

# The Equity Tax and Shelter\*

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## Abstract. (See A for a brief summary.)

Taxes have major costs beyond the collected revenue: deadweight from distorted incentives, compliance and enforcement costs, etc. A simple market mechanism, the *Equity Tax*, avoids these problems for the trickiest cases: corporate, dividend, and capital gains taxes. It exploits the ability of the share prices to reflect the expected **true** annual return (as perceived by investors, not as defined by law) and works only for publicly held corporations. Since going or staying public cannot be forced, and for some constitutional reasons too, the conversion to equity tax must be a voluntary contract. Repeated reconversions would be costly (all capital gains are realized) and thus rare. The converts and their shareholders pay no income, dividend, or capital gain taxes. Instead, they give the IRS, say, 2% of stock per year to auction promptly. Debts are the lender's assets: its status, not the debtor's, determines their equity-tax or income-tax treatment. The system looks too simple to be right. However, it does have no loopholes (thus lowering the revenue-neutral tax rate), no compliance costs, requires little regulation, and leaves all business decisions tax neutral. The total capital the equity taxed sector absorbs is the only thing the tax could possibly distort. The rates should match so as to minimize this distortion. The equity tax enlarges the pre-tax profit since this is what the taxpayers maximize, not a different after-tax net. The wealth shelter is paid for by efficiency, not by lost tax.

## 1 Introduction

Casual readers may skip this section which does not discuss the mechanism at hand, but only puts it in a context of problems faced by other approaches.

Due to its limited scope, this article ignores many important issues of taxation. Such are matters, often discussed in the context of tax reform, that concern the tax spending process more than the tax levies – for instance the benefit principle, or the incentive of democratic governments to use taxation for transfers from groups with greater ability to pay to groups with greater ability to vote. I ignore special externalities (harm or benefit to others, specific to particular economic activities) which might call for special taxes, tax breaks, or other remedies. I do not discuss the (seemingly small) incidence effects of the reform and pay limited attention to the transition problems.

My main goal is alleviation of distortive effects of general taxes on corporations and investors. It is prominent in economic literature and lately in political media, though the proposals typically introduce greater distortions than those they claim to remove.

### 1.1 Corporate Income Tax Problems

Corporate income is spent in various ways: one part (Expenses) is consumed by the needs of producing the current taxed income; another (Dividends) is divested to the shareholders; the third (Reinvestment) is invested in growth, renovation, debt or stock repurchase, etc.; the Masked part is a hidden reinvestment, treated as expenses due to the subtleties of the tax law and depreciation rules. Most tax systems tax Dividends to the shareholder and spare the Expenses. The U.S. law also taxes Dividends and Reinvestment to the corporation. The Reinvestment and Masked parts accumulate in the stock value; the current system, as well as some new proposals, may tax them eventually when they are realized as capital gains.

The income tax is distortive. The laws, however complicated, cannot adequately expose Masked income; it remains, whether large, small,

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\*Tax Notes 93(9):1203-1208, 11/26/2001.

or negative. The incentive to maximize it stands behind many otherwise detrimental business decisions and probably behind double taxation of capital gains, gifts, and estates. It may also motivate the double taxation of dividends without which the double taxation of capital gains would promote divestment through higher dividends to avoid stock price appreciation. These distortions reduce net profits and tax revenue, and convolute accounting and decision making.

## 1.2 Capital Gains and Dividends

The awkward double taxation can be avoided in many ways, e.g., by adding the taxed corporate income to the inflation-adjusted share cost basis, deducting the dividends from the latter and taxing only their excess. Various proposals are actively studied (see, e.g., [Graetz, Warren]).

This would not remove the disincentive to realize gains or any problems of corporate income tax. If the corporate tax is dropped instead, the dividends/gains disincentive becomes the main deadweight and fairness problem. The dividend and capital gain taxes may differ drastically for firms of similar size and operation (and, thus, of similar share in consumption of public goods) depending on their dividend policy and stock trade frequency. This frequency determines how often the nominal tax rate is compounded, which has a major effect on the effective tax rate.

Suppose a stock portfolio gains 10% per year and is taxed annually at 30% of gain, i.e., 3% of value. It will grow at a 7% rate, ending up ten times smaller than if taxed 30% after 95 years of 10% growth. The strong disincentive for moving capital among investors and corporations harms them with no public purpose.

Dividend and capital gains taxes are also almost voluntary. Nothing forces companies to pay dividends and many do not. They can spend all income (say, by buying their own stock) and let the investors choose when to realize it by selling shares. Much of the stock may avoid trade for generations.

## 1.3 Radical Recipes

The oldest proposed remedy to the tax-caused distortions is to reject taxation altogether along with all other forms of coercion. This extreme libertarian idea is far from even the libertarian mainstream. I will mention its much discussed faults since similar elements are present in more popular proposals. The freedom from coercion, far from being a natural right (and quite unknown in nature), is not free. Thus, private services must replace public goods such as defense from extralegal and foreign would-be “tax collectors”. The decentralization of power would raise many obvious issues, unimportant here. Another aspect, however, is fundamental.

Unprotected economic power, like unrefrigerated food, creates major externalities in and of itself. Not only it is hard to deny defenseless neighbors the free ride on one’s defense arrangements, it is also hard to prevent them from increasing the pay-off to the conqueror and, consequently, the cost of an effective deterrent. The sudden and unprotected affluence of “new Russian businessmen” breeds racket structures which also endanger their neighbors and public order. Kuwaiti oil tempts foreign aggression, endangering nonowners of oil and world peace. General taxes remedy such externalities through coercive funding of common defense, public order, and other public goods. This coercion both is justified as a defense against negligently harmful neighbors and violates no natural freedoms, since the freedom from coercion does not come free. The argument can even be stretched to justify public provision of other public goods when demanded by efficiency: the conquest pay-off and the cost of deterrent depend on the value of the best possible use of the resources, including the optimal level of publicly provided goods.

Many popular ideas about nondistortive taxation are mythical. Lump-sum taxes are an example. One cannot assign lump sums arbitrarily, e.g., above taxpayer’s worth or even close to it, lest he runs away or shoots the collector. So, the lump sums must be based on some rational method. Clever taxpayers will guess it beforehand and distort their behavior for tax advan-

tage. There are myths of inelastically supplied resources, such as land area, or head count. As a tax base, they are supposedly immune to distortions: nobody would commit suicide or shrink the Earth's surface to escape a tax. Such ideas are misleading: one cannot collect taxes from unused land, unemployed people, or postponed children; meanwhile, overtaxing can render these resources quite elastic. In fact, in a long run, adapting technology seems to confer great elasticity on all resources. Such tax systems avoid distortion in allocation of untaxed resources at the expense of an extreme distortion in the allocation between taxed and untaxed types.

## 1.4 Consumption Taxes

A less radical idea of similar nature is presently popular. It would scrap the income tax system in favor of one of the several forms of consumption taxes, such as value-added, sales, flat, etc. These taxes exempt all nonhuman resources from their base which consists entirely of the cost of labor (besides pre-existing capital). Their distinct aspect is the elimination of tax on reinvested income. (Investing labor income also defers its taxation until the proceeds are withdrawn for consumption.) Thus, companies reinvesting all income grow tax-free, subsidized by other taxpayers through free public services.

Consumption taxes, too, remove the distortions in allocation of untaxed resources (investment in nonhuman capital) at the price of extreme distortion of the choice between investment (in nonhuman capital) and consumption (i.e., investment in human capital). It is hard to guess why this distortion is seen as acceptable. Perhaps the pressure toward a smaller (and less educated) but richer population seems attractive. Or perhaps human capital is perceived as a more evenly distributed base of taxation, less deviant from taxpayers' representation in the budget process. Widespread confusion may also play a role.

### 1.4.1 Progressivity

Some forms, such as value-added or sales taxes, have an additional problem with valuation of the labor tax base. Labor is a peculiar resource. Human mind admits only very inefficient external control. Besides, organized humanity claims collective ownership of basic human rights and freedoms and outlaws their transfer. Due to this public element in the otherwise private human capital, it can be measured and taxed only indirectly through the income it generates. Even this income is hard to determine. Haig-Simons concept of income includes personal consumption, only part of which is investment in growth of human capital through better education, bigger families, etc.

The other part is the cost of sustaining it against hunger, physical and psychological fatigue, illness, aging (by raising two kids), etc. Progressive taxation of earnings attempts to exclude this part assuming some uniformity in the structure of basic human needs. Proportional taxes are most adequate for unearned income. For earned income, however, their base includes what is really an operating cost, creating a sort of a head tax element. In the long run, when head count becomes elastic, such taxes are too distortive to be used for general budget purposes. (A benefit argument may justify their specialized use, e.g., financing social safety nets with FICA.) This problem is addressed to some extent in [Hall, Rabushka] through its 0-tax bracket.

## 1.5 Property Taxes

Another, rarely advocated, type of partial taxes is based on wealth. They do just the opposite: spare labor and target nonhuman capital. Since the idea of pressing for larger but poorer population seems unattractive, a possible motive may be to further shift the burden away from the electoral majority.

Unlike labor, wealth can be taxed based on either its market value or the generated income. The difference is not significant: investors, seeking the best return, price commercial property according to its annual income potential includ-

ing value appreciation. Taxing the price or income, the whole iceberg or just its tip at a tenfold rate, is the same.

Some assets such as a family home or a private business produce fruits that are hard to separate from those of the owner's labor, rendering separate taxation of labor and wealth difficult. Combined, labor and wealth taxes form an income tax, based on all income whatever the source. Then, neither human uniformity nor market value of wealth can help to assess their economic power for a graceful taxation.

## 2 A Different Mechanism

### 2.1 Consistent Valuation is Impossible.

The long term elasticity of resources has a notable exception: the resource the taxpayer maximizes. Based on it, a tax with a less than 100% marginal rate would be non-distortionary. Let us call this maximized resource the value of a taxpayer's assets.<sup>1</sup> We can treat it as the market value for alienable assets (which taxpayers can sell if somebody else values them more) and ignore the difficulties of valuating human assets discussed in section 1.4.1.

Since tax needs to be collected periodically, it would help if taxpayers' goals were consistent, say, for one and two years periods. However, here lies a **fundamental** difficulty, full understanding of which has not yet spread in the economic literature. Let me illustrate it with an example. In playing chess the first idea that comes to mind is to understand how to compute the value of each position, and to choose each move to maximize this value. The value must be consistent across a move, i.e., agree with the best value of the next position one move can achieve. Such consistent valuation algorithms do exist, but as

[Fraenkel, Lichtenstein] proved, must take computation time that is exponential in the size of the chess board they treat as variable. Exponent is quite a dramatic bound: the entire known Universe contains far fewer atoms than ten to the number of letters in this sentence. Note that this problem is unrelated to the sufficiently recognized and studied issue of the stochastic veil.

Life is more complex than chess and taxpayers cannot use valuation methods that powerful. So, they must be inconsistent in their valuations as is amply evident from the stock market behavior. How then can the Law value assets in a way consistent with the motives of rational taxpayers (if such can be defined at all)? In fact, it cannot, which may explain why a non-distortionary tax system has not been achieved yet. What this article suggests is that for some assets such valuation is not necessary.

### 2.2 In-Kind Taxation

If tax liability is expressed in-kind, rather than in national currency units, it could avoid the need for any distortive valuation methods. The use of a non-market mechanism for translation of in-kind assets into the currency **is the** needless source of distortion.

An example of an in-kind tax is military draft, if we ignore that it singles out healthy human males from all other assets. Draft, however, involves slavery and thus creates a far greater inefficiency than tax-caused distortions. This inefficiency prevents in-kind taxation of human capital, which is not too bad since income taxes can handle salaries reasonably well. Besides labor, the earned income tax covers indirectly the earners' personal property which supports their ability to work. Only commercial property remains a candidate for in-kind taxation. However, its diversity, indivisibility, and difficulty of distinguishing from personal property create major problems.

On some backgrounds, addition of a commercial property tax would smooth, rather than create, the distortive distinction between commercial property and other assets. An example would be a consumption tax background, e.g.,

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<sup>1</sup>Consumption is often added as a separate term of utility. This should not be done here since human assets are included. Most consumption serves to maintain, restore, and grow human capital and so, adding it explicitly would amount to counting it twice. Consumption also includes economically useless waste, a negative income on human weaknesses. Whether it can be deducted against taxed positive income, I do not discuss: the equity tax ignores human assets anyway.

[Hall, Rabushka] type, which defines commercial property and exempts investment in it from taxation. To be eligible, the property must yield no significant personal benefit besides taxable income. The diversity and indivisibility of property can be handled as follows.

The owner posts the property price and is taxed at, say, 2% of it per year. He also faces a 2.5% chance per year that the IRS takes and auctions the option to buy the property for this price. (The extra .5% of this rate encourages accurate pricing, offsets auction costs, and can be used to reward the second highest Vickrey bidder who loses the bid but sets the payment.) Taxpayers would face the auction of their commercial property typically once in a lifetime and could minimize the risk by accurate pricing. This stochastic tax may be too volatile for the US. It is interesting as a thought experiment and may provide a convenient complement to consumption taxes for countries where administrative structures are too rough to allow a smooth function of income taxes. It has similarities with the Swiss land tax system. However, Swiss authorities have the discretion to choose which properties to take and how to dispose of them; this is not a matter of chance and auction and so is open to distortive variations or even abuse.

### 2.3 Equity Tax

One major part of the economy, the corporate sector, yields itself to in-kind taxation, the equity tax, quite gracefully. The conversion to the system is a voluntary contract. The converts and their shareholders pay no income, dividend, or capital gain taxes. Instead, they give the IRS, say, 2% of stock per year to auction. The effect is roughly similar to lifting the corporate income tax in exchange for somehow assuring the annual realization of capital gains on all stock. A few particularities need to be mentioned.

- The IRS accumulates the shares at a continuous rate. It receives distributions on but cannot vote its shares: the taxpayer acquires its own shares or prints new ones for the auction and transfers them to the

winners; the IRS receives only the proceeds. The auction timing and procedure may be made more or less automatic to minimize the IRS's influence on the market.

- The tax applies to equity, which fluctuates in value along with its issuer. Other long-term securities, such as bonds, issued by equity taxed firms for income-taxed holders must have value readily computable from contract terms and global economic parameters and be so depreciated or appreciated. If default becomes a danger, securities cheapen below what the IRS allows, encouraging the holding of such low-grade securities through equity taxed intermediaries, such as mutual funds.
- Equity-taxed corporations may own each other's shares, directly or through shares of income-taxed intermediaries. To avoid double taxation, the IRS waives the tax on cross-owned shares, crediting it to the shareholder. The income tax code may provide a similar credit in the case when the owned company is income-taxed; then it must use a very conservative method of allocating the income to the period of ownership.
- Since equity-taxed companies cannot accumulate untaxed gains, the gift and estate taxes, too, should spare their shares.
- Equity tax needs less accounting regulation, but some is still needed to prevent fraud, such as disproportional benefits to major shareholders, unrecorded compensation for employees and other income taxed partners, such as creditors, etc.
- Attracting multinationals would require a protection from multiple taxation by different jurisdictions.
- The 2% rate is just an example. The actual tax rates may vary with economic conditions to accommodate general constraints, e.g., to keep public debt below public assets. Equity taxed firms are not affected by the rate fluctuation, *except* for timing investments,

divestments, or conversions. So, what the income and equity taxes must avoid is significant predictable rate mismatch.

## 2.4 Conversion Tax

Stocks have equal expected return, but varying untaxed appreciation may be foreseen. To prevent tax savings via reconversions, it must be recaptured, i.e., the convert's capital gains realized. The formula may vary with specifics of income tax; assume 20% income tax rate. A company reconverting to income tax gives the IRS put options for 20% of its shares at a price which sets the new cost basis.

A company converting to equity tax issues new shares, comprising 20% of all shares and the IRS auctions a part of them. The other part is returned to the old shareholders as a credit to offset, at the auction price, the second taxation of the cost basis. This basis includes, in constant dollars, the share's purchase price and all after-tax per-share corporate income reinvested after the share's acquisition.

The auction bids contain the upper limit for the share price and the total dollar amount of the purchase. When the bids are unsealed, the shares are distributed for the price at which the demand and supply meet. The cost-basis credit is treated as an auction bid with infinite share price limit.

Assume I have 2,000 shares bought for \$75 each (prices in constant dollars) and going now at \$100. Since my purchase, the company reinvested \$20 of after-tax income per share. My cost basis is  $$(75+20) \times 2,000 = \$190,000$  with 20% tax credit of \$38,000. The company prints me 500 new shares which is 20% of the new total of 2,500. They would sell for  $\$100 \times (100\%-20\%) = \$80$  per share. I shall keep  $\$38,000/\$80 = 475$  new shares; the new owners will pay the IRS \$2,000 for the remaining 25.

**Variations.** The two given examples of in-kind taxes consist of several largely independent elements that can be used in different combinations. The investments in in-kind taxed sector can be

or be not tax-deferred, i.e. deducted from investor's income tax in exchange of taxing future withdrawals, such as dividends. The tax can be a fraction of interest in the business or a chance to take it in a lottery. It can apply to the business itself or to an option to get it at a price set by the owner. This price would be subject to a separate tax. It can be an asset tax, based on the value or, in case investments are tax-deferred, an income tax, based on its change. All these variations work automatically, sparing the taxing authority any valuation responsibilities.

## 3 Effects

### 3.1 The Advantage

Let us define the corporate net return as the stock price growth plus the dividends minus the resulting stockholders' tax liability. I assume the companies and investors act rationally maximizing this return. Its near future expectation drives the investors and determines the share prices. Under the equity tax, the net and pre-tax (net plus all general taxes) returns are proportional: maximizing one, maximizes both. I assume special externalities are offset by special liabilities or otherwise do not affect my conclusions. Then maximization of each company's pre-tax return maximizes the one of the sector.

Under most other tax systems maximizations of net and pre-tax returns are in conflict. Taxes cannot be based directly on the taxpayer's return to avoid games with the share prices. Yet, the sector's total return can be easily monitored and kept in a monotone correspondence with the total tax revenue. I assume this correspondence is set independently of the tax system and taxpayers' actions. Since the total tax would not be lowered without lowering the net return, companies are thrown into a competition to shift the tax onto each other at the expense of lower pre-tax return. This loss of efficiency makes the sector worse off than under the equity tax.

### 3.2 Transition

The equity-taxed sector has a uniform tax *burden*, i.e., the ratio of tax to either return or the stock price reflecting the expected return. The burden of some income-taxed companies, however, is significantly lower than average. Such *favored* companies (e.g., start-ups) would stay under the income tax despite the efficiency loss. The others would flock to the equity tax, escaping both the loss and the higher burden. The income tax laws would be easier to fine-tune to the diminished sector, making its tax burden flatter and further diminishing the favored layer. Above this layer, the income tax will retain primarily businesses that cannot go public.

This approach sets the equity and income tax rates to equalize the sectors' burdens. A smoother transition would be achieved if these rates are introduced gradually, starting from the pre-reform income tax rate and the equity tax rate that would be revenue-neutral once the bulk of initial conversions is completed. Even these rates would lower the burden imbalance: the efficiency bonus would raise the converts' price, lowering their burden at the same tax revenue level. While not as equitable or stimulating, these rates leave no losers: the willing converts must think themselves better off; the others pay the same tax and the IRS still collects the same revenue.

### 3.3 Volatility

A small difference between the equity and income taxes lies in the effects of volatility. Shares with the same expected return but lower volatility may be higher priced, though proliferation of diversified mutual funds diminishes this effect. Thus, some low volatility companies may have an incentive to stay out of the equity tax, possibly counterbalanced by their lower ability to mask reinvested income as deductible production expenses. Another effect is that the share price reflects the expected, not actual return. So, the equity tax leaves its subjects fully exposed to their fortune, while the income tax makes them share part of the volatility with the public.

### 3.4 Dangers of Evolution.

An issue with any new tax is its possible evolution. Can the equity tax start as a voluntary replacement for a wealth-based part of income tax and end up its mandatory addition, stripped of the income tax shelter feature? This seems unlikely. A smaller obstacle is the lack of motives. The equity tax leaves no reason for corporate, dividend, or capital gains taxes. The amount of revenue collected is just a matter of rates, not of eclectic additions. A serious rate imbalance (creating, in effect, a separate wealth tax) would be a more real danger if the equity tax was mandatory. Such a mandate, though, might require a constitutional amendment, as income tax did.

A *greater* safeguard is that corporations cannot be forced to become or stay public and meet various requirements needed for the equity tax to work. So, a mandatory version of the equity tax would be a tax simply on the **status** of publicly traded corporations. This status could not bear much tax since corporations would just change it. The damage to the economy would be great and the revenue small. In some town the tax classification of a building depended greatly on its plumbing facilities. So, people just used the woods, avoiding the larger tax!

## Conclusion

Fundamental reasons preclude objective valuation of assets or income they generate. Resulting distortions can be avoided if tax liability is expressed in-kind, leaving valuation to the market. Human and, closely related, personal assets are hard to tax in-kind. Thus, only commercial sectors of the economy are eligible for the tax options discussed here. These instruments are interesting at least as a thought experiment and may have practical applications as well.

The in-kind taxes leave out personal earnings, though their more limited diversity mitigates the difficulties of taxation. This tax also, of course, leaves alone the exempt sectors. Less fortunately, unlike its rougher stochastic variation, it cannot add grace to the taxation of private business. However, it frees the publicly traded

sector from the tax games. This body of “democratic capitalism” thus should grow more attractive and absorb an even greater part of economic life. This “attractive distortion” is purely positive, without cost to other sectors.

## Acknowledgments

This article benefited from criticism of many. I am especially grateful to Zvi Bodie, Michael Manove, Oliver Oldman, Jayendu Patel, James Poterba, Daniel Shaviro, David Weil, and Eric Zolt. This gratitude does not imply their endorsement of my opinions. This research was partially conducted by the author for the Clay Mathematics Institute and supported by NSF grant CCR9820934.

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## Appendix (not in Tax Notes).

### The Brief Summary:

#### A Taxation and Valuation.

I used some insights from computer theory to analyze the failure of persistent efforts at US tax reform despite the strong and sustained public interest. I discussed a fundamental difficulty not yet well understood in the economic literature. I pointed out somewhat unusual ways around it for the case of publicly traded corporations (**PTC**) and their investors.

Taxes have major costs beyond the revenues they collect: deadweight from distorted incentives, costs of compliance, enforcement costs, etc. (The report of the 2005 President's Advisory Panel on Federal Tax Reform mentions a trillion dollar annual waste.) Many proposals aimed to alleviate these effects but invariably introduced greater distortions than those they claimed to remove. Here is my observation:

Modern economics, based on classical game theory, assumes rational maximization of some consistent, legally definable values such as assets or income. This, however, fails to recognize the intractability of consistent valuations and other types of rational behavior in many games (much more so in real life).<sup>2</sup>

For instance, in playing chess the first idea coming to mind is to understand how to compute the positions' value, and to choose each move to maximize it. The value must be consistent across a move, i.e., agree with the best value of the next position one move can achieve. Indeed, each position does have such a consistent  $\{\pm 1, 0\}$  value: one side has a winning strategy or both have a draw. Just keep moving to positions of the same value. What a silly way to pass the time!

It is the well known exponential intractability of this strategy that saves the fun! I argue that any legal definition of the tax base value will be inconsistent with taxpayers' motives and thus distortive. (Taxing any feasibly defined gain in chess positions would change the game entirely.) I discuss unusual but, I think, neat, sound, and practical ways around.

I see the culprit not in taxation itself, but in the official valuation of the tax base it usually involves. If taxes are expressed in natural units (e.g., corporate shares), not in cash, the distortion could be avoided.

<sup>2</sup>Economists do now recognize, besides grain, land, coal, the relevance of another commodity: information. I doubt all fully realize how subtle this concept is, but even a cursory attention to it has brought progress. Yet, one more factor – intelligence – needs acknowledging. Even with full and perfect information the IRS couldn't match all taxpayers in intelligence, and thus in ability to evaluate their assets. Lacking such ability, it acts like an elephant in a china shop, vandalizing our economic life.

#### A.1 A Corporate Tax Code on a Postcard.

Let  $\boxed{t}$  be the effective tax rate,  $\boxed{i}$  – market-clearing adjustable at-will interest rate of redeemable at-will (for inflation-adjusted purchase price) T-bonds.

At regular dates (also on in-dividend dates), **PTCs give the IRS a  $t \cdot i$  fraction of all outstanding shares to auction.** (They buy back shares for this purpose or issue more.) To avoid double-taxation, PTCs shield firms they own shares of (even if via private intermediaries): the respective parts of those firms' taxes go to their PTC owners, not to the IRS.

**Going public turns the cost basis** of the prior shares **income-tax-deductible.** Instead, a “**conversion tax**” is paid – giving the IRS **options to buy a fraction  $t$**  of the outstanding shares at **strike price totaling to all taxes** to date on corporate income and distributed dividends. A similar “strike price credit” can be subsequently used for any taxes e.g., by foreign jurisdictions under US treaties.

(Reconverting to private, a company can establish its shares' cost basis  $b$  by giving the IRS **put** options for a fraction  $t$  of its shares at strike price  $b$ .)

**Bond-like** securities with no voting rights can be taxed similarly if they are tradable in fractions. But a simpler equivalent **tax is charging their proceeds the interest  $t \cdot i$ , compounded** for the time the security was held outside the PTC sector.

This code replaces dividend, capital gain, and corporate income taxes for PTCs. It distorts **no** incentives: boosting post- and pre-tax values is exactly the same. Its enforcement and compliance costs are minimal. It requires no complicated regulations, except unrelated to taxes, say, those protecting minority shareholders. The impossibility of hiding or delaying liability lowers tax rates. A steady trickle of auctioned shares may even have some stabilizing effect on the stock market.

Let  $\boxed{V_c}$  be the market capitalization of a PTC **c** ( $V$  – sector's total). It **cannot** be assessed by share **prices**, lest PTCs manipulate the stock market, seriously challenging its integrity. Our way out is to express tax liability in **shares**, not in dollars.

If the Treasury issued  $t \cdot V$  volume of bonds **or c** held its  $t \cdot V_c$  share, the  $i \cdot t \cdot V_c$  tax offsets the interest.<sup>3</sup> As  $V_c$  grows by **economic income**  $\boxed{g_c}$ , updating its bond fund costs  $c$  (and gains the Treasury)  $t \cdot g_c$ . Such bond exposure thus **unilaterally** turns the  $i \cdot t \cdot V_c$  tax “on interest on assets” into an **ideal income tax**. Any less exposed  $c$  (or Treasury) prefer the  $i \cdot t \cdot V_c$  tax.

<sup>3</sup>The cost of buying bonds at investing in  $c$  is offset by bond sales at divestment, boosting the proceeds by the same factor.

## A.2 Details of some terms used.

**The market capitalization**  $V_c$  of a company  $c$  is taken as perceived by  $c$ . The total  $V$  for all publicly traded corporations is as perceived by the Treasury. This may differ from the companies' views so  $V$  may differ from  $\sum_c V_c$ . The Treasury may see  $V$  as its liability, since the cost of public services it needs to finance presumably correlates with  $V$ .

**The economic income** of  $c$  is the change  $g_c$  in  $V_c$  (without investment or divestment, which change  $V_c$  but do not affect income). Inflation of the currency in which  $V_c$  is measured distorts  $g_c$ . Thus we must use "constant dollar" units to express "real" interest rates and values. Such units are based on prices of a "standard basket" – a weighted package of representative goods. These goods should be cheap to store, which keeps the "real" interest rates positive (or  $\approx 0$ ).

**Our bonds** assume a market-clearing interest rate  $i$ . This means the Treasury must absorb all differences between supply and demand of such bonds by buying bonds back (at inflation-adjusted purchase price) or issuing more. This ensures that corporations can have their exact desired bond exposure. But the Treasury can change  $i$  at-will (with due notice, so customers can buy or sell bonds before the new rate takes effect) and so alter the supply and demand. Thus, it can keep its desired bond exposure, too. The discussed bond exposure is certainly not optimal. Optimizing it affords any side further advantages over income tax.

**Compounded** interest rate  $i_{a,b}$  for a time period  $[a, b]$  must be used instead of simple interest  $s_{a,b}$  if  $s^2$  is not negligible. Its retained complement  $r_{a,b} = 1 - i_{a,b}$  is  $e^{-s_{a,b}} = r_b/r_a$ , where  $r_a = r_{0,a}$  for a fixed starting date 0. If only a fraction  $t$  of the interest is charged,  $r_a$  is replaced by its power  $(r_a)^t$ . The IRS or Treasury can keep daily tables  $r_a$  and  $(r_a)^t$  online.

**The PTC tax rate**  $t$  is just set by the Law<sup>4</sup> and should agree with the effective private sector rate. This means the net capital flow between the PTC's and the private sectors should be tax-revenue-neutral.

<sup>4</sup>A bit of wishful thinking: The US Constitution requires a fair compensation for private property taken for public use. This seems to imply spending taxes to fairly benefit the taxpayers, e.g., giving them a tax-weighted say in approving public spending levels. Then, they would do a much better job than the Congress in setting the right tax rates.

## B Just one issue in a broader scope.

The above tools work only for the publicly held sector. This analysis is meant to show that the failure of all persistent tax reform efforts had a cause that, while fundamental, can be circumvented in important cases.

My tools cannot add grace to taxes on closely held business or personal earnings. Yet those, too, have aspects that can benefit from reforms. Some have been widely discussed. Just some popular examples:

**Taxes on dividends and capital gains** have low rates but apply largely to income already taxed at the corporate level. This is widely criticized. A more consistent tax would apply (at full corporate rate  $t$ ) only to the untaxed part.

Shareholders then would pay no tax on dividends. A company would keep the number  $N$  of outstanding shares, the accumulated to date totals (in constant dollars) of taxable income  $I$  (including net gain/loss of share buybacks), and of paid dividends  $d = D(1-t)$ . It is taxed on the growth of  $M = \max\{I, D\}$ . It posts  $v = (M-D)/N$ . At share sales,  $v(1-t)$  or its part is subtracted from the new cost basis (or added to  $I, d$  at buybacks) and from capital gains (taxed at rate  $t$ ).

**Taxes on medical expenses** penalize deductibles in medical insurance. Needlessly low deductibles make one careless with expenses,<sup>5</sup> which is widely blamed for skyrocketing medical costs. Taxing medical expenses up to the same cut-off level independently of whether paid by the taxpayers or by their insurance can rectify this harmful tax-induced distortion.

**Many other** concerns and ideas would, of course, resurface when the tax reform drive heats up again.

E.g., taxing housing rent expense depresses population mobility. (As they say, "When a tenant marries the landlord, the national income shrinks." :-)

My topic of the publicly traded sector is just one of great many. Yet, it is a large one, assuring that at least some significant improvements are achievable.

<sup>5</sup>The general effect of insurance is diffusion of responsibility. This agrees with the general liberal ideology which has a reason: Since the society absorbs most of the rewards of one's success, it should also absorb much of the pains of one's failure. Otherwise people would have a suboptimal risk tolerance.

The conservative counterargument to this seems to be: "While three lefts do make a right, two wrongs do not." :-).

It seems, general tax policies should be neutral on such issues.