they rely on separating business transactions into "real" and

"financial" categories. It is natural to ask whether reliance on this classification will create a new genre of tax planning techniques. For many transactions, such as the purchase of a printing press or a bank loan, the classification seems incorruptible. Tax planning, however, can involve devising complex legal transactions to accomplish simple goals. To fix ideas, we examine a stylized case of the tax treatment of the sale of an intangible asset under the Flat Tax and CBIT. We also briefly review the challenges created by financial intermediaries for tax reform that have been discussed in more detail elsewhere (see, e.g., Bradford, 1996).

One area in which the distinction between real and financial transactions can become blurred is the creation of intangible capital, such as the transfer of a new technology. For simplicity, consider a small research firm owned by an inventor. The firm has expertise in research but not in manufacturing, so it plans to sell its research output to other firms. The firm produces a new invention with a market value far in excess of the research cost. To ensure that the inventor receives the rewards to the invention, we assume that the new technology cannot be replicated by other firms. If this new technology is embodied in a piece of tangible equipment, then selling the invention would obviously fit the definition of a "real" transaction. Under a consumption tax version of tax reform, this transaction increases the tax base of the inventor and decreases the tax base of the buyer by equal amounts. Under an income tax reform, this transaction increases the tax base of the inventor by the sales price but because the buyer depreciates the machinery, the present value of the buyer's tax base falls by less than the purchase price of the machine.

The distinction between real and financial transactions is less clear if the invention is protected by a patent rather than being embodied in physical capital. The question becomes whether selling the patent is a real or a financial transaction. If it is a real transaction, then the tax treatment is identical to the sale of a machine; if it is a financial transaction, then the sales price will not be included in the seller's tax base or give rise to deductions for the buyer. The seller would prefer to label the transaction as "financial" to avoid including it as taxable income, but the buyer would prefer to label it as a "real" transaction to

generate deductions (either immediately under a consumption tax or over time under an income tax). Therefore, the first rule for eliminating this tax avoidance scheme is to force the buyer and seller to treat the transaction symmetrically.

The choice of whether the transaction is real or financial will greatly affect the price of the patent -- the pre-tax price of a real transaction will be higher than the price in a financial transaction (in which the pre-tax price equals the after-tax price), because a real transaction reduces the tax liability of the buyer but increases the tax liability of the seller. Under a consumption tax, assuming the buyer and seller face the same marginal tax rate, the decreased tax liability of the buyer exactly offsets the increased tax liability of the seller. Thus the parties should be indifferent to whether the transaction is classified as real or financial. For an income tax, treating the transaction as financial may lower the total tax liabilities of the buyer and seller because the buyer will get deductions only over the life of the patent rather than at the time of purchase. That is, the income tax will levy a tax on the time value of waiting for these depreciation allowances by collecting tax from the seller but reducing the buyer's tax base only over time.

Because under an income tax the tax revenue generated by this transaction depends on whether it is treated as a real or as a financial transaction, the tax code would need rules, such as amortization schedules based on the projected life of a patent, for determining the tax treatment of a transaction. However, tax planning sometimes pushes the limits of regulations. For example, rather than purchase the patent and take tax deductions according to the amortization schedule, the acquiring firm could buy all of the equity of the firm that owns the patent.[32] By selling equity rather than the patent, the purchase price is not included in the seller's tax base. After the merger, the buyer could use the patent and would be allowed tax deductions associated with the new business; however, the buyer would not get depreciation allowances for tax purposes for the entire purchase price of the business. Given the time value of money,

[32] Alternatively, the firm with the patent could create a subsidiary that owns the patent and sell the shares of the subsidiary to the acquirer. While the government could reclassify sham transactions, our objective here is to give an idea of how tax advisors will take advantage of tax reform.

the present value of the reduction in the seller's tax liability should exceed the present value of any additional taxes paid by the buyer created by opting for a financial transaction rather than a real transaction. This example highlights the ability of businesses to structure transactions as the transfer of either real or financial assets, depending on which provides the better tax result. Provided that the transaction is between two businesses with the same tax rate, this form of tax planning is effective under CBIT, but not under the Flat Tax, because the firms should be indifferent to the distinction between real and financial transactions under the Flat Tax.

If the businesses do not have the same tax rate or one party to the transaction is a household, then the distinction between real and financial transactions can create tax planning opportunities even under the Flat Tax. For a transaction between a business and a household, the tax base of the business includes cash received for real transactions (the sale of goods or services) but not the proceeds from financial transactions (proceeds from borrowing or interest received); neither type of transaction creates a deduction from the household's tax base. Thus, in the extreme, the tax incentives are for a household to buy grocery stores and consume the inventory instead of buying groceries. A more realistic example, discussed by McLure and Zodrow (1996), involves dividing a household's payment for durable consumption goods into the purchase price of the good (included in the seller's tax base) and the interest on a loan (not included in the seller's tax base).[33] The general tax avoidance issue, applicable in some degree to the current system, is whether a business can transfer consumption to its owners (or employees) without that consumption's being measured appropriately by the tax system.[34]

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[33] McLure and Zodrow argue that these types of tax avoidance schemes might be so difficult to monitor that consumption tax reform could be better implemented under what they call a "hybrid" consumption tax. Under this hybrid, households would face a tax base similar to the Flat Tax (*i.e.*, financial transactions are excluded from the tax base), but the business-level tax base would include both real and financial transactions. This proposal would maintain the neutrality between debt and equity financing by including all proceeds from raising capital in the tax base of the firm and allowing the firm deductions for all disbursements on financial contracts (returns of capital, principal, interest, and dividends).

[34] For a discussion of this type of tax avoidance under the current hybrid income tax, see Clotfelter (1983) and Bradford (1986).

Tax planning that uses (or abuses) the distinction between real and financial transactions may be especially acute for financial services because the firm's "real" product (financial services) is inexorably linked to financial transactions. Bradford (1996) discusses the difficulties of taxing financial services. He concludes that the problems of taxing the financial service industry are not particular to either type of tax system. However, some types of tax reforms (especially those similar to a value-added tax, as are the Flat Tax and CBIT) raise the political profile of these problems. In addition, for transactions between firms, provided the two businesses face the same marginal tax rate, the tax treatment of financial intermediation is of relatively minor importance. This conclusion follows from the same type of arguments we described above for why the choice of treating the sale of a patent under the Flat Tax as a real or a financial transaction does not affect the total tax liability placed on the transaction.[35] Thus the issue for financial services becomes an mainly an issue of measuring household consumption.

Fundamental tax reform, as represented by either CBIT or the Flat Tax, could potentially uproot many of the standard corporate tax planning techniques. These reforms lead to a more consistent and symmetric treatment of various financial transactions. Quantifying the social benefits from these changes, in terms of equity and efficiency gains, is a daunting task because the associated distortions arise in areas that are difficult to measure, such as risk characteristics of portfolios and transaction costs in financial markets.

We conclude this section with two cautionary notes. First, while tax reforms promise to reduce known tax planning techniques, some latitude would still exist for tax avoidance (especially in distinguishing real and financial transactions), and tax lawyers can be ingenious in creating new methods (see, *e.g.*, Feld, 1995, and Ginsburg, 1995). Second, we have focused on the benefits of tax reform when tax rates are constant over time; the transition to this regime (or future changes in tax rates) might create

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[35] Because financial services are not durable (*i.e.*, they would not need to be depreciated as an input to production), this conclusion holds for CBIT as well as the Flat Tax.

opportunities for tax avoidance that could result in costly losses of tax revenues.

IX. CONCLUSION

Discussion of "fundamental tax reform" by policymakers -- and sometimes by economists -- often treats income tax reform and consumption tax reform as polar opposites. In this paper, we evaluate consequences of tax reform for corporate financial policy -- business organizational, financing, and tax planning activities -- to distinguish between effects of income tax reform and those of consumption tax reform. We focus on one fundamental income tax reform proposal -- the Treasury Department's Comprehensive Business Income Tax (CBIT) -- and one consumption tax reform proposal -- the Flat Tax.

Our principal conclusions are four. First, relative to CBIT, the Flat Tax exempts only the risk-free return to capital; the two taxes treat similarly returns arising from risk bearing, luck, or inframarginal elements. Second, the effect of fundamental tax reform on the risk-free interest rates depends on whether dividend taxes are capitalized in share values and on the elasticity of the supply of funds to the domestic business sector with respect to the net return. As long as the supply of funds to the business sector is highly elastic, most of the effect on interest rates is a consequence of income tax reform (moving to CBIT). Third, effects of tax reform on organization and financing decisions stem from income tax reform, though the Flat Tax permits simpler rules for mergers and acquisitions than CBIT. Finally, with regard to financial innovation for tax planning, to the extent that such innovations arise to muddle the distinction between debt and equity for tax purposes, they are no longer necessary under either CBIT or the Flat Tax. One difference between the two types of reform is that the Flat Tax is neutral between real and financial transactions, while CBIT may create some tax motivations for structuring merger and acquisition transactions as financial rather than real.

Our analysis has implications for the policy debate over tax reform and for economic research. Because fundamental income tax reform and consumption tax reform have broadly similar effects on many

business decisions, policymakers should not consider the reforms in opposition to one another. For economists, obtaining quantitative estimates of the effects of either reform on business investment, organizational, and financing decisions and of efficiency gains requires more robust conclusions about the effect of dividend taxes on share prices, the elasticity of the supply of funds to the domestic business sector, and the substitutability of debt and equity in capital structures. These questions are, of course, not new, but they remain important topics for research in measuring gains from fundamental tax reform. In addition, further research on transition questions is needed to shed light on the consequences of tax reform, such as the speed with which debt and equity contracts can be renegotiated and the extent to which anticipated future changes in tax rates cause significant tax planning distortions.

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TABLE 1

Effect of the Flat Tax on Business Organization and Financing Decisions

	Effect on . . .	*---Effect traceable to ---*	
		Move to CBIT	*CBIT to Flat Tax*
Factors Influencing Organizational form			
Elimination of classical corporation income tax	Corporate versus noncorporate form	√	
Factors Influencing Capital structure			
Elimination of tax distinction between debt and equity	Corporate capital structure	√	
Elimination between retentions and distributions	Corporate payout policy	√	

TABLE 2

Effects of the Flat Tax on Corporate Interest Rates

	Effect on corporate interest rates	*--- Effect traceable to ---*	
		Move to CBIT	*CBIT-Flat TAX*
Factors Influencing the Demand for Credit			
Elimination of interest deductibility	- (Issue: heterogeneity of rates)	√	
Shift to expensing	+/0 (Issue: elasticity of supply of funds to business sector)		√
Factors Influencing the Supply of Credit			
Elimination of interest taxation	- (Issue: heterogeneity of rates)	√	
Increase in equity returns	+/0 (Issue: Dividend tax capitalization)	√	
Increased saving	-/0 Issue: Capital market integration)		√

TABLE 3

Effects of the Flat Tax Reform on Equity Prices

	Effect on stock prices	*--- Effect traceable to ---*	
		Income tax reform	*CBIT - Flat Tax*
Shift to expensing	-		√
Elimination of investor-level dividend tax	+/0	√	
Elimination of capital gains tax	+	√	
Reduction of tax rate on business income	+	√	√