TAXES AND THE CHOICE OF ORGANIZATIONAL FORM

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ABSTRACT

One of the most basic distortions created by the double
taxation of corporate income is the disincentive to incorporate.
In this paper, we investigate the extent to which the aggregate
allocation of assets and taxable income in the U.S. between
corporate vs. noncorporate forms of organization during the
period 1959-86 has responded to the size of the tax distortion
discouraging firms from incorporating. In theory, profitable
firms should shift out of the corporate sector when the tax
distortion to incorporating is larger, and conversely for firms
with tax losses. Our empirical results provide strong support
for these theoretical forecasts, and hold consistently across a
wide variety of specifications and measures of the tax variables.
Measured effects are small, however, throwing doubt on the
economic importance of tax-induced changes in organizational
form.

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One of the most basic distortions created by the double taxation of corporate income is the disincentive to incorporate. However obvious this distortion may be, most papers investigating the distortions created by the corporate tax have taken as exogenous a firm's choice whether or not to incorporate, assuming for example that some industries are inherently corporate while others are inherently noncorporate. A variety of nontax factors, described below, can certainly influence a firm's choice of organizational form, causing some to favor incorporating and others not. But are these nontax factors so dominant that taxes do not in practice influence a firm's choice of organizational form? As Gravelle and Kotlikoff (1989,1990) emphasize, tax–induced changes in firms' choices of organizational form in principle can create large excess burdens. The size of these distortions in practice depends on the extent to which firms respond to these tax incentives.

In this paper, we calculate how the tax distortion discouraging firms from incorporating has varied over time, then estimate the extent to which the allocation of assets and taxable income between corporate vs. noncorporate forms of organization has shifted in response to this time–varying tax distortion. We do this using aggregate data, by industry, in the U.S. during the period 1959–86.

In theory, taxes should induce profitable firms to shift out of the corporate sector when the tax distortion to incorporating increases, and conversely for firms with tax losses. Our empirical results provide strong support for these theoretical forecasts, and hold consistently across a wide variety of specifications and measures of the tax variables. We also

1

found that some non–tax–rate policy changes caused shifts in the predicted directions between various forms.

The measured effects are small, however, throwing doubt on the economic importance of tax–induced changes in organizational form. For instance, cutting the tax rate on noncorporate income by .10 is forecasted to cause no more than one-half of one percent of total assets to shift out of corporate form.[1] The effect is larger for the location of taxable gains and losses, with the same tax change leading to a shift of approximately 5% of gains and losses toward the more favored forms of organization. Overall, nontax determinants of organizational form appear to dominate, though further research will be needed to determine which factors are most important.

In the first section of the paper we examine theoretically how the tax law distorts a firm's choice of organizational form. Not only do tax *rates* differ by organizational form, but a variety of other tax provisions can also affect a firm's choice. We also discuss some non–tax factors that are believed to affect the choice of organizational form.

In the second section, we present the results of our empirical analysis. In particular, we examine the movement of economic activity across organizational forms in the U.S. as tax rates and other tax rules have changed during the period 1959–1986. Our two primary measures of economic resources and activity are book assets and taxable income. We emphasize that it is important to distinguish between firms with positive income and firms with losses; this distinction is important because many of the incentives are opposite for gain and loss firms.

1. Theoretical Framework

1.1 Model of a Firm's Choice of Organizational Form

We begin with a simple model that determines the equilibrium allocation of resources across different organizational forms as a function of tax rates and non–tax factors. For now we leave "other factors" largely unspecified; we return to them in section 1.3. For

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[1] As shown below, to yield the large excess burden simulated by Gravelle and Kotlikoff (1989, 1990) requires asset shifts that are nearly 30 times as large.

simplicity, we allow for only two classes of ownership: one that is taxed at both the corporate and personal level ("corporate") and another that is taxed only at the personal level ("partnership"). The double–taxation of corporate income has been the focus of studies of dividend payout behavior and corporate debt/equity decisions; we examine its role in the determination of ownership structure.

When should a firm choose to incorporate? Assume that a firm, if it does not incorporate, would earn economic income before taxes of I, and taxable income I_x. In a noncorporate firm, this income is subject to tax only at the personal level. Denote the personal tax rate on this income by τ_n.[2] The firm's net–of–tax income is therefore $I - \tau_n I_x$.

If the firm incorporates, its economic income, again before taxes, can be expressed by $I+g$, where g captures any non-tax factors that make the corporate form of ownership more attractive (g can be negative, and will vary by firm). For simplicity, let the corporation's taxable income equal $I_x + g$, implying that the same definition of taxable income is used for corporate and noncorporate firms, and that the tax law correctly measures the extra income, g, generated by incorporation.[3] This income is subject to tax first at the corporate level, at rate τ_c. Shareholders in the corporation then face personal income taxes on the income left after corporate taxes[4] — dividend income is taxed at ordinary rates while capital gains are taxed at lower rates. The specific tax rates, of course, vary by investor. However, as shown for example in Gordon and Bradford (1980), when a firm's equity is traded freely in the financial markets, without constraints, then the implicit personal tax rates affecting firm behavior can be expressed as a weighted average of the tax rates faced

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[2] For a sole proprietorship, this tax rate simply equals the marginal tax rate of the sole proprietor. For firms with several owners, τ_n will equal a weighted average of the tax rates of each of the owners.

[3] Taxable income of a firm that incorporates may change by a different amount than the change in its economic income. For example, the relative tax treatment of such items as interest income, capital gains, fringe benefits, tax losses, and tax preferences, compared with ordinary income, all differ for corporate vs. noncorporate firms. If the amounts of these categories are fixed, then these differences can be captured simply through an adjustment in the effective tax rate. If behavior changes in response to these tax differences, however, then extra terms would appear in equation (1) below, reflecting both the tax and nontax implications of these changes in behavior. These extra terms are all second-order effects, and so should be small relative to the terms we focus on.

[4] The analysis would be different in its particulars for a fully or partially integrated system such as exists for example in the United Kingdom, but the qualitative result that there are differential taxes across organizational forms still holds.

by each individual investor. Let τ_e represent the implicit personal tax rate per dollar of income to equity, taking as given the division of this income between dividends vs. capital gains.[5] The firm's income net of all taxes is therefore $I + g - (I_x + g)(\tau_c + (1 - \tau_c)\tau_e)$. The net cost from incorporating therefore equals

$$COST = -g(1 - \tau_c - (1 - \tau_c)\tau_e) + I_x(\tau_c + (1 - \tau_c)\tau_e - \tau_n). \tag{1}$$

In general, this expression (and each term) can be of either sign. Theory tells us little about the sign or size of g — all we can say is that the greater the nontax advantage of the corporate form of ownership, the more likely the firm will incorporate. In addition, $(\tau_c + (1 - \tau_c)\tau_e - \tau_n)$ and I_x can both be of either sign.[6] Each of the parameters in this expression can differ by firm, leading some firms to prefer to incorporate and others to remain noncorporate.

Given the available data, we are not in a position to examine differences in the choices of organizational form made by individual firms with different characteristics. Instead, we have data only on the time series for the aggregate division of firms between corporate vs. noncorporate forms of organization. In general, the outcome in any year can be expressed as a function of the joint distribution of each of the variables entering the expression.

We will focus specifically on the effects of changes in the second term in equation (1). This term implies that increases in the taxes on corporate equity will encourage firms with taxable profits to disincorporate and firms with tax losses to incorporate. Likewise, it implies that an increase in the personal tax rates on noncorporate firms encourages disincorporation of firms earning tax losses, while encouraging partnerships with taxable profits to incorporate. We test these predictions in our empirical work.

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[5] Given the continuing puzzle concerning why firms pay dividends, we do not attempt to model this choice explicitly.

[6] I_x can be negative for a variety of reasons. First, even if its ex ante value were positive, its ex post value could be negative. Second, for multiperiod investments, expected taxable income could be negative in some years and positive in others. Third, even if the real income to equity were positive, this expression equals the real income to the firm minus the nominal income to debt. Finally, even if I were positive, I_x could be negative due to the effects of accelerated depreciation, etc.

4

Equation (1) also implies that if firms have losses during some periods and profits during other periods, then they should change organizational form at the transition point. Similarly, if part of a firm generates negative taxable income while the rest of the firm earns profits, then the firm should try to sell off whichever part is not being taxed at the appropriate tax rate, so that each part can choose the more advantageous organizational form. Tax shelters often seem designed to take best advantage of these incentives.

In subsequent work, we will explore other testable implications of the theory. To begin with, changes in the variability of tax rates across investors, holding their average value constant (as for example occurred in 1986 with the reduction in the number of brackets) has predictable effects on the distribution of firms across organizational forms. Similarly, changes in the distribution of values of I_x should affect the observed distribution across organizational forms, holding tax rates constant. Since theory forecasts that corporate debt/equity ratios depend on basically the same poorly measured tax expression, $\tau_c + (1 - \tau_c)\tau_e - \tau_n$, one alternative test would be to examine the degree to which debt/equity ratios and the chosen pattern of organizational forms move together over time in the way forecast by the theory. Finally, the theory forecasts that noncorporate investors with $\tau_n > \tau_c + (1 - \tau_c)\tau_e$ will own firms generating tax losses, and conversely, forecasts which are testable using panel data sets of individual tax returns.

1.2 Tax Effects Other Than Tax Rates

The above discussion focused primarily on differences in tax rates affecting different organizational forms. However, there are a multitude of other tax provisions that differ by organizational form. We summarize some of these provisions,[7] even though we are in a position to estimate the effects of only a few of them in the empirical work.

Rules Governing Election. A business must satisfy some restrictions in order to avoid corporate taxes. Often, for example, firms that are legally organized as partnerships are required by the IRS to pay corporate taxes. In general, a firm will be taxed as a corporation unless it fails two of the following criteria: (1) continuity of life; (2) centralized

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[7] For a richer discussion see Scholes and Wolfson (1987,1988,1991).

management; (3) easy transferability of ownership shares; (4) limited liability.[8]

A firm that is deemed to be a corporation under the criteria above can still avoid the corporate–level tax if it qualifies for S corporation status. The main criteria for S corporation eligibility are: (1) no more than 35 shareholders; (2) no corporate shareholders; (3) not part of an affiliated group; (4) only one class of stock; (5) and not a domestic international sales corporation (DISC). The rules governing eligibility for S corporation status have changed frequently since S corporations were created in 1957; we will be examining the effects of a number of these rule changes in section 2.[9]

Pensions and Fringe Benefits. Opportunities for tax–deferred savings and fringe benefit deductibility have varied across organizational forms and over time. For example, partners and sole proprietors (unincorporated firms with one owner and unlimited liability) can use individual–oriented qualified savings plans such as Keogh accounts. Corporation pension funds have different rules on deduction limits and other characteristics. On the other hand, more fringe benefits provided to employees are deductible for corporations than for partnerships and sole proprietorships (including, until 1986, health insurance premiums). S corporations have faced corporate tax treatment of fringes during some years, and personal tax treatment during others.

Loss Offsets and At–Risk Rules. One significant advantage for partnerships and sole proprietorships is the ability to offset business losses against other sources of personal income when figuring tax liability. A C corporation can offset losses only against its own past or future profits—losses can offset profits in any of the prior three years, or be carried forward without interest to offset future profits. The number of years before loss carryforwards expire has changed over time . The importance of tax losses has also varied

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[8] For much of the 1980s it was possible to form a master limited partnership (MLP) that had most of the characteristics of a corporation, including limited liability for the partners and publicly–traded ownership shares, yet was taxed as a partnership. However the U.S. 1987 tax law instituted rules that require nearly all master limited partnerships be taxed as corporations, except for the oil, gas and real estate firms. See Gentry (1991) for tests of tax effects using MLP data.

[9] Since 1977 five states have legislated "limited liability companies," which have the limited liability of a corporation but pay no corporate-level tax, yet also avoid most of the restrictions on S corporations. The IRS took 11 years to approve partnership taxation for the first of these; we do not yet have any data on their prevalence.

6

over time. Before 1983 S corporation losses faced a third set of rules; since 1983 they are treated the same as C corporations.

In 1976 "at–risk" rules were applied to partnerships, restricting loss deductions to the amount for which an investor is personally at risk. These rules were a response to the growing use of schemes that leveraged limited partner investments in order to sell large tax losses to high tax rate investors who could immediately deduct them during the early years of a partnership while deferring taxes on gains until years later (when they were taxed at the usually lower tax rate of the at–risk investor). These schemes were particularly prevalent for real estate and leasing deals that took advantage of depreciation and interest deduction rules. At–risk rules were applied to S corporation shareholders beginning in 1978.

Passive and Foreign Income. Before 1982 firms earning passive or foreign–source income were not allowed to register as S corporations With the U.S. 1986 Tax Reform Act passive losses accruing to partners and S corporation shareholders could be offset only against other sources of passive income and not against ordinary income. Beginning in 1972 a C corporation could receive favored tax treatment on export business if it qualified as a Domestic International Sales Corporation (DISC). S corporations have never been allowed to obtain DISC treatment.

Reorganization Consequences. There are at least three ways in which economic resources can move from one form to another: through a reorganization of an existing firm, through creation of new firms, or in the case of a change from C to S corporation status simply through a declaration to the IRS without legal reorganization. The tax consequences of these avenues differ. For example, when a C corporation wants to convert to a partnership or sole proprietorship, it faces recapture provisions for the recovery of certain tax benefits, but not if it elects S corporation status. Recapture is not an issue for a newly–formed firm. Thus the mobility of resources will depend on the extent to which an industry is growing, as well as on the amount of previous tax benefits subject to recapture. Since the provisions that can lead to recapture (investment tax credits, research and development credits, and accelerated depreciation) have changed several times over the past three decades, the tax barriers to mobility across forms have changed as well.

7

Capital Gains Provisions. In general, capital gains are taxed more favorably at the personal than at the corporate level, creating an incentive not to incorporate for firms earning substantial income in the form of capital gains. However, under the General Utilities doctrine C corporations could separately incorporate an asset before it was sold and then distribute the liquidation proceeds directly to shareholders without incurring capital gains tax at the corporate level. This provision was repealed in 1986.

When the capital gains tax rate is low enough, relative to the ordinary tax rate, then firms may have an incentive to churn assets. When an asset is sold, capital gains taxes must be paid on the book profits, but the asset can then be depreciated based on the new book value. The lower the relative value of the capital gains tax rate, the more likely this transaction is to be profitable. Churning can occur for firms as a whole, through acquisitions and deacquisitions, or can occur for particular assets, e.g. buildings, airplanes, computers, etc. The opportunities for profitable churning have varied over time — since 1986, they have basically disappeared. Since "churned" assets would normally generate tax losses, profitable corporations would have had the incentive to shift ownership of "churnable" assets to high–tax–bracket noncorporate investors during periods when churning was profitable.

A related provision (Section 1374) was enacted in 1986 that provides sharply different incentives to new firms and existing C corporations that are considering the choice of S corporation status. Under Section 1374 firms that convert to S status must pay tax at the top corporate rate on any "built–in gains" realized during the 10 years following a conversion. This was designed to prevent firms from switching to S status just before liquidation to avoid corporate–level capital gains taxation.

Alternative Minimum Tax. C corporations face an alternative minimum tax (AMT) when taxable income is low due to substantial tax preference items, but for many years this AMT has not been binding on more than a few firms. Pass–through organizational forms were not subject to the corporate AMT. In 1986 a much stronger AMT was legislated. S corporations are not subject to this tax, which will be especially important for firms with substantial tax deferrals and accounting practices that lead to large book income relative to taxable income because the AMT includes 50% of that difference in the alternative tax

8

base. However, a new personal-level alternative minimum tax was also instituted in 1986 and will be especially important for tax shelter investors with substantial passive losses.

Summary. It should be clear from this review that there are numerous tax rule differences that are not easily captured in the formulation of equation (1) but that should affect the allocation of economic resources across organizational forms. In our empirical analysis we exploit the fact that a number of these provisions have changed during our sample period, providing us a limited opportunity to test for their effects.

1.3 Non-Tax Factors

The two main explanations commonly given for a non-tax advantage, g, to the corporate form of organization are first that corporations face limited liability and second that they can trade their shares publicly. How important and convincing are these explanations?

Limited Liability. In principle, corporate shareholders have limited liability, whereas partners and unincorporated sole proprietors have unlimited liability. However, these are only the "default" rules, defining the allocation of liabilities that are not *otherwise* allocated by explicit contracts — through recontracting, these rules can often be undone. For example, it is very common that the shareholders of small corporations must pledge personal assets if they wish to obtain external bank financing. Partnerships, on the other hand, can write liability limits into contracts with lenders, suppliers, customers and so forth.

The legal difference in the default provisions concerning liability for corporate vs. noncorporate firms is therefore important only to the degree to which explicit recontracting imposes transactions costs — in some cases, these costs will be large enough that the less favorable rule is left in place. Differences in these provisions are therefore more important when contracting costs are larger.

Even when contracting costs prevent differences in default liability provisions from being undone by explicit contract provisions, it is still not clear whether making limited liability the default provision for corporations favors the corporate form of organization. To the extent that equity holders are better informed than debt holders concerning the future prospects for the firm, then limited liability exacerbates problems created by asymmetric

9

information when firms try to borrow. Conversely if existing shareholders have private information about the firm's potential liabilities (or future prospects) not available to new shareholders, then limited liability can lessen the lemons problem when shares are sold to new shareholders.

Another complication is that some firms are taxed only at the personal level, yet still have limited liability. One clear example would be subchapter S corporations. Another is limited partnerships. In a limited partnership only the general partner—who may own no more than 1% of the equity capital—need bear unlimited liability, while the limited partners are liable only to the extent of their investment, the same as corporate shareholders. In fact, the general partner can even be a corporation, which bears general liability but only to the limit of the corporation's wealth, with no further recourse to the corporation's shareholders.[10]

Public Trading of Shares. Corporations are also claimed to have an advantage due to their ability to trade their shares publicly. It is widely agreed that publicly–traded firms have access to lower–cost equity capital. In addition, publicly–traded shares may provide an important instrument for the amelioration of principal–agent problems between managers and owners. This second point bears some discussion. In principle, a manager's compensation should be tied to his contribution to the value of the firm. Given that this contribution is not normally observable directly, firms in practice try to tie the manager's compensation to the firm's share value, via share–purchase pension plans, stock options, etc., as documented for example in Murphy (1986). The share value used in determining compensation should be based on an objective and external measure of value that is not subject to manipulation. A stock market should produce such an objective valuation, but presumably an outside accounting firm could also do a reasonable job. In principle, this outside valuation is needed only once for each manager, when the manager leaves the firm, as for example occurs for a sole proprietor when he sells his business. For a business of any

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[10] It may be possible largely to undo the limited liability distinction through this vehicle, but there are hidden information and moral hazard costs because the limited partners are not allowed to directly participate in management without losing partnership tax treatment. Some moral hazard costs of limited partnerships are considered in Wolfson (1985a, 1985b); MacKie–Mason (1987) examines some hidden information costs. See also Fellingham and Wolfson (1985).

size, however, in which many of the top managers will have their pay tied to share values, these departures occur regularly. Obtaining careful outside valuations in each case would be very costly, making it valuable to have such a valuation continually available through the firm's share price in the stock market. At least large firms should therefore find the option to have their shares publicly traded to be of great value. It is certainly the case that large firms are much more likely to incorporate than small firms.

In some cases, noncorporate firms have also been able to trade their ownership shares publicly. For example, during much of the 1980's shares in master limited partnerships could be traded publicly.

For our empirical work, the roles of limited liability and public share trading are too unsettled in the theory for us to formally incorporate these effects. However, most of our empirical tests are based on time–series variation in the tax costs for different organizational forms. It seems plausible that the value of limited liability and public share trading have not covaried systematically with time–series variation in tax costs. Thus, we may have a valid *ceteris paribus* experiment.

2. Empirical Analysis

In this section, we estimate the degree to which various aggregate measures of the allocation of resources and economic activity across organizational forms has responded as expected to changes in tax incentives. We rely on U.S. tax return data made public by the IRS. Individual business tax returns are not available, so we are not able to estimate microeconomic models of discrete choice among the different organizational types.

2.1 Overview and Data

We use data covering the period 1959–1986. The data were collected from numerous IRS publications and data tapes, and were carefully checked for accuracy. We have measures for about a dozen income statement and balance sheet items as reported to the IRS for C corporations, S corporations, partnerships and sole proprietorships. We have data for 7 industry aggregates that correspond to the SIC 1–digit aggregates.[11]

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[11] No balance sheet information is collected for sole proprietorships. We had to remove the entire Industry

For net income, losses and some other variables we have separate data for firms that reported positive net income and firms with losses. Unfortunately, the IRS does not report asset data separately for profit and loss firms for all organizational forms. The distinction between gain and loss firms is quite important. As discussed in section 1, firms have an incentive to allocate taxable gains and losses across organizational forms to obtain the most favorable tax treatment. Thus aggregate net income will be a poor indicator of the allocation of economic resources and activity across organizational forms. For example, suppose that when assets yield losses they are best located in partnership form, and then moved to corporate form when they yield gains. Then we would see low or negative net income in the partnership sector, but it would be incorrect to infer that the partnership sector represents a low (or negative!) fraction of economic resources or economic activity.[12] We therefore examine net income (or deficit) separately for gain and loss firms.

We present some descriptive statistics for our dataset in table 1. C corporations control a dominant fraction of business assets in the U.S,[13] but report receiving roughly only two-thirds of business income (both positive income and tax losses). In particular, C corporations controlled an asset base over 18 times larger than partnerships, yet reported on average less than three times as much in losses. Partnerships and S corporations seem to have been biased towards loss activities; $e.g.$, the mean partnership share of total losses was more than two times as large as the partnership share of gains. The standard deviations of each form of organization's share of the annual totals, calculated over 1959–1986, are also listed in table 1. These changes over time have been quite modest, with the largest variation occuring for firms reporting tax losses.

How much movement should we have seen across organizational forms during our sample period due to tax changes? We focus on estimating the effects of changes in the average

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1—Agriculture, Forestry and Fishing—from all of our data, leaving us only 7 of the 8 standard SIC industry aggregates, because some necessary farm information was not reported by the IRS during the 1980s.

[12] In fact, reported net income from all partnerships was negative from 1981 through 1986.

[13] Sole proprietorships are not required to file balance sheets, and thus we are forced to exclude them from calculations based on asset data. If we assume that sole proprietorships earn the same mean rate of return on assets as do partnerships then sole proprietorships would have 15% of total assets in the economy and the corporate share would fall to 80%. This is almost surely an overestimate for sole proprietorships.

12

value each year of the relative tax treatment of corporate vs. noncorporate income, as measured by $\tau_c + (1 - \tau_c)\tau_e - \tau_n$.[14] Any estimate of these relative tax rates will inevitably have error. We deal with this by constructing four different series under different assumptions. Our results are very robust to the choice of tax price series and instruments (described below).

Our series were constructed as follows. The measure of the corporate tax rate, τ_c, defined to equal the ratio of tax payments to taxable income, should take into account the progressivity of the corporate tax rate structure, as well as the asymmetric loss offset provisions.[15] In the results reported below, we used two crude measures: the highest statutory marginal rate in a given year, and the realized average tax rate in the IRS data (income tax liability / taxable income).[16] [17]

For the personal tax rate on ordinary income (τ_n), we need a representative tax rate for those potentially investing in noncorporate businesses. These are generally upper tax bracket individuals. One approach to approximate this tax rate is to look at the representative tax rate on municipal bonds, another asset purchased primarily by those in upper tax brackets. We use an estimate of this implicit tax rate calculated by Kochin and Parks (1988) and Poterba (1989) by comparing the yields on Treasury and municipal bonds. We also construct a τ_n series using the highest statutory marginal personal tax rate in each year.

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[14] As seen in equation (1), the net corporate tax rate $\tau_c + (1 - \tau_c)\tau_e$ plays an additional role to the extent that g is nonzero. Given our difficulty in coming up with a convincing story that nontax factors should be important, we focused on the differences in the tax treatment of business income I_x. We do test for an independent role of $\tau_c + (1 - \tau_c)\tau_e$ in some of the results.

[15] As shown in Altshuler and Auerbach (1990), the tax code's asymmetric treatment of tax losses can have a significant effect on the effective tax rate facing a firm.

[16] In an earlier version of the paper we also used an effective marginal tax rate calculated by Auerbach (1983). Although this measures improves on the statutory rate by adjusting for accelerated depreciation and investment tax credits, it does not incorporate the value of asymmetric loss treatment. Our average realized rate approximately accounts for all such provisions. Further, the Auerbach series ends in 1982. For these reasons we only report results from using four tax price series, not six. However, the results using the Auerbach series strongly confirmed our other results and thus emphasize the robustness of the analysis.

[17] This latter definition makes use of the aggregate data on corporate taxable income, creating an endogeneity problem when these same data are used in constructing the dependent variable. We eliminate any bias in the estimation through use of instrumental variables. In any case, the problem is much less important when looking at industry rather than aggregate data.

To estimate the personal tax rate on equity income we assume that the fraction d of nominal income accruing to equity holders takes the form of dividends, and that capital gains are always realized long-term. Then $\tau_e = d\tau_n + (1 - d)\gamma\alpha\tau_n$ where γ measures the fraction of long–term gains that are taxable, and α is an adjustment to make the capital gains tax rate "accrual equivalent" to capture the benefits from deferring accruing tax liabilities until the asset is sold plus the benefits from the capital gains tax exemption on assets still held at death. Following Feldstein, Dicks–Mireaux, and Poterba (1983), we assume that $\alpha = 0.25$.[18] We estimate d by taking the ratio of corporate dividend payments to after–tax corporate profits as reported in the National Income and Product Accounts. We use the statutory time–series for the capital gains exclusion, γ.

With two different measures of both τ_c and τ_n (the latter are used to construct two corresponding measures of τ_e) we have a total of four different time–series measures of the relative tax price on corporate assets. The series are shown in figure 1. The main difference between them is in the level, but we are interested more in how the tax incentives have changed over time. We always include a time trend (and time squared) in our regressions; after removing these trends from the tax price series all six are positively and substantially correlated. In any case, we estimate all of our regressions four times, once with each series, and used instruments to eliminate any bias due to measurement errors, to check the robustness of our results.[19]

Figure 1 also reveals a substantial amount of time–series variation in the tax incentives for different organizational forms. It is a truism in the U.S. empirical public finance literature that one cannot estimate regressions using the corporate tax rate because it has changed so little in the post–war era. However, the tax price incentive for allocation of

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[18] Recent research on optimal trading strategies suggests that the effects of the tax treatment of capital gains may be far more complicated that what can be captured with an estimated α that is constant over time. See Gordon and MacKie–Mason (1991) for further discussion.

[19] Our instrumental variables procedure works as follows. Let the different underlying data series we use for constructing corporate tax rates be called $(C1, C2)$, and use $(P1, P2)$ for the personal tax rate series. Then we have one tax price variable, called $TP1$, constructed using $(C1, P1)$, and another, $TP4$ using $(C2, P2)$ (and likewise for $TP2$ and $TP3$). We assume that the sources of measurement error in the series $(C2, P2)$ are independent of the errors in $(C1, P1)$. Then, $TP4$ is correlated with $TP1$ because they are both measuring the same true tax price, but $TP4$ is uncorrelated with the *measurement error* in $TP1$, making it a valid instrument. This procedure provides us with four tax variables, each of which serves as a valid instrument for one of the others.

resources across organizational forms depends on the personal tax rates on ordinary and equity income as well, causing the incentive to vary substantially over time.

2.2 Tax Price Regressions

In order to test the covariation between tax incentives and ownership structure we estimated linear regressions for a measure of the allocation of economic resources or activity on a constant, a time trend, time squared and one of the four tax price measures. Our first results are given in table 2, for the fraction of total assets held by C corporations, for the sample of all returns. We report only the tax price coefficient from 12 different specifications, suppressing the constant and time trend coefficients. Each row reports regressions using one of the four measures of the tax price; each column represents a different estimation method.

The results are very clear and consistent. Regardless of the measure of the tax price, the use of instruments or the inclusion of a lagged dependent variable, there is a negative and in every case highly statistically precise relation between the tax price and the fraction of assets held by C corporations. The mean t–ratios for the three different methods (columns) are 4.15, 4.05, and 3.54.[20] The higher is the tax disadvantage of C corporate ownership, the lower is the fraction of assets held by corporations.[21]

The effects are not large, however. Based on the mean of the IV estimates, -0.0502, reducing τ_n (or raising $\tau_c + (1 - \tau_c)\tau_e$) by .10 would lead to only a one–half of one percentage point decrease in the fraction of assets held by C corporations. To roughly account for adjustment lags we also estimated the model with a lagged dependent variable (this specification would arise from a Koyck adjustment lag process). Based on the mean of the tax price and lagged dependent variable coefficients the long run decrease in the C corporation asset share still would be only 0.55 percentage points.

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[20] Obviously the mean t-ratios reported cannot be used for strict hypothesis testing. The detailed results are available upon request.

[21] We undertook another test for the robustness of these estimates. The dependent variable as specified has a limited range, since the fraction is bounded by definition between zero and one. We re–estimated the equations using the log–odds ratio $(\ln(y)/(1 - \ln(y)))$ which ranges on the real line, with essentially the same results for all four tax prices, using both OLS and IV.

Our theory tells us that tax rate changes should have opposite effects on profitable and unprofitable firms. Unfortunately, asset data are not separately available for gain and loss firms. We do have separate data on taxable income (loss) for gain (loss) firms, however. Table 3 presents our results for gain and loss firms, aggregated across industries.[22] We report only the tax price coefficient from eight different regressions. Once again the results are clear and consistent. Regardless of the tax price explanatory variable, the fraction of tax losses reported by C corporations significantly increases as the relative corporate tax rate increases. As predicted, gains are shifted in the opposite direction as the corporate tax rate increases. All of the t–ratios are very high.

The magnitude of income and loss shifting reported in table 3 is higher than that estimated for assets in table 2. For example, at the mean for deficit firms, reducing τ_n by .10 would lead to a short–run shift of losses by about 6.2 percentage points. For gain firms the corresponding shift of income would be about -5.5 percentage points.

The results are reinforced when we estimate the gain/loss regressions on disaggregated industries, reported in table 4. We report the mean results from four different tax price regressions for each of seven industries, split by loss and gain firms.[23] The pattern of shifting is strong and consistent across nearly all industries. The results are strongest for loss firms, however. When the relative tax on corporations rises taxable losses shift significantly toward C corporations in every industry except Services. Taxable gains are shifted away from C corporations in five industries (although with high statistical significance in only one); the shift is close to zero in Transportation, and is significantly positive for Financial and Real Estate, which is one of the only unexpected results in all of our analyses.[24] Although the effects are mostly consistent and for losses quite statistically significant, the magnitudes are not very large.

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[22] For this and all further analyses in the paper we report only results from instrumental variables estimators.

[23] For example, the coefficient and t-ratio reported for deficit mining firms $(0.854, 2.25)$ are the means from four regressions, each using a different one of our four tax price measures, appropriately instrumented.

[24] We have no strong explanation for this one anomalous result. However, given the peculiarities in the rules determining taxable income for banks, and the many tax arbitrage schemes revolving around real estate, we are not too surprised that our simple theory is not entirely adequate in this sector.

We noted in section 2 that we might be able to control for some of the non-tax influences on choice of organizational form by comparing C and S corporations, since both are corporations and share many similar characteristics (including limited liability). We estimated gains and losses reported by C corporations as a share of total gains and losses for C and S corporations, and report the results in table 5. Both gains and losses move significantly between C and S corporations, in the direction predicted. Since the distinction between C and S corporations more directly focuses on tax rules than other factors these results provide strong support for our overall conclusions.

We undertook several further analyses to verify the robustness of our results. For example, we estimated our regressions using the number of returns filed (rather than the magnitude of assets, gains and losses) as our dependent variable. The tax price effects held strongly among loss firms for movements between C corporations and other firms, and also for movements between C and S corporations; the estimates were insignificantly different from zero for gain firms. Also, as in table 2, we re-estimated all of the regressions with a lagged dependent variable, without any systematic or important effect on the results. We tried including GNP as a regressor but that had no significant impact on the results.

We also tested our restriction that the coefficients on the corporate and personal tax costs are the same (except for sign). In particular, we re-estimated the regressions in table 4 entering the two tax variable components separately and performed a Wald test for the null hypothesis. For loss firms, the difference between the coefficients on the corporate and personal tax costs was insignificant on average across all of the regressions, for all industries except Mining. For gain firms, however, the difference was significant on average for all industries except Mining and Construction. This suggests that non-tax factors, g, may be more important at the margin for gain firms (see equation (1)). However, there was no systematic pattern to the differences between the tax variable coefficients, and the general conclusions about the effects of taxes on organizational form were supported.

Altogether we have found very strong evidence that both assets and annual gains and losses are shifted across organizational forms in response to changes in the relative tax costs imposed on those forms. It seems safe to conjecture that the evidence for asset shifting would be even stronger if we could distinguish between the assets of gain and loss firms,

17

since the incentives go in opposition directions for those groups. The magnitudes of the effects are measured very consistently across a wide variety of models using different definitions of the tax price, both OLS and IV estimation, aggregate and industry–disaggregated data, and when subjected to several other robustness checks.

2.3 Magnitude of the Effects

Tax effects on the allocation of activity across organizational forms appear to be very statistically significant. However, the magnitudes seem rather small: a 0.10 reduction in the corporate tax rate appears to shift only 0.5 percent of assets towards C corporations; the same large tax reduction only shifts about 5% of gains and losses across forms. Are these shifts economically significant?

Ideally, we would like to use our results to estimate the marginal excess burden from double corporate taxation. This excess burden would arise due to firms with $g > 0$ choosing not to incorporate, and conversely for firms with $g < 0$, due to tax factors. Aggregate data are insufficient, however, to estimate this excess burden. For example, even if g were always equal to zero so that there can be no excess burden from changes in organizational form, firms would still sort themselves among partnership and corporate forms of ownership so as to minimize collectively their tax obligations.[25] In general, we conjecture that in equilibrium there are two personal tax rate cutoffs, with very profitable/low g firms owned as partnerships by low–tax–rate investors, and high loss/low g firms owned as partnerships by high–tax–rate investors. The higher the typical values of g, the further these tax rate cutoffs would be from the point at which $\tau_n = \tau_c + (1 - \tau_c)\tau_e$. The tax rate cutoffs will also vary in complicated ways with changes in the wealth distribution, in the distribution of firm profitability, and in the tax rate *schedules*.

Gravelle and Kotlikoff (1990) (hereafter GK) have simulated the excess burden from corporate taxation in a much simpler setting in which τ_c and the taxable rate of return to capital are the same for all firms and τ_n is the same for all investors, but in which

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[25] This situation would be directly analogous to the Miller (1977) model of equilibrium corporate financial structure.

partnership and corporations produce goods which are imperfect substitutes in demand.[26] They report an excess burden of more than 100% of the revenues raised. These estimates, however, are based on totally implausible forecasts of the fraction of firms that are initially corporate and the sensitivity of the composition of firms across organizational forms to tax factors.

To show this, we have replicated the model simulations in GK (1990) in order to determine how much shifting of assets must occur between corporations and noncorporations to generate the high excess burdens they report. GK emphasize the case in which they assume unitary substitution elasticities in production and a demand substitution elasticity of 30 between goods produced by corporations and noncorporations within the same industry; the excess burden in this case is 109% of the tax revenue collected. However, in this case, the corporate share of total assets starts at the implausibly low figure of 36%, then jumps to 99% if the corporate tax is removed. Even when the demand substitution elasticity is only 10, and the excess burden is "only" about 40% of revenues, the corporate share of assets is predicted by their model to jump to 73% if the corporate tax is removed. The Statistics of Income data show, in contrast, that on average 93.8% of assets had been corporate during the period 1959–86, while our estimates forecast that the corporate share would increase by 2.5% if a 45% corporate tax rate were set to zero. In any case, our measured tax price series varies substantially during our time period, as seen in Figure 1, yet the maximum and minimum corporate shares of total assets differ by less than 7 percentage points over 1959–86, compared to the massive shifts the GK model would predict with that much tax price variation.

2.4 Other Tax Factors

In section 1.2 we discussed a number of other tax rules that can affect the incentive to locate assets in particular organizational forms, but that are difficult to summarize in a measure of the tax rate incentive. In this section we report the results of our efforts to

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[26] They have a closely related model in GK (1989) in which demand for corporate and noncorporate goods is identical but firm production functions differ. The excess burden results are quite similar in the two papers.

19

determine whether some non–tax–rate changes in tax rules had significant effects on the allocation of economic resources and activities across organizational forms.

We have developed a chronology of significant tax policy changes between 1958 and 1986 that we believe may have affected the choice of organizational form without directly affecting one of our tax rate variables.[27] From a long list of changes (in nearly every year) we have selected 4 years in which the changes seem to have a strong and clear impact on the direction of the tax incentives, and a 5th year in which the changes were clearly important but had effects in two directions making it difficult to predict *ex ante* the magnitude or direction of the effects. We describe these policy changes in table 6. Most of the changes concern rules for S corporations, so we provide our prediction of the changes in the fraction of activity in C corporations relative to S corporations, and in the fraction of S corporate activity to all pass–through organizations.[28] Because S corporations were first permitted in 1957, we study the effect of these rule changes only for the period 1965–1986 to avoid the problems of the "start-up" transition towards S corporations.[29]

Most of the changes were liberalizations of the restrictions on S corporations, so we expect a shift of resources and activity away from C and toward S corporations. The changes in 1983 both liberalized and further restricted S corporations, so we expect the effects to be ambiguous.[30]

We tested for the effects of these policy changes on the allocation of assets and income by extending our tax price regressions reported above. Our basic model was to use three–

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[27] We are grateful to Linda Burilovich for her excellent assistance in preparing this chronology.

[28] Most of the changes should be self–explanatory, or were explained in section 1.2 of the paper. One exception is the debt reclassification relaxation for S corporations in 1973. When corporations—C or S— borrow substantial sums from their shareholders, there is a risk that the IRS will deem those loans to be the taxable equivalent of non–voting equity shares, thereby ruling the "interest" payments to be dividends and ineligible for the interest deduction. Since S corporations were allowed to have only one class of stock, debt reclassification could make a corporation ineligible for S status. Since the interest payments were taxable to the shareholders at the same tax rates as pass–through equity earnings, the IRS essentially stopped debt reclassifications for S corps in 1973, making S status more viable for many firms.

[29] Graphical analysis of the data suggested that the startup transition ran from about 1957–1964. Our time-period dummy estimates are quite sensitive to the presence of this secular trend in the early years.

[30] The various changes we study all have the flavor of raising or lowering barriers to entry, all else constant. Thus, the predicted effects are the same for both gain and loss firms: when S corporation rules are liberalized, more activity of both sorts should move to S corporate form.

stage least squares to estimate a system of tax price regressions across the seven industry disaggregates, allowing all of the coefficients to vary by industry as in the regressions reported in table 4. We added dummy variables as intercept shifts for the policy changes; to obtain sufficient degrees of freedom we restricted the policy dummy coefficients to be the same across all 7 industry equations. Since the policy changes were permanent, the dummies were coded to be one for all years subsequent to the initial year, and zero for all years before. Thus each coefficient estimate represents the average permanent change in the dependent variable following the policy change.

The results are reported in table 7. The dependent variables are first, the fractions of C corporate assets, income and losses relative to S corporations; and second, the fractions for S corporation relative to partnerships and sole proprietorships. In each table we report the tax policy dummy variable estimates for the fraction of assets (all returns), the fraction of net income (returns with positive net income) and the fraction of losses (returns with losses).[31]

The results are clear and consistent across specifications. The policy changes in 1969, 1982 and to a lesser extent 1976 had the predicted effects on the allocation of assets, income and deficits between C and S corporations, with strong statistical significance. The debt reclassification relaxation for S corporations in 1973 seems to have had no discernible effect. The 1983 mix of changes shifted taxable gains towards S corporations, but had no effect on assets or losses. It is not clear why only the allocation of gains should have been affected; if anything, we expected the allocation of deficits to be more affected by the unlimited flow–through loss carryover granted to S corporations.

The results for S corporations versus partnerships and sole proprietorships are similar, but somewhat weaker. Both 1969 and 1982 show the predicted effect with strong statistical significance. No clear pattern is demonstrated for either 1973 or 1976; the two statistically significant estimates for 1973 have the predicted sign, but the evidence for 1976 tends weakly against the prediction. The 1983 mix of policies seemed to have zero net effects.

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[31] For brevity we report only the results using one of the four tax price measures ($TP4$); the results were essentially the same for each tax price variable.

21

The allocation of assets, gains, and losses across organizational forms responded as predicted to these important changes in the rules. However, all of the estimated effects were rather small.

2.4 The U.S. 1986 Tax Reform Act

The U.S. 1986 Tax Reform Act probably contained the most important changes in both tax rate and other tax incentives for the choice of organizational form during our entire sample period. Unfortunately, corporate income tax data for 1987 and 1988 have not been released by the IRS as of this writing, and we are thus unable to do a thorough analysis of impact of this law. None of the results reported thus far in the paper reflect any data after 1986. However, we have been able to obtain some information that suggests large shifts across organizational forms after 1986.[32]

The most obvious change is that the personal tax rate was cut by more than the corporate rate, and in fact the top personal marginal tax rate was lower than the corporate rate for the first time in the modern era. This will raise the relative tax price on the C corporate form and should have induced profitable assets to move towards pass–through forms. Another important change was the repeal of the General Utilities doctrine for corporations, which was an important vehicle for avoiding a double capital gains tax on asset sales. The tough new alternative minimum tax on C corporations should also have shifted activity. On the other hand, passive loss restrictions and the higher floors on allowable personal deductions for medical and other expenses are unfavorable to pass–through organizations.

One observation possible with data currently available is that there was a huge surge in the number of corporations filing to obtain S status. During the first six months of 1987 there were about 375,000 filings, compared to an average six–month rate of about 150,000 during 1983–1986. The filing rate has continued to be higher than before for each half year through 1988.

Another striking fact concerns the aggregate net income reported by S corporations and partnerships. From 1981 to 1986 this net income averaged −$2.2 billion. In 1987

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[32] For a more complete discussion, see Gordon and MacKie–Mason (1991).

net income jumped to positive $32 billion. This is consistent with the elimination of *any* investors with personal tax rates exceeding the effective tax rate on corporate income — with a relatively higher corporate tax, income should be shifted towards pass-through organizations and losses should move towards C corporations.

3. Conclusion

Our basic hypothesis is simple: taxes should induce profitable firms to shift out of the corporate sector when the tax distortion to incorporating is larger, and conversely for firms with tax losses. We presented a model showing how the choice of organizational form depends on the relative tax treatment of corporate and noncorporate firms. We also identified a number of tax policy features that are important for the choice of organizational form but which could not be summarized in an observable tax price measure, and discussed non-tax factors that may affect the choice of organizational form.

Our empirical evidence is quite strong and consistent: assets, taxable gains and taxable losses all shift across organizational forms in response to changes in tax rate and other tax policy incentives. We tested a wide variety of specifications using different measures of the tax incentives, different forms of the dependent variable, and different econometric methods, and throughout obtained highly statistically significant estimates that support the basic hypothesis. We also found that some of the major non-tax-rate policy changes that we identified caused significant shifts in the predicted directions between C and S corporations, and between S corporations, partnerships and proprietorships. Some of the policy changes seemed to have no effect, but none that we tested had consistently significant effects that contradicted our predictions.

All measured effects are small, however, throwing doubt on the economic importance of tax-induced changes in organizational form. It appears that transactions costs and non-tax factors affecting the choice of organizational form are dominant.

23

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Figure 1
Estimated Tax Cost of Corporate Form
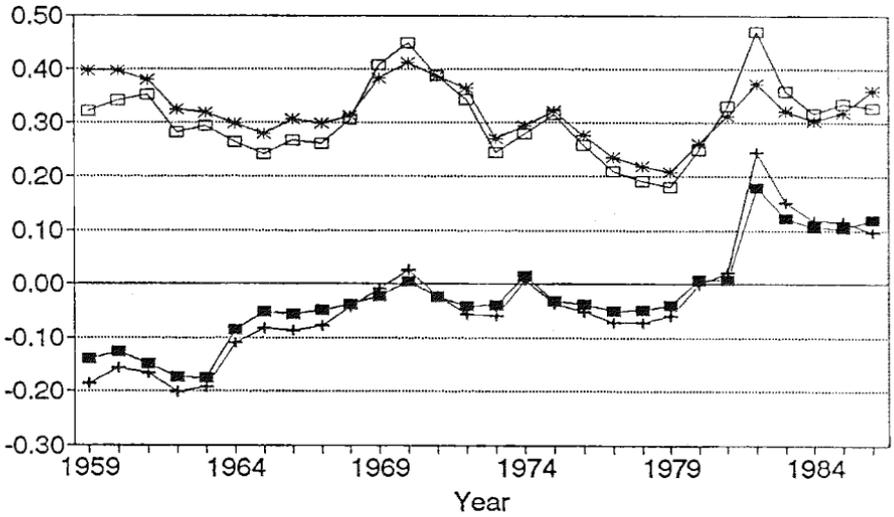
—■— TP1   —+— TP2   —*— TP3   —□— TP4
See text for tax price definitions.

Table 1: Assets, Income and Losses By Organizational Form
1959-1986

	Mean	Std. Dev.
Assets, all returns		
Total Assets	8050.6	2744.2
% C corporation	93.8%	2.1%
% S corporation	1.1%	0.2%
% partnership	5.1%	2.0%
Income, firms with net income		
Total Income	405.4	84.0
% C corporation	66.9%	3.6%
% S corporation	2.1%	0.8%
% partnership	10.1%	1.9%
% sole proprietorship	20.8%	3.4%
Loss, firms with loss		
Total Loss	86.1	65.9
% C corporation	57.5%	7.8%
% S corporation	4.5%	0.9%
% partnership	23.5%	10.0%
% sole proprietorship	14.5%	3.8%

Source: IRS Statistics of Income publications.

Note: Totals are in billions of 1982 dollars. "Percents" give the mean and standard deviation for each form's share of the total over time; e.g., the C corporation share of total assets had a 93.8% mean and 2.1% standard deviation.

Table 2

Estimated Tax Price Effects on the Fraction of Assets Held By C Corporations

All firms (aggregated) except agriculture, forestry, fishing

Tax price	OLS	IV	IV, Lagged Dependent Variable
TP1: stat/stat	-0.0312	-0.0678	-0.0553
	(2.97)	(4.17)	(4.15)
TP2: soi/stat	-0.0268	-0.0523	-0.0433
	(3.74)	(3.63)	(3.14)
TP3: stat/bond	-0.0427	-0.0498	-0.0394
	(4.84)	(4.54)	(3.40)
TP4: soi/bond	-0.0292	-0.0308	-0.0215
	(5.06)	(3.89)	(3.47)
Means	-0.0325	-0.0502	-0.0399
	(4.15)	(4.05)	(3.54)

Notes:

1. t-ratios based on White's heteroskedastic-consistent standard errors are in parentheses. "Means" are the arithmetic means of the coefficients and t-ratios in the column above.

2. Tax price variables are identified by the source used to obtain the marginal tax rate for corporations/individuals (respectively). "stat" = statutory; "soi" = average tax rate based on SOI data (Federal income tax/ net pre-tax income); "bond" = bond price implicit personal tax rate from Kochin and Parks (1988) and Poterba (1989). The other explanatory variables were a constant, a time trend and time squared.

3. Each reported coefficient is the tax price coefficient from a different regression (12 regressions are reported in this table).

4. All regressions based on 27 observations, 1959-1986 (partnership asset data is unavailable for 1960).

Table 3

Estimated Tax Price Effects on the Fraction of Gains and Losses
Reported by C Corporations
All firms (aggregated) except agriculture, forestry, fishing

Tax price	Deficit Firms	Gain Firms
TP1: stat/stat	1.00	-0.721
	(6.37)	(3.09)
TP2: soi/stat	0.646	-0.560
	(7.30)	(3.60)
TP3: stat/bond	0.957	-0.548
	(8.05)	(4.73)
TP4: soi/bond	0.589	-0.355
	(7.52)	(3.36)
Means	0.799	-0.546
	(7.31)	(3.70)

Notes:

1. t-ratios based on White's heteroskedastic-consistent standard errors are in parentheses. "Means" are the arithmetic means of the coefficients and t-ratios in the column above.

2. See note 2, table 2, for variable definitions.

3. Each reported coefficient is the tax price coefficient from a different regression (8 regressions are reported in this table).

4. All regressions based on 28 observations, 1959-1986. Each regression estimated with instrumental variables.

Table 4

Estimated Tax Price Effects on Fraction of Gains and Losses
Reported by C Corporations
By Industry

Industry	Deficit Firms	Gain Firms
Mining	0.854 (2.25)	-1.531 (3.99)
Construction	0.599 (3.46)	-0.130 (1.08)
Manufacturing	0.478 (6.26)	-0.060 (1.88)
Transportation	0.848 (2.94)	0.014 (0.328)
W&R Trade	0.371 (3.10)	-0.261 (1.67)
Financial & Real Estate	0.737 (2.21)	0.204 (2.27)
Services	0.727 (1.39)	-0.171 (1.62)
Aggregate (from Table 5)	0.799 (7.31)	-0.546 (3.70)

Notes:

1. t-ratios based on White's heteroskedastic-consistent standard errors are in parentheses.

2. See note 2, table 2, for variable definitions.

3. Each entry in the table is the mean from four regressions using the four different tax price variables (64 regressions are summmarized in this table).

4. All regressions based on 28 observations, 1959-1986. All regressions estimated with instrumental variables.

Table 5

Estimated Tax Effects on the Allocation of Assets, Income and Losses
Between C and S Corporations
All firms (aggregated) except agriculture, forestry and fishing

Tax Price	Losses	Gains
TP1: stat/stat	0.361 (5.94)	-0.0953 (2.03)
TP3: soi/stat	0.244 (5.59)	-0.0825 (2.65)
TP4: stat/bond	0.291 (4.54)	-0.1 (2.44)
TP6: soi/bond	0.165 (4.83)	-0.079 (2.13)
Means	0.265 (5.23)	-0.0893 (2.31)

Notes:
1. t-ratios based on White's heteroskedastic-consistent standard errors are in parentheses. "Means" are arithmeti
   means of the coefficients and t-ratios in the column above.

2. See note 2, table 2 for variable definitions.

3. Each reported coefficient is the tax price coefficient from a different regression (12 regressions are
   reported in this table).

4. All regressions based on 28 observations, 1959-1986. Each regression was estimated with instrumental varia

Table 6

Major Non-Rate Tax Policy Changes

		Expected Effect on:	
		C /	SC /
Year	Changes	(C + SC)	(SC + P + SP)
1966	Reduced risk of reclassification of S corp debt as stock when debt is held proportionally by owners	-	+
1969	S corps allowed to use Keogh-like qualified pension plans, putting them on parity with partnerships and sole proprietorships	-	+
1973	Debt reclassification restriction on S corps almost completely relaxed	-	+
1976	At-risk rules implemented, primarily for partnerships	+	+
1982	(a) New S corps cannot own subsidiaries; (b) Limit on S corp shareholders raised to 20; (c) limit removed on S corporation foreign income; (d) limit removed on S corporation passive income; (e) C corporation loss carryforward extended from 7 to 15 years	-	+
1983	(a) S corps restored to pension plan parity with C corps; (b) S corp shareholder limit raised to 35; (c) S corps granted unlimited flow-through loss carryovers; (d) S corps restricted on fringe deductions by shareholder-employees	?	?

Table 7

Estimated Non-Rate Tax Policy Changes on Fraction of Assets and Income

Model	1969	1973	1976	1982	1983
	C Corporations versus S Corporations				
Assets (all firms)	-0.00795	0.0024	0.00594	-0.00721	-0.0014
	(4.21)	(1.26)	(4.18)	(2.71)	(0.623)
Income (gain firms)	-0.0172	0.00532	0.00966	-0.0159	-0.0155
	(3.32)	(1.02)	(2.47)	(2.17)	(2.52)
Deficit (loss firms)	-0.0201	0.0183	-0.00509	-0.0313	0.0106
	(2.70)	(2.43)	(0.909)	(2.98)	(1.20)
	S Corporations versus Partnerships and Sole Proprietorship				
Assets (all firms)	0.0604	-0.00707	-0.0166	0.0579	0.00218
	(3.36)	(0.390)	(1.23)	(2.29)	(0.102)
Income (gain firms)	0.0392	-0.00648	-0.0157	0.0621	0.00361
	(3.88)	(0.635)	(2.06)	(4.36)	(0.301)
Deficit (loss firms)	-0.00131	-0.0383	-0.00508	0.0440	0.00343
	(0.039)	(1.31)	(0.264)	(0.895)	(0.0834)

Notes:
1. t-ratios based on White's heteroskedastic-consistent standard errors are in parentheses.

2. See note 2, table 2, for variable definitions.

3. Each row reports just the coefficients on the tax policy change dummy variables for a single regression (6 regressions are reported in this table). The tax price used as an explanatory variable was TP4.

4. All regressions based on 154 observations for seven industries over 1965-1986. Models were estimated using 3SLS, with equality restrictions on the tax policy change dummies across the equations. TP1 was used as the instrument for TP4.