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**CONSUMPTION TAXES: SOME  
FUNDAMENTAL TRANSITION ISSUES**

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ABSTRACT

A number of tax reform plans under discussion in the United States would replace the existing hybrid income-based system with a consumption-based system. In this paper I use *uniform* (single-rate) consumption and income taxes: (a) to explain how the problem of taxing "old savings" or "old capital" manifests itself in the shift from an income to a consumption base; (b) to indicate the tradeoffs that must be confronted in dealing with this phenomenon; (c) to show how price level changes that may or may not accompany a transition affect the distribution of gains and losses; (d) to sketch out how a transition might affect interest rates and asset prices (including owner-occupied housing); (e) to explore the case in equity for protecting the tax-free recovery of old savings; and (f) to emphasize the incentive problems that arise if savers and investors anticipate a change in the tax rate in a consumption-based system.

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# Consumption Taxes: Some Fundamental Transition Issues

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# Consumption Taxes: Some Fundamental Transition Issues

David F. Bradford\*

## Introduction

Motivated by a desire to simplify compliance and improve incentives, there is currently interest once again in restructuring the U.S. tax system. Most of the proposed reforms would move toward a system based on consumption, rather than income. In this paper I use *uniform* (single-rate) consumption and income taxes to highlight certain central problems of transition and implementation that confront the reforms.

We may distinguish three consumption-oriented reform plans currently under discussion:

- a retail sales tax or a value-added tax,
- a "flat" tax,
- the Unlimited Savings Allowance (USA) Tax.

As far as I know, there has not yet been an actual legislative proposal for a federal sales tax, but Representative Bill Archer, chairman of the Ways and Means Committee of

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Princeton University, New York University, National Bureau of Economic Research, American Enterprise Institute. This is a revised version of a paper prepared for the Hoover Institution Conference on Frontiers of Tax Reform, Washington, DC, May 11, 1995, and it will appear in the conference volume, edited by Michael J. Boskin. While preparing this revision, I have enjoyed the hospitality of the Economic Policy Research Unit at the Copenhagen Business School, where I especially benefited from discussions with Peter Birch Sorensen and Niels Frederiksen. I would also like to acknowledge, in particular, helpful exchanges of ideas with Louis Kaplow. Thanks, in addition, to Alan Auerbach, Michael Boskin, Dale Jorgenson, Laurence Kotlikoff, Stephen Moore, Rudolph Penner, Harvey Rosen, Robert Scarborough, Dan Shaviro, Joel Slemrod, Eric Toder, Murray Weidenbaum, and George Zodrow for very helpful comments. Finally, I would like to express my appreciation for the support of the John M. Olin Foundation and Princeton University's Woodrow Wilson School and Center for Economic Policy Studies for my research on transition and implementation issues. None of these organizations or individuals should be implicated in conclusions expressed herein.

the House of Representatives, and Senator Richard Lugar have been notable supporters. There have been a number of value-added tax proposals, including a highly detailed plan introduced by Representative Samuel Gibbons. Representative Richard Armev is a particularly well known advocate of a flat tax, although several others have advanced similar proposals. All of these are modeled on the Flat Tax developed by Robert Hall and Alvin Rabushka (1983, 1995), which I take as representative of the breed. The USA Tax, developed by Senators Pete Domenici and Sam Nunn, was introduced by them in April, 1995.<sup>1</sup>

All three approaches would bring about a shift of the U.S. tax system to a consumption base. In terms of implementation, they have certain features in common. The first approach, a retail sales tax, is a proportional tax paid by businesses. The second and third, the Flat Tax and the USA Tax, both consist of integrated systems. Each uses a proportional tax paid by businesses, more or less similar to a value-added tax, and a personal-level tax, along the lines of the existing individual income tax. In the case of the Flat Tax, the individual tax is imposed only on a person's compensation, such as wages and salary, which is deducted from the base of the business tax. The individual-level tax in the USA system is an example of what has come to be called a "consumed income" tax. That is to say, it is based on something like the present taxable income with a deduction for net saving (and inclusion of net dissaving). In the USA system, there is no deduction

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<sup>1</sup> For useful discussions of current proposals see U.S. Congress, Joint Committee on Taxation (1995) and Arthur Andersen (1995). A detailed description of the USA Tax, prepared by Alliance USA, was published as a Special Supplement by Tax Notes, March 10, 1995. The actual legislative proposal was reproduced as a Special Supplement by the Bureau of National Affairs, April 26, 1995.

from the business tax base for payments to individuals (although there is a coordinated set of credits for payroll taxes).

All three systems are conceived of as replacements for the federal income tax, both corporate and individual. In addition, the USA Tax integrates the social security taxes through a system of credits.

It would be a considerable task just to describe these three alternatives, let alone to develop in any detail the problems of transition to each of them. Instead, I have set myself the goal of identifying and highlighting certain generic problems of transition that they confront. For this purpose, I study the problem of making a transition from a *uniform* income tax to a *uniform* consumption tax in order

- To explain how the problem of taxing “old savings” or “old capital” manifests itself in the shift from an income to a consumption base.
- To indicate the tradeoffs that must be confronted in dealing with this phenomenon.
- To show how price level changes that may or may not accompany a transition affect the distribution of gains and losses.
- To sketch out how a transition might affect interest rates and asset prices (including owner-occupied housing).
- To explore the case in equity for protecting the tax-free recovery of old savings.
- To emphasize the incentive problems that arise if savers and investors anticipate a change in the tax rate in a consumption-based system. (A

transition from a zero to some positive rate upon introduction is a particularly important instance.)

In focusing on this “pure” case, I give short shrift to many important questions.

Thus I do not discuss the treatment in transition of unrealized capital gains, business assets with basis less than market value, undistributed corporate earnings and profits, accumulated tax-deferred pension claims, unused tax credits, or tax exempt bonds. I have also decided, in the interest of simplicity, to take up the case of a closed economy, putting to one side the treatment of imports and exports, transfer pricing, and international capital flows. All of these matters are important, but the issues they raise are in addition to the ones addressed here.

Furthermore, in examining issues of transition, I do not go into the question of how to measure the degree of progressivity of the tax system or how much progressivity there should be. As a proportional tax, a retail sales tax, thought of in isolation of other tax and transfer changes that might be introduced at the same time, would be less progressive than the existing income tax. The Flat Tax, as usually specified, would be progressive. On a “static” basis, depending on the details of rate and exemptions (and assuming the continuation of the earned income credit), it would probably impose lower burdens on poor and well-to-do families, and somewhat higher burdens on the middle of the distribution. Its advocates would, however, claim that the positive economic effects of adopting such a system would lead to after-tax gains throughout the income distribution. At the tax rates included in the legislative draft, on a static basis, the USA Tax is claimed to be at least as progressive as the existing system.

These characteristics relate to the reforms as ongoing systems. My focus is on what happens to whom in getting from here to there. In the process I mention some of the major arguments in favor or against various policies. These are included to put issues in context, and not to advocate one position or another.

A final prefatory matter: There is by now a considerable body of literature addressing the effects of time-varying tax policy, including transitions of the sort considered here. These analyses are complementary to my undertaking, which attempts both less, in raising but leaving open the answers to questions about the quantitative effects of policy changes, and more, in addressing aspects of transition on which the models to date are largely silent. For excellent examples of the technically more detailed models, see Auerbach and Kotlikoff (1983, 1987), Howitt and Sinn (1989), Keuschnigg (1991) and, especially, Sarkar and Zodrow (1993).

The paper is organized as follows: In section I, I specify uniform consumption and income taxes, implemented at the level of the business firm. Section II describes the main transition issues, and section III addresses possible ways of dealing with them. In section IV, I touch on some of the arguments that go to the merits of seeking to moderate transition effects. Section V contains brief concluding remarks.

## **I. Uniform Consumption and Income Taxes**

### **Uniform Taxes Implemented at the Business Level**

As I have suggested, all three of the reform models bring about a switch to a consumption base. To set up the discussion of the issues of transition to *uniform* (single-



rate) versions of income and consumption taxes, I start with the description of how such taxes might be administered at the level of the business firm.

Many people are familiar with the idea that a consumption tax can be administered as a tax paid by businesses. Indeed, a retail-sales or value-added tax is often identified with “consumption tax.” The idea that an income tax could be administered in much the same way is less familiar. In this section I first lay out a *subtraction-method value-added tax of the consumption type* as the archetype of a consumption tax. I then explain how one can implement a uniform accretion-income value-added tax and use the two models to investigate the basic transition issues.

#### *A Value-Added Tax of the Consumption Type*

The building block of a value-added tax is the business firm subject to tax. The definition of business firm is a matter for policy, but typically it would not distinguish among businesses according to legal form. In particular, there would normally be no difference between the treatment of corporations and that of other businesses, such as partnerships or proprietorships.

Under a “subtraction method” of implementing a value-added tax, the tax base of a firm consists of the difference between the payments received for sales of all kinds of goods and services and the purchases of goods and services from other firms. This total is subjected to tax at some fixed rate. That is it. In the ordinary case, financial transactions, such as borrowing and lending, issue and repurchase of stock, payments and receipts of dividends, and the like, do not enter the calculation of the taxable base.<sup>2</sup> (There are some

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<sup>2</sup> In the helpful terminology of the Meade Committee Report (Institute for Fiscal Studies, 1978), this is an R-base (“real” transactions, as opposed to “financial”) tax.

interesting questions about how to distinguish a financial from a real transaction. For example, is the purchase of a piece of paper giving rights to use a trademark a financial or a real transaction? Financial institutions also present special problems. I neglect these issues in this paper.)

Because what is sold by one business to another results in an increase in the tax base of the selling firm and a deduction *at the same time and in exactly the same amount* by the purchasing firm, and since both are subject to tax at the same rate, transactions between businesses give rise to no net tax liability to the government.<sup>3</sup> The only circumstance under which a net tax liability is created is when there is a sale by a business to “the public,” or more precisely, to a person or organization that is not a business firm subject to tax. At that point there is no deduction taken to offset the tax paid by the seller.

The aggregate business tax base is thus the aggregate of sales by business to non-business, which is a measure of aggregate consumption.

From this description it is evident that the subtraction-method value-added tax of the consumption type gives rise to exactly the same flow of revenues as would a tax on sales by businesses to non-businesses. This describes a form of retail sales tax. The two taxes would be in effect identical if the definition of sales subject to tax were the same (for example, both including, or not, sales of clothing, or medical services).

A value-added tax is sometimes described as a tax levied at each successive level of production. As applied to a uniform tax of the kind I have just sketched out, this is

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<sup>3</sup> Throughout, the assumption is made that deductions (and credits) can be used. This would apply if losses (and net credits) were carried forward with interest, for example, or were refundable.

actually a somewhat misleading characterization, inasmuch as any sale from one level of the production process that is subject to tax gives rise to an *immediate* offsetting deduction from the base of the firm at the next level of the production process. There really is no tax until the last stage of the process, the sale to the public.

The description also makes clear that, *provided the rate of tax is the same*, a value-added tax of the subtraction type is exactly equivalent to a value-added tax of the invoice-and-credit type. This is the type of tax employed in European systems. Under the invoice-and-credit method, the selling firm pays a tax on all sales, noting the amount of tax on the sales invoice. A taxable firm making a purchase is allowed a credit against tax liability of the amount shown on the invoice. A sale from one business to another thus gives rise to *simultaneous* payment of tax by the seller and equal credit taken against the tax by the buyer. There is no net tax paid to the government until the point of sale to a buyer other than a taxable firm. The invoice-and-credit method value-added tax thus gives rise to exactly the same flow of revenues to the government as does a subtraction-method value-added tax or a retail sales tax, with the *proviso*, again, that the same goods and services are subject to tax at the same rate.

A contrast is often drawn between a sales tax or a value-added tax of the invoice-and-credit type, each of which is said to be a “transactions tax,” and an income tax or subtraction-method value-added tax. It is apparently thought that the former are accounted for on a transaction-by-transaction basis, whereas the latter are aggregated. In fact, in order to implement an income tax or a subtraction-method value-added tax it is necessary to track individual transactions, just as it is in the other methods. An additional

sale is punched into the cash register and adds to the tax base in all of these taxes. In an income tax it may be necessary to do more than simply add and subtract transactions. For example, the purchase of an asset is added to the depreciation basis of a company and then deducted over a period of years. But all of these taxes are transaction-based. As far as the value-added taxes are concerned, given equally effective enforcement, all economic effects, including the revenue flows, from the subtraction and invoice-and-credit methods of implementation should be the same.<sup>4</sup>

It is sometimes asserted that a value-added tax is the same as a tax on all the payments to factors of production, that is, wages, salaries, and profits. Whether or not this is so depends upon how one defines these terms. The term "profit," in particular, as used by accountants, although not always as used by economists, includes the normal return to the capitalist for waiting and taking risks. The return for taking risks is taxed in the same way under both income and consumption-type value-added taxes. The normal return for waiting is subjected to tax in an income-type value-added tax but not in a value-added tax of the consumption type. This is the result of the way capital purchased by firms is treated. In the value-added tax, outlays by a business for investment purposes, to add to inventory, for example, or to add to the stock of buildings or fixed equipment, are deducted immediately. If the investment is successful, it will generate future tax liabilities in excess of the tax saved by virtue of the current deduction. For an investment that is

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<sup>4</sup> It is sometimes argued that the invoice-and-credit method is more easily enforced because the buyer can be required to show the tax paid by the seller, but it would seem equally easy to trace the purchases deducted by the buyer to the tax returns the sellers in a subtraction-method system. In contrast to the case of an income tax, there should be an inclusion on a selling business's tax return for every deduction by the buyer.

barely worth undertaking, the combination of the current tax saving and the future extra tax will have a market value of zero. (More conventionally if less precisely put, the expected net present discounted value of the combination is zero.) It is in this sense that a value-added tax of the consumption type may be said to exempt the income from capital. For what economists call an “extra-marginal” investment, that is, an investment opportunity that will beat the market, the tax is positive. (More precisely, the anticipated distribution of cash flows to the government is one that would have a positive value in the capital market.)

By contrast, under an income tax, the deduction of the investment outlay is postponed. Conceptually, it is recovered as the value of the asset is depleted. This timing difference means that the cash flow to the government associated with an investment that is a barely break-even proposition will have a positive market value.

There are various ways to express what it is that is exempt from tax in the case of the consumption-type tax. One way is as the yield on a riskless investment, typically taken to be the Treasury bill rate. A value-added tax of the consumption type allows investors to get the Treasury bill rate on riskless investments free of tax. A riskless rate of return in excess of this rate is taxed. A riskless rate of return below the market rate is, in effect, compensated with reduced tax. By contrast, under a true income tax, returns in excess of zero are taxed. To put this in quantitative perspective, the real riskless rate of return available to a tax exempt investor has historically been about 2 percent per year.<sup>5</sup>

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<sup>5</sup> Under the U.S. income tax, *nominal* interest payments are included in the base of the recipient and deducted by the payer. Nominal interest rates include compensation for anticipated inflation and so generally exceed real interest rates. (For a discussion of the consequences taking into account the

The treatment of the reward to bearing risk requires some analysis. Most assets do not have a risk-free return. Even Treasury bills suffer from the risk of unpredictable inflation. The average real rate of return available to a tax exempt investor in the stock market has historically been about 9 percent per year.<sup>6</sup> This higher average return is bought at the price of substantial risk. Can one also say that under a consumption-type tax, the investor obtains the reward to risk-taking free of tax?

The answer is a qualified “yes,” but this is also the answer to the same question with regard to an income tax. This point is, I think not widely understood, probably because we are accustomed to seeing risk and waiting intertwined.<sup>7</sup> Under a uniform proportional income tax, a pure bet that does not involve time is shared with the tax collector on fair terms, through the allowance for losses.<sup>8</sup> If there is a risk premium, a uniform tax will have positive expected revenue, but it will not impose a burden on the investor. The positive expected revenue is the risk premium collected by the government for assuming part of the risk, via the tax system. The same result is obtained under a consumption-type tax, except that the cash flow to the government may not be

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presence of multiple marginal tax rates, see Bradford (1981).) One of the important effects of a shift to a consumption-type tax would be automatic indexing for inflation.

<sup>6</sup> For details on historical rates of return, see R. G. Ibbotsen Associates (1995).

<sup>7</sup> For a related discussion, see Gordon (1985).

<sup>8</sup> This statement applies to a tax based on accruing income, so that losses and gains are reflected immediately in the tax due. The way the deductibility of losses balances the taxation of gains was emphasized in a famous treatment by Domar and Musgrave (1944) of the effect of taxation on risk taking. Apart from problems relating to inflation, U.S. business income taxation is reasonably close to an accrual basis, although there are many exceptions. In the individual income tax, however, a “realization-based” approach complicates the story considerably. For a discussion of the complex effects of current realization-based income tax rules on incentives for risk-taking, see Scarborough (1993).

simultaneous with the outcome of risk-taking, so that the argument needs to take into account discounting for differences in timing. Essentially, an income tax and a consumption tax treat risk the same. Essentially, under both systems, any positive expected revenue is the market-determined reward for the risk that the government takes, and is not a burden to the taxed investor.

Under either form of tax, if it is administered at the business level, the government's risk premium is extracted ahead of the cash flow to the investor. Thus, we would expect the stock market to display more risk and a higher risk premium in a system that taxes the payoff to investment at the individual level than in one that collects the tax at the firm level. The net effect should, however, be the same.

Like an income tax, a value-added tax of the consumption type *does* subject to tax much of what is regarded as "profit" in ordinary parlance. If a business enterprise discovers oil on its property, all of the payoff is subjected to tax. So is the reward to an innovation, such as the development of a successful software product, or to "intangible property" such as the value of a trademark established through a successful advertising campaign. Through the device of the value-added tax of the consumption type, the general public becomes a proportional shareholder in all enterprises.<sup>9</sup> If the payoff exceeds the normal rate of return (risk adjusted), the general public shares in the good fortune. If the payoff falls short, the general public, having "invested" via the deduction for investment outlays, shares in the shortfall.

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<sup>9</sup> The general public's claim is on a share of the assets of the company, which it has helped finance through the tax deduction. The general public does not share in the reallocation of the claim through debt finance.

It is also often said that a value-added tax of the consumption type is equivalent to a tax on wages, or a tax on labor income. Again, whether this is so depends upon one's definition of the terms "wages" or "labor income." The payoff to the oil gusher or the successful advertising campaign or the development of Microsoft DOS might not be regarded as wages or labor income in ordinary parlance. But these are subject to a value-added tax of the consumption type.

As the discussion above of the effective taxation of risk-bearing suggests, in either case the tax may or may not represent a burden. We may think of the activity of an individual entrepreneur or firm as one of selection from "ideas" that arise, perhaps randomly or perhaps as a result of investment of funds and effort. The unprofitable ideas are rejected. Those that are accepted are believed to be, at least, break-even propositions in the sense that the associated distribution of cash flows will have a market value at least zero. Both consumption- and income-tax systems will place a burden on profitable ideas. The resulting incentive effects will depend upon the details of the process by which ideas are generated.<sup>10</sup> To the extent that oil gushers and the like represent just the upside of investments that were expected to produce the risk-adjusted market rate of return, the positive revenue in a consumption-type system is just the market-determined reward to the to the government (i.e., other taxpayers) for taking on risk. Under a true income tax there is, in any case, a burden put on postponement of consumption, as reflected in the risk-free real interest rate; in the same sense, a disinvestment project is subsidized.

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<sup>10</sup> For elaboration of this point, see Kaplow (1994).



*A Value-Added Tax of the Income Type*

It would be possible to administer a value-added tax of the *income type*, a uniform tax on business accretion income. (Although it was not called a value-added tax, just such a scheme was worked out by the U.S. Treasury, 1992.) To do so would require substituting accretion-income for cash-flow accounting by the firm.<sup>11</sup> The accounting system would be more or less the familiar financial accounting system used now to track the fortunes of companies (although it would properly incorporate systematic correction for inflation). An income statement should report the change in the firm's *net worth* during the year. When a firm acquires a unit of capital equipment, it exchanges one asset (money in the bank) for another (the piece of equipment). If the investment is a wise one and expected in the capital market, there is no change in the value of the firm. So such outlays are capitalized for purposes of income accounting, which means they are not deducted currently. On the other hand, over time, a typical piece of equipment declines in value. It is necessary to account for this value change in the income statement, even though it does not correspond to any current cash flow. So the accountants take depreciation charges against current income. Similarly, for goods acquired to add to inventory, the outlay does not reflect any change in net worth. So the accountants employ methods to keep track of when inventory is actually incorporated into goods and services sold by the firm. Their cost is "recovered" in the deduction for the cost of goods sold. Note that there is an inevitable arbitrariness in associating some past outlays with current

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<sup>11</sup> Alan Tait (1991, pp. 11-12) reports that some countries allow less than full write-off of certain capital acquisition expenses.

receivables, which is why, for example, accountants distinguish operating costs from overhead. This is one of many problems in pinning down accounting concepts for income purposes that do not arise in the cash-flow accounting system appropriate for taxing on the basis of consumption.

The essential difference between accrual-income accounting and cash-flow accounting is a matter of timing. A tax based on the *income* of a firm would be based on the difference between amounts receivable from sales and a measure of the firm's costs that included the appropriate recovery of past outlays on equipment, inventories, and the like. If the sale is to another business, the purchasing business has a deduction in its income calculation that will generally be *less* than the inclusion for the selling firm. This is because the purchaser will have to capitalize some of the outlay, to be recovered in its income calculations in the further future.

There is a sense in which a true income tax, by contrast with a subtraction-method value-added tax, *would* effect a tax at each stage of production. The point is most easily understood if we think about each "stage of production" as carried out by a separate firm. (Strictly speaking, the flow of revenue to the government from a true income tax should not depend upon the timing of transactions at all. The income calculation would be based on accruing gains and losses, which are theoretically independent of the timing of transactions.) The aggregate amount subject to tax would roughly equal the difference between the value of the goods and services sold and the *discounted value* of the future deductions by purchasing firms in the form of depreciation allowances and other forms of cost recovery. The aggregate of the taxable incomes of all the firms would equal the sum

of the sales to the public and the net increase in the stock of capitalized past outlays in the hands of the firms. We have identified the former as aggregate consumption and the latter (which could be negative) is a measure of the increase in aggregate net worth, or *saving*.<sup>12</sup> (The tax calculation of a vertically integrated company, combining several stages of production, should theoretically lead to the same result.)<sup>13</sup>

There are several reasons for going through this exercise. The first is simply to emphasize the role of timing. The distinction between an income tax and a consumption tax is essentially a matter of timing -- the time value of money. (In both systems there is recovery of the costs of production, but it comes earlier under a consumption tax.) A second reason is to demonstrate that one could use an indirect tax to implement a *uniform* income tax, just as one is accustomed to thinking one can use such a system to impose a uniform consumption tax.<sup>14</sup> A third reason is to call attention to the important differences in accounting. Income accounting is much more difficult to do well than cash-flow accounting and the difficulty is responsible for much complexity in the present income tax. (This is a major theme of Bradford, 1986.) A fourth reason is to draw attention to the logic behind the fact that under an income tax at any given time a company has a stock of past outlays that may be thought of as an accumulation of tax-prepaid claims on

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<sup>12</sup> There are substantial problems in implementing even a uniform tax on a *real* (inflation-corrected) market-value basis. For a discussion, see Bradford (1986). For a discussion of similar issues that arise in national income accounting, see Bradford (1991).

<sup>13</sup> Thanks to Joel Slemrod for clarifying this point.

<sup>14</sup> The distinction between "direct" taxes (such as income, including corporate profits, wealth-, and property taxes) and "indirect" taxes, such as sales and value-added taxes, is a matter of custom, and not based on any fundamental economic difference.

consumption in the future. These claims, represented by basis in the company's assets, belong to the company's owners. This assumes great significance in any transition from an income- to a consumption-based tax system.

*Owner-Occupied Housing under Consumption and Income Taxes*

The income tax in the United States exempts the yield from investment in household capital, by which I mean durables such automobiles, boats, washing machines, electronic equipment and the like. Quantitatively the most important example is owner-occupied housing (including second homes). To capture such capital in an income tax would involve treating the household as in the business of selling to itself the services of these investments. Because the income tax does not attempt to do this, it puts such forms of investment at an advantage, relative to ordinary business capital.

One of the features of consumption-based taxes that makes them appeal to economists is that they could, in a simple way, tax household capital on an even plane with business capital. (See, for example, Jorgenson, 1995.) This result would obtain not by setting up the household as a business under a value-added tax of the subtraction type. Rather, these implicit businesses are left out of the set of firms subject to tax. The advantage for these implicit firms is that they are not subject to tax on their implicit sales (for example, the sale of housing services by owner-occupiers to themselves). The disadvantage is that they are not eligible to deduct (in the case of the invoice-and-credit approach, obtain credit for the taxes paid on) their purchases. With a taxable business, the general public shares in the investment and payoffs in proportion to the tax rate. In making investment decisions, the taxable firm considers its share. For a tax-exempt

household “business” the general public does not share in the investment or the return. The investment decision is based on the full cost and the full return. The break-even requirement will be the same for a taxable and tax-exempt business.

If the sale of housing is treated like all other sales under a subtraction-method value-added tax, it will remove the tax advantage that owner-occupied housing enjoys under the income tax.<sup>15</sup> A question of some interest is what this change will imply for the value of existing houses. I take up this question below.

### Allocating Consumption or Income Bases to Individuals

#### *Deducting Wages from a Subtraction-Method Value-Added Tax*

Little would be changed if the subtraction-method value-added tax were amended to permit companies to deduct the amounts paid out to employees, provided the payments to workers were subject to tax and at the same rate. The same cash flows to the government would result, and we would predict the economic effects to be identical. More generally, the payments to workers might be subject to tax at a different rate, or according to a graduated rate schedule. If the schedule consists of an exempt amount plus a single rate for amounts above the exempt amount (the same single rate as applies to firms), this produces the Flat Tax.

#### *Deducting Wages and Interest from a Value-Added Tax of the Income Type*

Similarly, little would be changed if companies were allowed to deduct interest paid to creditors, as well as amounts paid out to employees, under the value-added tax of

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<sup>15</sup> It is an open question whether an actual consumption-type system would treat housing consistently with other forms of consumption.

the income type, again provided the rate of tax applicable to these income recipients were the same as the business level tax. Apart from graduated rates, this is a very rough approximation to the way the combination of corporate and individual income taxes works. Actually, “caricature” might be the better word. As long as the same rate applies to the deduction by the firm and inclusion in taxable income of the bondholder, the combination has no real significance. It is not identical to measuring the Haig-Simons income of bondholders, nor does it bring with it all of the complexity that such measurement implies, such as distinguishing between interest payments and accruing interest income. It is a simple reassignment, from the company to the bondholders, of the responsibility for given tax payments.

We would expect bondholders to require compensation for taking over the obligation to pay the taxes, so the stated interest rate will be different when interest is deductible than when it is not. When there is no tax at the bondholder level, the bondholder receives an “after-tax” interest rate; with the other treatment of interest, the stated rate will be the “before-tax” rate.

I introduce the possibility of deducting interest and taxing it at the bondholder level because the commitment to make interest payments according to a fixed contract creates an important transition problem that is taken up below.

## **II. Transition Issues**

One of the critical characteristics of any tax system is its pattern of incidence, particularly its degree of progressivity. The general subject of distributional analysis is beyond the scope of this paper. There is, however, typically a cross-cutting set of

incidence issues, with which we are concerned here, raised by any major change in policy. One way to come to grips with issues of transition is to suppose that we have been operating for a long time with a value-added tax of the income type and contemplate switching to a value-added tax of the consumption type. The analysis can, in turn, be broken down into the effect of introducing the value-added tax of the consumption type and the effect of eliminating the income tax. To start with, I focus on the cases with no allocation of cash flow or income payments to individuals.

#### Introducing A Value-Added Tax Of The Consumption Type

I find a concrete example helpful in sorting out transition issues. My preferred example is of a retail store, whose owners have purchased, on the day before the value-added tax is introduced, a stock of canned goods for \$10,000. They sell the goods the day after the value-added tax is introduced. To focus on the key issues, assume they have no other transactions. In calculating the business's value-added tax liability, the proceeds from the sale of the canned goods are on the inclusion side of the ledger. But because there was no outlay for the goods sold during the period (the inventory purchase was in the previous period), there is no offsetting deduction. The effect is a one-time tax, at the value-added tax rate, on the stock of inventory at the time of transition.

This little story captures the essence of the way imposition of a consumption-type tax, with no special transition rules, would impose a one-time tax on the stock of wealth in the economy, so-called "old capital" or "old savings." In the example, the extra tax on the stock of inventory was imposed immediately, because the goods were sold to the public on day one of the new system. In actuality, the tax payments that give effect to the one-

time tax would take place over time, for example over the lifetime of a piece of fixed equipment. But the discounted present value of the extra tax imposed is the same as if the assets were sold immediately to the public (provided the tax rate is constant).

Most people who have an ownership interest in a business have it indirectly, via stock in corporations. Even the ownership of stock may be indirect. For example, it may be via a claim on a defined-contribution pension plan, the assets of which are held in the form of stock. The imposition of a value-added tax of the consumption type would be predicted to generate a fall in the market value of stock commensurate with the extra one-time tax liability. I use the term “commensurate” because one critical aspect of the path of adjustment will have a large effect on the transition incidence. That is the impact of the policy change on the general level of prices.

### *Price Level Changes*

It is conventional wisdom that upon its introduction companies will “pass forward” a value-added tax in the form of higher prices. It is important to recognize that whether or not this occurs (a) is not a matter that is settled by well-developed theory and (b) does not affect the one-time wealth tax in the aggregate, although it may affect its distribution. In a competitive economy a value-added tax of the consumption type must be extracted from the difference between the value of goods sold by companies and what they pay to non-company suppliers, which we may here take to be workers. That much is clear. Whether, however, a newly-introduced tax leads to an increase in the prices of things sold or a decrease in the wages of workers is not well determined. It will depend upon the institutions of wage- and price-setting and on monetary policy. It is commonly believed,



however, that introducing a value-added tax of the consumption type will bring with it a monetary policy adjustment that results in a one-time increase in the price level (not a change in the *rate* of inflation) and no change in payments to workers in *nominal* terms (so that, before taking into account any offsetting reduction in income taxation, nominal wages are unchanged but *real* wages of workers decline by the amount of the tax). By contrast, it is generally thought that introducing a tax levied on the earnings of workers will lead to a decrease in their take-home pay and no change in the prices charged by companies. The real result for workers is the same.

If there *is* a change in the price level and if this change in price level has not been anticipated and therefore built into transactions expressed in dollar terms (for example, through an adjustment in interest rates), then introducing the value-added tax of the consumption type will bring about a redistribution of wealth from lenders to borrowers, through a decline of the real value of the dollar.

#### *Leverage and the Wealth Tax Effect*

That the matter is of some importance, and that policy makers might want to encourage such an “accommodating” monetary policy, is suggested by considering the situation of the business owners who have financed the acquisition of business assets by issuing debt with fixed nominal terms. In my example, suppose the store’s owners have borrowed the \$10,000 to buy the inventory of canned goods, expecting to sell the goods the next day for a little more than \$10,000 and repay the loan. (Interest on the loan is not important in this very short-term transaction.) If, in the meantime, the value-added tax has been introduced, *and* there is no change in the price level, the owners of the inventory will

suffer a loss equal to the tax rate times \$10,000 even though they have no net wealth at all. The lender who holds the \$10,000 note, who does have some wealth, will experience no loss.

By contrast, if the price level increases by the amount of the tax, the owners of the inventory will suffer no loss; they will have \$10,000 left after tax with which to repay the loan. Instead, the transition loss will be borne by the lender, via the erosion of the purchasing power of the \$10,000. (There would be, in addition, the usual distributional effects of inflation, on fixed-income recipients, for example, or on holders of currency. See Browning, 1978.)

Translating this story to the stock market, we would expect the transition loss to be spread equally across the debt and equity claims to companies if the transition brings with it an unexpected one-time increase in the price level. Equities would keep their market value but lose in real value a proportion equal to the tax rate, and the same would be true of nominally denominated assets and liabilities. At the other polar case of no adjustment in the price level (actually, "polar case" is a somewhat misleading term here; anything could happen), nominally denominated assets and liabilities would keep their real value and the entire loss, of the tax rate times the sum of debt and equity value, would be borne by equity holders. For a company for which equity constitutes a fraction  $e$  of the value of the company's assets, the implied percentage decline in value of the shares would be  $t/e$ , where  $t$  is the value-added tax rate. For a sufficiently leveraged firm ( $e < t$ ), the transition incidence would imply bankruptcy! (Howitt and Sinn, 1989). (Note that if

everyone holds the market portfolio of all financial instruments the effect of price level change is neutralized.)

*A Tax on the Elderly?*

An important question is who are the owners of assets who would bear the cost of transition to a consumption-type tax (barring special provisions to mitigate the effect)? As has just been emphasized, the impact of the transition will depend both on the extent to which it is accompanied by price level changes *and* on the composition of people's portfolios (especially the division between nominal and real assets and liabilities). It is generally assumed that the impact will be roughly proportional to wealth (that is, either wealth-owners have similar portfolios or there is an unanticipated price level adjustment). Apart from knowing that the distribution of wealth ownership is highly skewed, with a large fraction of wealth owned by a relatively small fraction of the population, we also know that, owing to life-cycle factors in the process of accumulation, wealth is also correlated with age. This means that the policy regarding transition to a consumption-type tax should be thought about in the framework of intergenerational distribution. Many commentators (in particular, Kotlikoff, 1992, and Auerbach, Gokhale and Kotlikoff, 1993) have noted the tendency of fiscal policy in the United States over the past thirty years to shift the net burden of financing the government away from older and toward younger and future generations. To the extent this tendency describes fundamental political factors, it would suggest we should expect to see any transition to a consumption-type tax accompanied by rules that would protect the interests of older generations. To the extent there is a movement toward readjusting the fiscal balance (arguably, the proper economic

interpretation of “deficit-reduction”), we might expect to see a transition to a consumption-type tax taken as an opportunity to lighten the projected burdens of young and future generations.

*The Effect on the Analysis of Taxing Wages at the Level of the Worker*

If we modify the example to permit companies a deduction for wages, there will be a change in the locus of tax payments -- the bulk of tax collections will be from workers, rather than businesses -- but, from a formal point of view, none of the issues discussed above will be affected. I use the word “formal” advisedly, since it is commonly believed that workers are likely to resist changes in their before-tax wages. If before-tax wages are fixed and wages are not allowed as a deduction, then the price level must increase to accommodate the tax.

If wages are allowed as a deduction (and taxed at the worker level), holding constant the level of wages before tax means a reduction in wages after tax. In that case, there would be no adjustment in the price level necessary to establish equilibrium in the relationship between prices and wages.

Eliminating a Value-Added Tax Of the Income Type

Our idealized tax reform involves introduction of a consumption-type tax and elimination of an income-type tax, represented in the present analysis by a value-added tax of the income type. Under a value-added tax of the income type, the yield on business investment is taxed, at the value-added tax rate, at the business level. In the pure case, there is no tax at the individual level. Interest (along with other forms of reward to owners of capital) is “pre-taxed” at the company level. (This is the scheme outlined in the

U.S. Treasury's Comprehensive Business Income Tax plan, 1992). In an equilibrium with a value-added tax of the income type, the interest rate on financial assets would equal the *after-tax* rate of return on investment. This is in contrast to the result when interest is deducted by business borrowers and taxed in the hands of the individual. In that case, the interest rate tends to equality with the before-tax rate of return on business investment.

Under a value-added tax of the consumption type, changes in the tax rate (for example, from zero to a positive rate at the time of introduction of the tax) produce changes in the value of a company, along the lines just discussed. By contrast, under an income-type tax, with proper accounting rules, changes in the rate of tax do not produce changes in the market value of assets. (The qualification, "with proper accounting rules," is important. Technically, what is required is that the basis of assets be equal to their market value. With accelerated depreciation, for example, basis will be less than market value. In that case, a decline in the income tax rate produces an increase in a company's value, because of the reduction in the tax liability that will come due when the difference between the asset's basis and its market value is realized in future transactions.)

Consequently, the transition issues raised by a switch from a pure value-added tax of the income type to a pure value-added tax of the consumption type are the same as those involved in introducing value-added tax from a situation with no tax.

#### The Effect of a Regime Shift on Interest Rates and Asset Prices

Thus far I have focused on transition effects apart from impacts on relative prices. Among the most important of the latter is the interest rate, and its correlative, asset prices. Changes of policy of the magnitude under consideration here *might* be expected to

produce significant changes in these. Unfortunately, asset price effects are hard to predict, yet they may constitute an important part of the transition story. Since my objective is to lay out issues, not necessarily to resolve them, I sketch out here the implications of what might be taken to be the polar possibilities. At one extreme is the “infinite elasticity of demand for capital” assumption that the opportunities to invest at the going rate of return are unlimited within the relevant range. Such an assumption would be reasonable for a small economy open to the world capital market. This possibility is modeled as a fixed before-tax rate of return on investment. At the other extreme is the “infinite elasticity of supply of capital” assumption that the amount of wealth people are willing to hold at the going rate of return to savers is unlimited within the relevant range. This assumption can be justified on the basis of very long life-cycle or dynastic purposes of saving (Summers, 1981). It is modeled as a fixed after-tax rate of return to savers.

An additional behavioral or technological feature of importance is the cost of adjustment. Here the question can be thought of as whether owners of existing capital have a temporary advantage over potential competitors for investment opportunities when interest rates fall. In this case, the incumbents can earn supernormal profits during an adjustment period during which new assets are constructed. If new assets can be put in place instantaneously, with no extra cost, the price of existing assets will equal their replacement cost, regardless of interest rate changes. If, as is certainly the case to some degree, expanding the capital stock quickly brings with it extra costs, owners of existing assets will reap a capital gain upon a change that leads to a higher level of the capital stock.

The opposite effect applies to owners of assets for which adjustment requires a fall in the stock. This might be the case for assets that are favored by the existing tax law. Under a true, uniform income tax, all assets are treated alike. We would then expect a shift to a new regime to call for expansion or contraction of all asset stocks. But under the actual income tax, some assets are more lightly taxed than others, and a shift to a uniform consumption-type tax that might call forth an expansion of regular business investment might involve contraction in the stocks of formerly tax-favored assets. Adjustment cost in this case refers to the time required to work off an excess in the supply of an asset type, relative to that justified by the costs of reproduction. The practical case of such an asset of most importance is owner-occupied housing, which I discuss further below.<sup>16</sup>

In view of the influence of such assumptions on the results, the analysis here can only indicate the nature of transition problems, and does not substitute for quantitative modeling.

### *Interest Rates*

If adjustment costs were zero, eliminating a uniform business tax on accretion income would not change business asset prices, except insofar as they reflected any transition wealth tax. The policy change could, however, lead to a change in the rate of interest received by savers. At the one pole is an unchanged rate of return on investment before tax. Since the tax being eliminated was paid at the business level, competition

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<sup>16</sup> Auerbach (1989) studies the dependence of the effects of investment incentives on the cost of adjustment. See also the discussion and references in Sarkar and Zodrow (1993).

would drive up the rate of interest by the amount of the former tax. The interest rate net of tax would therefore rise by the amount of the former income tax rate, providing wealth owners with a higher yield. At the other pole is an unchanged rate of interest net of tax, the case of “infinitely elastic” supply of capital. In this case the market rate of interest would be unchanged, but expansion of the capital stock would result in driving down the rate of return on investment by the amount of the former tax. Wealth holders would see no change in the yield on their holdings.

If interest were taxed at the level of the recipient, rather than at the level of the paying firm, the outcomes would be the same, but, since the market rate of interest would then be a before-tax rate, the description would need to be revised accordingly.

Concentrating on the case of no change in the before-tax yield on investment, we see that the higher rate of return works to compensate wealth holders for the loss imposed on transition to the consumption-type tax. Whether a particular wealth holder gains or loses depends critically on the planned timing of consumption. For people who are planning to draw down their wealth in the near future, even a very large increase in the rate of return will not compensate for the one-time loss. For people who are planning to defer consumption for a long time, the one-time wealth loss will be more than made up by the increased yield.<sup>17</sup>

The analysis of these polar cases establishes several points:

- In general, imposition of a consumption-type tax will cause a one-time loss to owners of certain assets. The loss will be spread over all wealth-owners to the

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<sup>17</sup> For further discussion of the tradeoff see Bradford *et al* (1984, pp. 180-184).



extent the transition is accompanied by an unanticipated increase in the price level.

- Substitution of a consumption-type tax for an income-type tax may bring with it a higher after-tax yield to holders of wealth.
- A higher yield is a compensating factor for a transition wealth loss, but the offset depends on the consumption plans of the holders. Those planning long postponement will gain. Those planning near-term consumption will lose. If there is no increase in the yield on wealth, there is no compensating offset to the loss of wealth on transition.
- There is thus a considerable range of outcomes possible, depending in particular upon the response of the rate of return on saving to the change in policy and on the distribution of preferences in the wealth-holding population. Empirical research will be required to draw more specific conclusions.

### *Owner-Occupied Housing*

Just as in the case of other assets, the effect of a transition to a consumption-based tax on owner-occupied housing has two elements. First is any tendency for the transition to effect a one-time tax on this form of real asset. Real assets in the hands of households, including consumer durables and inventories of goods, as well as houses for personal use, are not subject to the one-time tax. We may contrast the situation of a person in the business of building houses for sale, who would confront the wealth tax in transition, because the sale of a house in inventory would be subject to the consumption tax. That

house would compete in the market with houses already owned by households, and would therefore sell for the same price.

In connection with the discussion of business capital above, the case of no adjustment costs was highlighted. In that case, the stock of business capital is assumed to adjust so that all forms of investment have the same yield at the margin (the going interest rate). The corresponding assumption for owner-occupied housing would lead to the same result: the value of the stock of housing would not be affected by any change in the interest rate brought about by the shift in tax regime.

To illustrate the effect of positive adjustment costs, suppose the stock of housing in the income tax era is adjusted to yield the after-tax risk-free interest rate of 1.5 percent when the market risk-free interest rate, before tax, is 2 percent. Owner-occupied housing will attract investment until its yield, which is exempt from tax, is 1.5 percent. The regime shift produces a decline in the market interest rate to, say, 1.75 percent as a result of an expansion of saving and capital accumulation. To get to a yield of 1.75 percent on the margin in housing investment requires a downward adjustment in the stock of housing. We might expect such a downward adjustment to take time, which is to say to involve adjustment costs. In this case the regime-shift would have a depressing effect on housing prices, and result in losses to owners of housing capital.

#### The Effect on the Analysis of Taxing Wages and Interest at the Individual Level

A simplified version of a shift to consumption-type tax from something like the present tax system would involve a change from an income-type tax with a deduction at the level of the firm for interest payments and wage payments (and taxation, at the same

rate, at the level of wage and interest recipients) to a consumption-type tax at the business level with no deduction for interest (or taxation of interest received) and possibly no deduction for wages (and in that case, no taxation of wages received). I have argued that the equilibrium results obtained should not depend upon the level (payer or recipient) at which interest or wages is taxed. The alternative tax treatments will be reflected in compensating differences in the terms of the transactions between payers and recipients. There is, however, a potential transition problem posed by contracts entered into in one tax regime that are to be carried out in the other.

Starting with a system that taxes interest and wage payments at the level of the individual implies the existence of commitments, fixed for some period of time, that will incorporate the expectations of the parties about the tax treatment of the payments. Consider first the case in which the shift to a consumption-type tax is *not* accompanied by a change in the general price level. Then, during the period covered by the contractual commitment, the interest recipient or wage recipient under a contract made before the change will gain, and the payer will lose. The gains and losses will be simply the amount of the tax.

Alternatively, if there is a one-time price level change in connection with introduction of the consumption-type tax, the purchasing power of the recipient who no longer pays tax will be the same as before the change. The transition problem is thus linked to the price level determination.

It may be reasonable to single out interest commitments in this regard, as being fixed for a longer term than is likely in other contracts, and, perhaps, as being less

amenable to re-negotiation. (In a sense, most employment contracts are in a continual process of re-negotiation.) But the difference is one of degree.

### **III. Moderating Transition Incidence Effects**

At the business level two points at which special transition rules would seem likely are basis in assets and liabilities and commitments to interest with a presumption of deductibility established prior to the shift in regimes. The more generous the allowances, the less the potential loss from transition, at a cost in terms of the revenue that must be made up in a higher tax rate in the new system.

#### **Providing for Basis in Business Assets**

For the simple case of substitution, overnight, of a uniform subtraction-method value-added tax of the consumption type for a uniform income tax, a “cold turkey” transition would effect a one-time tax on the holders of real assets, perhaps reallocated to the holders of wealth more generally, via price-level effects.<sup>18</sup> To eliminate any one-time tax on existing real assets would require allowing immediate deduction of the company’s basis. As far as the past investment decision is concerned, this would have the effect of putting it on the income tax system up to the time of the switch, and on the consumption-tax system from then on. We can describe it as a policy of fully protecting “old capital.”<sup>19</sup>

It is often said that protecting old capital in this way would unacceptably increase the government’s budget deficit. Dealing with the deficit consequences is, however, a

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<sup>18</sup> Hall and Rabushka (1995) advocate this form of transition to the Flat Tax.

<sup>19</sup> Although I do not develop the point here, it might be noted that a similar line of argument leads to the conclusion that to protect old savings from the one-time tax on transition to a consumed-income tax at the personal level would involve allowing immediate recovery of basis.

matter of structuring the rules to achieve the desired cash flow. Thus, an economically equivalent policy to permitting immediate write-off of existing basis would be to permit write-off over a period of time, as long as desired, provided there were an allowance of interest earnings on as yet undeducted basis. The effect would be to provide taxpayers with the same discounted value of tax savings as immediate deduction, but the cash flow to the government would be very different.

The revenue effect of taxing or not taxing existing stocks of assets is, however, not a matter of detail. In their modeling of such transitions, for example, Auerbach and Kotlikoff (1987) conclude that a switch from an income tax to a consumption tax, while fully protecting old capital (a policy they refer to as a wage tax) might well generate an effective reduction in national welfare, whereas a switch that provided no protection to old savings would generate large gains in every case. This is because the lump-sum character of the one-time tax on wealth (in their analysis, they treat the change as unanticipated) allows a lower tax rate, thereby enhancing future efficiency.

Such particular conclusions are a function of the specifics of the modeling of the economy and the policies. (For example, Auerbach and Kotlikoff do not incorporate the smoothing of revenues that might be accomplished by delaying the recovery of basis along the lines discussed above). The generic point is, however, unavoidable, and it is a centrally important element of policy choice. A one-time tax on old savings can generate a great deal of revenue, and if it is really unanticipated, it can do so with no efficiency cost at all, just the distributional consequences discussed above. I return below to both the efficiency and the distributional questions.

As an alternative to fully protecting old capital, permitting businesses to continue to take as deductions against the value-added tax of the consumption type the depreciation allowances to which they would have been entitled under the income tax might seem a reasonable policy. It would appear to fulfill the expectations of businesses that had made investments with certain expectations about the tax treatment of the transactions. As the discussion thus far should make clear, however, this is not the same as fully protecting existing assets from the one-time tax that would result from a simple switch to consumption-tax rules. The pattern of incidence is also somewhat curious: Owners of assets with short remaining lives would be closest to fully protected, while those owning assets with long remaining depreciable lives, such as recently constructed buildings, would come closest to incurring the full one-time tax. It is not clear such a pattern of incidence has anything to offer in terms of either efficiency or equity.

#### Providing for Pre-Existing Commitments to Pay Interest

As I have suggested, the commitment to pay interest would seem particularly prominent among the various pre-existing commitments that might attract special transitional treatment. I have also suggested that adjustment for pre-existing commitments will occur automatically if there is a one-time price level change. In the alternative case of no change in the price level, it would appear feasible in the framework of *uniform* systems to adopt a grandfathering approach: With regard to those commitments that pre-date the transition to the new system, retain the old tax rules. The deduction by one taxpayer and inclusion by another taxpayer at the same rate of tax has no allocational significance, but if the applicable tax rate is the same in the income and the consumption tax systems, both

borrowers and lenders will be unaffected by the change in rules. This observation applies to deduction by mortgage borrowers of interest on pre-existing contracts, just as it does to businesses.

The neat symmetry and simplicity of this transition rule would be considerably complicated by the presence of multiple rates of tax (for example, both taxable and tax exempt entities) in the pre-existing system or in the new system. In some way preserving pre-existing expectations with regard to interest payments and receipts may, however, provide a way to moderate an effect of shifting to a new system that has no obvious policy merit. (That effect is imposing an unexpected burden on borrowers and providing an unexpected windfall on lenders by virtue of the change in treatment of payments labeled interest).

The issue of the treatment of pre-change commitments to pay and receive interest needs to be distinguished from the issue of the impact of the change in the rate of interest as a relative price. If the after-tax interest rate increases as a consequence of the regime shift, net creditors will gain and net debtors will lose. This phenomenon is taken up in the next section.

#### **IV. Should Old Capital Be Taxed?**

##### **Efficiency Arguments: Transition Incentives**

Thus far I have concentrated on the incidence effects of a switch between a uniform income tax and a uniform consumption tax. There are two important incentive-related aspects of the transition.

First, as has been discussed, the one-time wealth tax potentially provides the revenue to permit a relatively low tax in the new system. One can, I think, make too much of this. It is true that a lump-sum tax has no distorting effect on behavior, i.e., causes no efficiency loss. Imposing a lump-sum tax would provide revenue to reduce taxes that do distort behavior, such as taxes on earnings from work or saving. As demonstrated by Auerbach and Kotlikoff (1987, and especially 1983), the gains from lower tax rates could actually permit everyone, including those on whom the one-time wealth tax is imposed, to gain from the transition. To establish whether these conditions are fulfilled in fact, and whether a particular transition plan would effect such a general gain, would require more detailed empirical analysis than has been carried out to date.

To be a lump-sum tax, the tax on wealth must be unanticipated. Otherwise people will take steps to avoid the tax by consuming more rapidly, saving and investing less. This is the second important efficiency aspect of transition. An anticipated introduction of a consumption tax, or an anticipated *increase in its rate*, for which no compensating transition rule is provided, will discourage saving and investing, encourage current consumption. Assets held at the time of an increase in rate suffer a one-time percentage tax equal to the change in consumption-tax rate. There is an incentive to convert assets to consumption before the rate change. An investment project will result in a deduction today at the lower rate, but its future payoff will be taxed at the higher rate. There is an incentive to postpone investment projects. It is easy to see that these incentive effects could be very strong.



Concern about incentive effects of this sort lead policy makers to establish an “effective date” on the day of first serious consideration of programs, such as an investment tax credit, designed to encourage investment. It is recognized that an anticipation that investment will be more favorably treated in the future than in the present will lead to a postponement, typically the very opposite of the desired effect.

#### Political Economy Arguments: Time Consistency

There is a certain contradiction in the idea that imposition of a consumption-type tax is unexpected, and therefore is effectively a lump-sum tax, with no disincentive effects, whereas an increase in the *rate* of a consumption tax may be anticipated, discouraging investment. The logic is “We’ll only do this just this once.” The *potential* that a government *may* introduce a consumption-type tax without compensating transition rules presumably has disincentive effects as soon as it is felt to be operative (as perhaps in the present time). In any case, once a consumption-type tax is in place, the consequences of anticipated changes need to be taken into account.

There are basically two directions to take toward dealing with this problem on a more systematic basis. The first is to design into the systems mechanisms that limit the variability in tax rates. An example would be enacting special majority rules for tax rate increases. Another example is the self-averaging feature of the Cash Flow Tax described in the U.S. Treasury’s Blueprints for Basic Tax Reform (U.S. Treasury, 1977, also Bradford *et al*, 1984). In briefest sketch, the Blueprints Cash Flow Tax would operate wholly at the level of the individual (rather than the firm), producing a consumption-type base by allowing deduction of net deposits to “qualified accounts” and otherwise leaving

interest and similar flows out of the tax base. The resulting base would be taxed at graduated rates. In such a system it would be in the individual taxpayer's interest to "self-average" to maintain a constant tax rate over time.<sup>20</sup> Self-averaging is generally thought of as a way to deal with variation in the individual's tax base, due to life-cycle or other sources of changing economic circumstances. But self-averaging could also deal with anticipated changes in legislation, leading taxpayers to engineer a current tax increase for themselves in anticipation of an upward shift in the tax rate schedule to be brought about through legislation, or a tax decrease in anticipation of a downward shift in the tax rate schedule. In the process, adverse incentive effects on investment would be eliminated.

The second approach is to establish a principle or mechanism to assure that changes in rates will be accompanied by measures to reduce or eliminate the effective wealth levies, for example by grandfathering provisions. (Another example of such a device is the common practice in the legislative process, when investment incentives are likely to be affected by rule changes, of announcing an effective date after which transactions will come under the new rules if enacted.) It seems easier to imagine grandfathering rules to protect taxpayers from having their wealth taken by a rate increase than ones that would extract the wealth gain from a tax rate cut. A practical instance of such a gain was effected by the TRA86, which resulted in substantial reductions in the taxes on pension benefits that had been deducted earlier at higher marginal rates.

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<sup>20</sup> Taking into account risk leads to an interesting modification of this story.

There is thus an interaction between a general practice of protecting investors from the sort of wealth tax that we have been discussing and the degree to which tax rate changes need to be inhibited.

### Equity Arguments<sup>21</sup>

#### *Early and Late Consumers*

There are two main strands of equity arguments in connection with the transition to a consumption-type tax. The first one focuses on the fact that, under a consumption-type tax, owners of wealth will obtain their normal yield free of further tax. This applies to wealth accumulated after the transition, and is an aspect of the argument in favor of the consumption approach. But for those who accumulated their wealth before the transition, goes the argument, the new rules may effect an unexpected, if not undeserved, gain.

As discussed above, any one-time tax on wealth in the transition is, to greater or lesser degree, compensated if the rate of return to owners of wealth increases in the process (a likely, although not necessary outcome). For a wealth owner who plans to consume immediately after the change in regimes, an increase in the rate of return is of no value. There is no compensating gain. For one who plans to postpone consumption for a long time (for example, by passing wealth along to heirs), the gain in rate of return may more than compensate for a one-time tax.

If it were desired as a matter of policy to achieve rough neutrality in the transition, that is, generate neither gainers nor losers, it would be necessary to develop a way of

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<sup>21</sup> I have particularly benefited from discussions with Louis Kaplow on the subject of this section. Some of his ideas about transitions in general are set out in Kaplow (1986) and about transition to a consumption type tax in Kaplow (1995).

discriminating between among wealth owners according to their likely consumption horizons. If the distinction is based on behavior (that is, on when people actually consume), giving greater effective protection from the wealth tax on transition to those who consume (dissave) earlier, a price will be paid in the form of both equity and efficiency consequences rather at variance with the philosophical underpinnings of consumption taxation. Any attempt to discriminate with any precision among people according to the timing of their planned consumption is likely to introduce such incentives, precisely because of the need to refer to people's behavior to determine their preferences.<sup>22</sup>

*Consistent Application of Consumption-Tax Philosophy*

Many people advocate a shift away from income and toward consumption taxation on grounds of efficiency. In particular, they seek the neutrality of a consumption-tax (at least a uniform consumption tax) with respect to the decision to save. I have elsewhere (1986) suggested that a principal argument in favor of a consumption approach is, rather, one of equity. In brief, if two people are otherwise similarly situated but differ in their preferences as to the timing of consumption, a consumption tax will impose the same burdens on them, but an income tax will discriminate in favor of the one who prefers to consume earlier. The same argument that suggests it would be unfair to discriminate between people according to their preferences for clothes of different color would imply it

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<sup>22</sup> This point is emphasized by Kaplow (1995) in his analysis of the USA Tax. The USA Tax proposal incorporates a system for individuals to recover the basis in their wealth at the time of transition, but the recovery is postponed until such time as the taxpayer becomes a net dissaver.

would be unfair to discriminate on the basis of differences in preferences for the timing of consumption.

A sketch of the way this line of argument might be carried over to policy toward transition goes as follows. Consider the two people who are similarly situated except that one prefers to postpone consumption more than the other. By the transition date, the late-consumer has a larger stock of savings than the early-consumer, and will have paid more in taxes. After the transition, the two will pay the same amount of tax *except* for any wealth tax effect of the transition itself, which will work to the relative disadvantage of the late-consumer. The argument for neutrality of treatment according to preferences about the timing of consumption would seem to imply, at least, protecting the wealth in the transition. Viewed from the perspective of the lifetime treatment at the hands of the tax system, fully protecting wealth in transition leaves the discrimination against the late consumer to the extent of the duration of the income tax regime.

## **V. Concluding Remarks**

There seem to be two main attitudes toward transition in connection with major tax reform. One approach is to minimize it, in the interest of moving ahead to achieve the reformer's objective. The other is to become intimidated with the problems of transition, so that they form a roadblock to change. Major tax changes have taken place (good examples in the United States include the tax reforms in 1981 and 1986) that have presumably had significant transition effects, but have somehow been carried out anyway. I hope the analysis presented in this paper will assist policy makers both to put in

perspective problems of transition to consumption-based taxes and to address those that are important.

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