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The Superiority of an Ideal Consumption Tax Over an Ideal Income Tax

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September 22, 2005

Abstract

This paper considers the arguments regarding the choice between an ideal income tax and an ideal consumption tax, focusing on an argument first made by Atkinson and Stiglitz regarding neutral taxation of commodities. This argument shows that, under its assumptions, a properly designed consumption tax is Pareto superior to an income tax: it is more efficient, more redistributive, or both. The paper illustrates the Atkinson Stiglitz argument using the simple case where investments produce risk-free returns and individuals vary by their ability. It then considers more complex cases, such as risky returns, inherited wealth, heterogeneous savings rates, and the possibility of additional returns to savings, such as power, prestige, and security. Finally, it examines qualifications to the argument and circumstances under which an optimal tax might provide for some taxation of interest income.

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The Superiority of an Ideal Consumption Tax Over an Ideal Income Tax

Joseph Bankman[*] *and David A. Weisbach*[**]

September 22, 2005

Perhaps the single most important tax policy decision is the choice between an income tax and a consumption tax. The topic has been discussed and argued over since at least the time of Hobbes and Mill without apparent resolution.[1] Consumption and income taxes both represent substantial sources of revenue in all modern economies.

This paper considers the choice between an income tax and a consumption tax focusing on an argument first made by Anthony Atkinson and Joseph Stiglitz in 1976 (AS 1976). AS 1976 shows (under the assumptions of the model) that taxes should be imposed on all commodities at the same rate – taxes should be neutral. For reasons illustrated below, this conclusion implies that a consumption tax is superior to an income tax. AS 1976 has recently attracted substantial

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[1]The literature is immense. *See, e.g.,* THOMAS HOBBES, LEVIATHAN (1651); JOHN STUART MILL, PRINCIPLES OF POLITICAL ECONOMY (1871); IRVING FISHER, THE NATURE OF CAPITAL AND INCOME (1906); NICHOLAS KALDOR, AN EXPENDITURE TAX (1955); William Andrews, *A Consumption-type of Cash Flow Personal Income Tax,* 87 HARV. L. REV. 1113 (1974); Michael Graetz, *Implementing a Progressive Consumption Tax,* 92 HARV. L. REV. 1575 (1979); Alvin Warren, *Would a Consumption Tax Be Fairer Than an Income Tax,* 89 YALE L.J. 1081 (1980); David Bradford, *The Case for a Personal Consumption Tax, in* WHAT SHOULD BE TAXED: INCOME OR CONSUMPTION 75 (Joseph Peckman ed., 1980); DAVID F. BRADFORD & THE U.S. TREASURY TAX POLICY STAFF, BLUEPRINTS FOR BASIC TAX REFORM (2d ed. 1984); **Barbara H. Fried, *Fairness and the Consumption Tax*, 44 STAN. L. REV. 961 (1992);** ALAN AUERBACH & LAWRENCE KOTLIKOFF, DYNAMIC FISCAL POLICY (1987); DANIEL SHAVIRO, WHEN RULES CHANGE (2000).

attention in the economics literature but, perhaps because the arguments are technical, it has yet to receive any attention in the legal literature.[2] Our task here is to explain the intuition behind AS 1976 and explore how applicable the model is to the real world. Our conclusion is that, based on current understanding, ideal consumption taxes are superior to ideal income taxes.

We will generally compare only the ideal forms of income and consumption taxation. The actual choice of a tax system has to be based on how the system would be implemented, focusing on administrative and compliance costs. Neither an income tax nor a consumption tax would likely be implemented in their pure forms and differences in administrative and compliance costs might be dispositive in the choice between the two. Nevertheless, it is worth examining the ideal forms for two reasons. First, determining which ideal form is most desirable helps us design actual systems and helps us understand the flaws of actual systems – ideals matter in tax reform.

Second, the case for the income tax is likely to be strongest if the comparison is made between ideal forms. This is because the income taxes we have had for almost a century is much worse than the ideal income tax, and contains structural features that make reform difficult. For example, an ideal income tax would tax the change in the value of investments each year. Under existing law, the change in investment

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[2]There are some hints of the argument in the legal literature but no cites to the paper. For example, prior to the publication of AS 1976, Andrews, *supra* note 1,at 1174-75 suggests a similar argument. Daniel Shaviro recently made an argument similar to AS 1976. Daniel Shaviro, *Replacing the Income Tax with a Progressive Consumption Tax*, 103 TAX NOTES 91 (2004). The economics literature has also not fully absorbed their argument. For example, JANE GRAVELLE, THE TAXATION OF CAPITAL INCOME (1994) makes arguments that were refuted in AS 1976.

AS 1976 has been cited in the legal literature with respect to a related but distinct consideration, which is whether legal rules should be used to redistribute. *See, e.g.*, Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. Legal Studies 667 (1994).

value is taxed only if it is "realized" in the form of sale or exchange. The so-called realization requirement is responsible for much of current tax-related complexity and distortion. Elimination of that requirement, however, raises difficult liquidity and valuation issues, and in part for those reasons has never been seriously considered. An ideal income tax would also measure gain and loss on an inflation-adjusted basis. Inflation adjustments, while possible, would be difficult and also have never been seriously considered. A consumption tax raises neither of these difficulties, and most scholars believe that a consumption tax is easier to administer, and can be administered in purer form, than an income tax. By comparing ideal systems and ignoring administration costs, we are deliberately making the best possible case for the income tax. If a consumption tax is superior to an income tax even ignoring the major implementation problems of an income tax, if follows that it will be even more desirable once those problems are taken into account.

Section I presents the core argument, focusing on the simplest case, in which investments produce only risk-free, time-value returns and individuals vary by their ability. Income taxes tax the risk-free return while consumption taxes do not. In this simple world, the AS 1976 arguments show that a consumption tax is a Pareto improvement over an income tax. Importantly, this argument includes both efficiency and redistributive concerns. Everyone is equally well off or better off under a properly designed consumption tax. It is more efficient, more redistributive, or both.

The AS 1976 model, like all models, contains assumptions and simplifications. To understand the practical impact of the AS 1976 arguments, we need to understand the realism of the assumptions and the results of relaxing them. The remaining sections of the paper consider these issues. We consider the four most prominent issues and show that the conclusions from the simplified world with only risk-free investments carry through, almost in their entirety, to more realistic cases.

Section II considers the taxation of risky returns and economic profits. Extension of the basic case to risky returns and profits is straightforward. There is a long line of literature showing that ideal, flat-

rate income and consumption taxes treat risky returns and economic profits the same way, leaving as a difference, only the risk-free rate of return, discussed in Section I. Section II very briefly explains this literature and then discusses whether imposing graduated rates on capital income changes the conclusions.

Section III considers how labor income and wealth are related and the extent to which the possibility of wealth without labor income affects the arguments. One might think, for example, that by taxing capital income, income taxes are better at capturing the benefits of inheritances. Section III shows that if correctly implemented, a consumption tax can tax such wealth and, therefore, such wealth should not affect the choice between the two tax bases.

Section IV considers the difference between spenders and savings and whether savers are better off in a manner that would support a income tax. The basic argument given in Section I assumes that within an earnings or ability class, individuals make similar savings decisions. In the real world, there may be significant heterogeneity in savings and this heterogeneity has been thought by some to support an income tax. Section IV argues that it does not.

Section V examines the argument that savings brings prestige, power, and security, and that the benefit of savings is more than future consumption. This extra benefit of savings is thought by some to support an income tax. Section V shows that this is not the case. Consumption taxes properly tax the benefits from savings.

The AS 1976 model, like all models, is subject to a number of qualifications and extensions. The economics literature examining and extending AS 1976 is large and complex. Our goal here is to explore the core arguments that arise from the literature and their practical implications. Newer models show that a complete, optimal tax analysis may possibly produce exotic taxes that look like neither a pure

consumption tax nor a pure income tax. These models may also help explain deviations from pure income and consumption taxes (such as deductions granted to particular types of individuals or activities) that might otherwise seem troubling. In Section VI, we will briefly discuss the possibility that newer models might show that a tax on savings is desirable. Section VII concludes.

Before we begin the analysis, we should clarify our terminology and the origins of the ideas explored here. Throughout the paper, we will refer to the argument as originating with AS 1976, because that paper was the first in a line of papers on the topic. AS 1976 and many later papers in the economics literature analyzed the problem by assuming that there was a perfectly designed and implemented labor income or consumption tax in place and asked whether any small perturbations from such a tax were desirable.[3] An alternative method of analyzing the problem was first developed by Hylland and Zeckhauser and substantially strengthened and extended by Kaplow.[4] This method uses a "replicating

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[3] The literature taking this approach is large. *See, e.g.*, Joseph E. Stiglitz, *Self-Selection and Pareto Efficient Taxation*, 17 J. PUB. ECON. 213 (1982); Joseph E. Stiglitz, *Pareto Efficient and Optimal Taxation and the New New Welfare Economics*, *in* 2 HANDBOOK OF PUBLIC ECONOMICS 991 (Alan J. Auerbach & Martin Feldstein eds., 1987); Robin Boadway, Maurice Marchand & Pierre Pestieau, *Redistribution with Unobservable Bequests: A Case for Taxing Capital Income*, 102(2) SCAND. J. OF ECON. 253 (2000); Helmuth Cremer, Pierre Pestieau & Jean-Charles Rochet, *Direct versus Indirect Taxation: The Design of the Tax Structure Revisited*, 42(3) INT'L ECON. REV. 781 (2001); Angus Deaton, *Optimal Taxes and the Structure of Preferences*, 49(5) ECONOMETRICA 1245 (1981); James A. Mirrlees, *Optimal Tax Theory*, 6 J. PUB. ECON. 327 (1976); Roger Gordon, *Taxation of Interest Income*, 11 INT'L TAX & PUB. FIN. 5 (2004).

[4] *See* Aanund Hylland & Richard Zeckhauser, *Distributional Objectives Should Affect Taxes but Not Program Choice or Design*, 81 SCANDINAVIAN J. ECON. 264 (1979), which was substantially strengthened and extended by Louis Kaplow, *On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal*, Harvard John M. Olin Center for Law and Economics Discussion Paper No. 470 (2004) and Louis Kaplow, Taxation and Redistribution, Chapter 6 (unpublished manuscript, on file with authors).

tax" argument. It starts with a non-neutral commodity tax and shows how to construct a Pareto superior neutral tax. This latter method of analyzing the problem has two key strengths. First, it extends the result to cases where labor income or commodity tax is not optimal, which is extremely important for applying the argument to the real world. Second, the analysis is more direct and intuitive. We follow the Hylland/Zeckhauser and Kaplow method of analysis here, but to avoid constant parsing of which paper in the economics literature developed which idea, we simply refer to the entire literature as AS 1976.

I. The Core Argument

A. *Basic Definitions and Relationships Between the Bases*

We begin with the simplest case. We assume in this section that investments produce only the risk-free, time value return and that individuals vary by their ability to earn. All of the AS 1976 intuitions can be illustrated in this simple case. We relax these strict assumptions in later sections.

As is shown below, the difference between an income tax and a consumption tax is the taxation of the return to savings or capital income. In a consumption tax, the risk-free return to investing is exempt while in an income tax it is taxed.

A consumption tax, as a matter of legal implementation, is imposed on consumption not labor, but it is economically equivalent to a tax on labor earnings. The reason is that on a going forward basis, there are two sources of consumption: earnings from labor (wages) and earnings from capital. If, in a consumption tax, capital income is not taxed, all that is left to tax is wages.[5]

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[5]There are significant differences between the two in actual implementation. For example, not all labor earnings are paid out as wages which means that a wage tax might

Another way to see that a consumption tax is a tax on labor earnings is to imagine a consumption tax imposed when consumption goods are purchased, such as a retail sales tax. The tax on purchases will reduce the value of a dollar earned exactly the same way a tax directly on the earnings would. For example, suppose all commodities face a 30% tax when purchased.[6] If an individual has $100 of labor earnings, he can consume only $70 of goods. The benefit of working hard enough to earn $100 has been reduced by 30%. We could equivalently have taxed the $100 when earned, leaving the individual with $70 to spend as he pleases.

Note that a tax on consumption purchases does not burden capital income. Suppose, for example, the individual, subject to the retail sales tax, waits until next year to consume, investing his $100 in the market at a 10% rate of return. He will have $110 next year and be able to consume $77 after paying the 30% taxes on his purchases. This is the same as if we taxed his labor income when earned at 30% and he invested his after-tax $70 in the market at a 10% rate of return.

When we refer to an ideal, neutral, or uniform consumption tax, we mean that the consumption tax is imposed at the same rate on all consumption. Note that this includes consumption occurring in different time periods as well as different forms of consumption the same period. For example, the 30% retail sales tax considered above imposes the same 30% rate on consumption whenever it occurs. A non-neutral, or

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not capture all labor income. A wage tax will also not tax economic profits while a well-designed consumption tax will.

[6]Throughout, we will use tax-inclusive terminology, so that a 30% tax on a $100 purchase includes the tax paid, leaving only $70 of goods. We could alternatively express the same tax as a 43% tax on the $70 purchase. Taxpayers in this case would purchase $70 of goods and pay an additional tax of $30, leaving them $100 out of pocket. It is common to express retail sales or commodity taxes on a tax exclusive basis and wage taxes on a tax inclusive basis. To avoid switching between the two methods of expressing taxes, we use only tax-inclusive terminology here.

non-uniform consumption (or commodity tax) imposes different rates on different commodities or forms of consumption. For example, a non-neutral consumption or commodity tax might impose a 20% rate on one type of good and a 40% rate on another.

Neutral consumption taxes can be progressive. Individuals with more consumption can face higher average or marginal tax rates even while those rates are imposed uniformly on all of those individuals' purchases. The easiest way to envision this is through a wage tax with graduated rates, but there are other methods of implementing such a system, some of which are discussed below.[7]

An ideal income tax, like an ideal consumption tax, will impose the same nominal rate on the entire tax base (and, like a consumption tax, can be progressive by, among other ways, imposing graduated marginal rates). Because it taxes the returns to savings, however, an income tax can be thought of as imposing a higher rate of tax on future consumption than on current consumption.[8]

We can (and will) think of an income tax as a non-neutral consumption (or sales or commodity) tax in the sense that it imposes different rates on consumption choices in different time periods. That is, the choice between an income tax and consumption tax can be seen as part of the more general question of whether any uneven or non-neutral commodity tax is desirable.

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[7]Mention a few? Progressive individual cash flow system; x-tax.

[8] The ideal income tax is defined by the Haig-Simons definition of income, which is $Y = C + \Delta W$, where C = consumption and W is wealth. The first component, consumption, is just like an ideal consumption tax (uniform on all consumption) and taxes all consumption, whether present or future, at the same marginal rate. The second component, the tax on the return to savings reduces the benefit of savings, making future consumption relative relatively more expensive than current consumption

To illustrate this numerically, consider an individual, Z, who earns $100 in period one and is considering whether to spend the sum in period one or two. Assume arbitrarily that the pre-tax rate of interest is 5%. Absent taxes on interest income, Z could either consume $100 of goods in period one or save the $100, earn 5%, or $5, and consume $105 of goods in period two. The $105 of goods in period two have a present value to the individual of $100. Assume, now, that the return to savings is taxed at a 40% rate, and is reduced to 3%. Z now must choose between consuming $100 in period one or $103 in period two. The reduction from $105 to $103 has the same effect as a sales tax of about 2% on period two consumption. If discount rates remain constant, the market value of available period two consumption drops to $98.10.[9]

The effective tax rate levied on future-consumed goods increases as the time of consumption grows more distant. If, in the above example, consumption is deferred for three years, the tax reduces available consumption from $116 to $109 - the equivalent of a sales tax of 6.4%. After 30 years, the amount available is reduced from about $430 to $240. This is equivalent to a sales tax of about 80%. The choice between an income tax and a consumption tax can be restated as whether such a sales tax is desirable. As such, it is part of the general question of whether and when non-neutral commodity taxes are desirable.

B. *Arguments for an Income Tax*

There is a vast literature on the choice between an income tax and a consumption tax, split in its support of one or the other.[10] While there are numerous arguments on the issue, we believe that there are three

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[9]The burden to Z of the sales tax would be reduced to the extent the tax is borne by borrowers; to the extent that occurs, the before-tax rate of return will rise. The incidence of the tax, however, does not change its characterization as a sales tax. Sales taxes may also be shifted between buyers and sellers.

[10]***See* note 1 for a partial list of papers.**

reasons why many prefer an income tax to a consumption tax. The first is an efficiency argument, which concludes that whether a consumption tax is more efficient than an income tax depends on empirically unknowable or indeterminate facts and, therefore, there should be no presumption that one is more efficient than the other. The second is that an income tax is better at redistribution. Given that the efficiency effects of the choice are ambiguous and possibly unknowable but there are clear distributive gains, we should support an income tax. The third is that wealth is thought to bring a host of benefits, such as power, prestige, and security, and an income tax is thought to be better than a consumption tax at taxing these benefits.

The efficiency argument, which we will call the trade-off theory, compares the relative distortions of an income tax and a consumption tax. A consumption tax does not tax the return to savings. This means that savings decisions are undistorted and individuals choose the optimal amount to consume at each date. A consumption tax does, however, tax labor earnings, which means that decisions about how much to work are distorted. An income tax taxes the return to savings, which means that future consumption is relatively more expensive and savings decisions will be distorted. The claimed advantage of an income tax, however, is that by taxing the returns to savings, the tax rate on labor earnings can be lower, so that work decisions are distorted less under an income tax than under a consumption tax. Whether a consumption tax or an income tax is more efficient depends on the relative elasticities of savings and work effort. As stated by one prominent economist,

> The efficiency effects [of the choice between an income tax and a consumption tax] depends on assumptions about behavioral effects. If individuals are relatively unwilling to substitute consumption over time and relatively willing to substitute leisure for consumption of goods, then a significant tax on capital

> income would constitute part of an optimal tax system. These behavior effects are difficult to estimate empirically.[11]

This same argument is repeated in the most recently published public finance textbook, which is intended to summarize economists' basic understanding of these issues.[12]

The second reason for supporting an income tax is distributive: Income taxes are thought to have better distributive consequences than consumption taxes. One version of this argument is that failure to tax returns to savings leaves enormous pools of wealth untaxed, creating vast inequalities in our society. Much of that wealth is created because of general societal conditions such as property rights, an effective government, the legal system, educated workers, natural resources, and protection from invasions, conditions that have nothing to do with the fortunate (although also skilled and hard-working) individual who earns great wealth as a result. Society has a right to distribute that wealth as it sees fit and it is just and fair to use it to reduce inequality.[13]

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[11] GRAVELLE, *supra* note 2, at 31. Readers will recognize the trade-off theory as Ramsey-tax theory. Under Ramsey taxation, we should levy a tax on goods with low elasticity of demand because the quantities consumed are likely to change less when subject to taxation as compared to good with high elasticities, minimizing deadweight loss. Moreover, distortion rises with the square of tax rates which means that the tax base should be broad; the distortion from the first dollar of tax on one commodity is very likely to be smaller than the distortion from the nth dollar of tax on another commodity.

[12] JONATHAN GRUBER, PUBLIC FINANCE AND PUBLIC POLICY 708 (2005). Gruber claims that "[g]iven the evidence that labor supply is fairly inelastic . . . most economists think efficiency would rise with a consumption tax that shifts the burden of taxation for savings to labor. Given the lack of evidence on the response of savings to its after-tax return, however, such a conclusion is only tentative."

[13] *See*, LIAM MURPHY & THOMAS NAGEL, THE MYTH OF OWNERSHIP: TAXES AND JUSTICE 101 (2002); STEPHEN HOLMES & CASS SUNSTEIN, THE COST OF RIGHTS (1999); Warren, *supra* note 1.

The more technical version of this argument is that transferring a dollar from the wealthy to the poor increases welfare because the marginal utility of money for a wealthy person is likely to be lower than it is for a poor person.[14] If utility goes up with income from capital as well as income from labor, both should be used as a basis for redistributing. This would seem to be true – someone with a large trust fund is unlikely to value another dollar as much as someone working two jobs just to scrape by. Redistributing one dollar from the trust fund baby to the working poor is likely to increase overall welfare. Paris Hilton very likely has a much lower marginal utility of money than someone slaving in the salt mines 60 hours a week to support his family. Redistribution from Paris Hilton to the worker makes sense.

The third, often-repeated argument for an income tax is that wealth brings benefits beyond the value of future consumption. For example, wealth is said to bring security, prestige, and power. Some have argued that only an income tax can tax this wealth and corresponding benefits, and therefore, redistribute in ways that even a highly progressive consumption tax cannot. Given the importance these commentators put on redistribution, they conclude that an income tax is desirable.

These arguments are incorrect. A properly designed consumption tax is Pareto superior to an income tax. It is either more efficient (holding distribution constant), more redistributive (holding efficiency constant), or both. We explain why immediately below, first discussing the trade-off theory and then redistribution. The "wealth as more than future consumption" argument is reserved for Part V.

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[14]This may not be true in every case. Some wealthy may crave additional wealth more than the poor. But given that we must make some assumption about utility, an assumption of declining marginal utility of wealth seems an unproblematic assumption.

C. *The AS 1976 Argument – Efficiency*[15]

The trade-off theory argues that an income tax might possibly be more efficient than a consumption tax because it reduces the tax on labor income while increasing the tax on capital income. Depending on the relevant elasticities, an income tax might be preferable. AS 1976 shows that the trade-off theory is incorrect. The reason is that the trade-off theory misses one of the effects of a tax on the return to savings. In particular, a tax on the return to savings, or any non-neutral commodity tax, has two effects. As widely noted, a tax on the return to savings distorts savings decisions by reducing the benefit of savings. In addition, *it distorts work effort.* This means that there is no trade off. The income tax income tax has the same effect on work as a consumption tax and additionally distorts savings decisions[16]. A tax on savings distorts work effort for the simple reason that it lowers the pay-off from work. Individuals who work today, planning on consuming in the future will be able to consume less in the future for a given hour of work exactly as if wages were taxed directly. Thus by ignoring the latter effect, trade-off theory gets the efficiency calculus wrong.

We illustrate this first using a generic, non-uniform consumption tax and then show how it applies in the case of taxes on the return to savings. Recall that a uniform tax on consumption is equivalent to a tax on labor because it reduces the return to working just like a direct tax on

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[15]Looking only at efficiency is, in an important sense, contrary to one of the key points of AS 1976. They argue that Ramsey-type efficiency analysis is wrong because if we eliminate redistribution from the analysis, the most efficient tax is a head tax. Once redistribution is added back in, a wage tax best distinguishes among individuals on the basis of their ability. AS 1976 never considers the pure efficiency argument. The discussion in the text treats efficiency separately merely to give the spirit of the argument before moving on to the more complex case with redistribution.

[16] Under reasonable assumptions, the net effect of these distortions is to distort work effort more than a consumption tax. See discussion of "Middle" p. 19, infra.

labor would. For example, suppose an individual who earns $100, can spend his earnings on two goods, prunes and figs, each of which is taxed at a 30% rate when purchased. This consumption tax is equivalent to a 30% tax directly on labor income. The individual faces exactly the same set of choices under the alternative taxes – each hour of labor brings the same ability to purchase the goods. The individual, therefore, will behave the same way under each tax, and the efficiency costs, the distortion in work effort (the so-called labor/leisure distortion), of the two taxes are the same. Moreover, if the individual behaves the same way, government revenues will be the same under the two tax regimes.[17]

Suppose instead of a uniform 30% tax on figs and prunes, the tax on prunes was reduced to 20% and the tax on figs increased to 40%. The obvious effect of such a tax is to distort the choice between prunes and figs. Absent good reasons, we would not want the tax system to tilt the market-determined choice between prunes and figs or among commodities more generally.

A second, and key, effect of the non-uniform consumption tax is that it burdens labor. Suppose that under the non-uniform tax, the individual spent $50 on figs (including the tax on figs) and $50 on prunes (including the tax on prunes). The individual would have $70 of after-tax consumption.[18] Just like with the uniform tax on consumption, his work effort brings him only $70 of total value, reducing the return to work

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[17]If the individual defers consumption, the government will receive the revenues at a different point in time, but with the same present value.

[18]He pays $50 for figs but this includes a 40% tax on that amount or $20, leaving him with $30 of actual figs. He pays $50 for prunes but this includes $10 of taxes, leaving him with $40 of actual prunes. Thirty dollars of figs and forty of prunes makes seventy total.

exactly as if work had been taxed directly.[19] Thus, the two effects of the non-uniform tax are to distort the choice between prunes and figs and also to distort labor effort exactly as if labor had been taxed at a 30% rate.

Suppose we substitute the non-uniform 20%/40% tax on prunes and figs with a uniform 30% tax. The individual's work effort is taxed in exactly the same way in the two cases. In both cases, the time it takes him to earn $100 will produce consumption of $70. The efficiency cost with respect to work – the labor/leisure distortion – is unaffected. The choice between prunes and figs, however, is improved because the relative market prices are preserved. The non-uniform tax increased the price of figs relative to prunes and the uniform tax restores the balance. In particular, under the uniform tax, the individual can consume the same bundle as before ($30 of figs, $40 of prunes), but now that the relative prices have changed, can also adjust his consumption to better reflect market prices. The uniform tax is strictly more efficient.[20]

One way to think of the issue is to "renormalize" the non-uniform 20%/40% tax as a direct 30% tax on labor income and a 10% subsidy for prunes financed by 10% tax on figs.[21] The overall tax on figs would be the 30% tax on labor and the 10% direct tax on figs, or 40%. Similarly,

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[19] To the extent that the individual has borne an implicit tax because he has substituted away from his preferred mix of figs and prunes, the value of the goods to the individual falls, and so will his labor effort. If the individual spent a different amount on prunes and on figs, the effective tax rate on labor would be different, but the principle would be the same. Section D below deals with the case where individuals with different earnings choose different amounts of commodities. Section IV deals with the case where individuals with similar earnings choose different amounts of different commodities.

[20] Note also that the uniform tax raises the same revenue as the 20%/40% tax, $30, so the government is indifferent.

[21] Kaplow 2006 introduces this type of renormalization in his extension of AS 1976.

the overall tax on prunes would be the 30% tax on labor less the 10% subsidy for prunes, or 20%. Formulated this way, we can see directly both effects of the non-uniform tax. It distorts labor effort just like a direct tax on labor and in addition, it distorts the choice of which commodities to consume, here subsidizing prunes and penalizing figs. Unless there is some reason for subsidizing prunes and penalizing figs, we would not want to have the non-uniform tax.

The use of Prunes and Figs is intended to hint at consumption in the Present and the Future. To see the connection, recall that we can view an income tax as a non-neutral commodity tax because it imposes higher rates on future consumption than on present consumption. It is just like the 20%/40% tax on prunes and figs. The tax on future consumption (Figs) reduces the return to labor because the individual knows that each hour of effort produces fewer goods at the future date. The trade-off theory misses the effect of the tax on the return to savings on labor effort. Moreover, the tax on the return to savings is less efficient than a pure labor tax because in addition to raising revenue, it distorts savings decisions. The result does not depend at all on the relative elasticity of savings and labor. A wage tax is more efficient even if labor income is highly elastic and savings highly inelastic.[22]

To illustrate, suppose that an individual plans to save half of his earnings for retirement in 25 years, that the rate of return on his savings is 5%, and that he is subject to a 20% income tax. As noted, we can think

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[22]Said another way, to have any force, the trade-off theory has to assume that the tax on figs or on future consumption does not effect labor effort. Instead, it only affects the choice between figs and prunes, future and present. Although the effect on labor effort is relatively easy to miss, once it has been pointed out, it is hard to see a justification for such an assumption. Perhaps one can offer various psychological theories for why people misperceive the effect of various taxes, but the trade-off theory purports to apply classical economics and such an assumption is entirely unjustified within standard economics A tax on future consumption reduces the value of work today and, therefore, has the same distorting effect as a direct tax on that work.

of this income tax as a uniform tax on all consumption plus an additional tax on future consumption due to the tax on investment returns. Under these numbers (picked to match the prune/fig example), the tax on present consumption is 20%. Future consumption is taxed more heavily because the rate of return on investments is reduced from the pre-tax 5% to the after-tax 4%. If we treat the reduction in period 25 consumption as an additional tax on that consumption, the rate would be roughly 20%.[23] The total tax on future consumption would then be 40%, matching the prune/fig example.

The individual would face the same choices as the individual in the prune/fig example. His choice of when to consume, like the choice of prunes or figs, would be distorted by the non-uniform tax. Moreover, his return to work would be reduced both by the 20% tax on all consumption, whatever period, and by the additional tax on any future consumption. Continuing with the same numbers as the prune/fig example, suppose that, facing these rates, he invested half his earnings for consumption in the future and spent the other half in the present. For each hour he works, he would know that the overall tax rate was a blend of the tax rate on immediate consumption and the tax on future consumption. Overall, his labor would face a tax rate of 30%, and he would adjust his work effort accordingly. We can, like in the prune/ fig case, think of the tax as a 30% tax on all consumption (or labor) and a 10% subsidy for present consumption financed by a 10% tax on future consumption.

Suppose we replace the 20% income tax with a 30% consumption or wage tax. The individual will face the same explicit tax on labor. The time it takes to earn $100 will in both cases brings consumption valued

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[23]Calculated as follows: suppose the individual invests $100 at the pre-tax rate of interest of 5% for 25 years. He would have $339 to consume. The tax on the interest reduces the return to 4% and the amount available at retirement to $267. The reduction in retirement consumption is the difference, or $72. Translating this to the present, it is equivalent to imposing an immediate tax on retirement savings of $21 but allowing the savings to grow tax-free.

by the market at $70 (in present value terms). With the 30% consumption tax, however, there is no tax distorting the choice between consuming today and in the future. This choice, therefore, can be made more efficiently. The individual no longer bears an implicit tax attributable to the distortion of his choice between figs and prunes. The 30% consumption or wage tax is strictly more efficient than the 20% income tax. There is no trade-off.

At the risk of belaboring the issue, we want to extend the prune/fig example by explicitly adding wage income and a wage tax. We do so both to further illustrate the efficiency arguments made here and to set the stage for considering redistribution in the next section. We use prunes and figs rather than present and future merely to avoid the complexities of present value calculations.

Consider a person (whom we will call "Middle" in the next section when we consider redistribution) who has wage income of $50,000 and spends it on two goods, prunes and figs. Suppose we have a wage tax of 50% and a tax on figs of 50%, but no separate tax on prunes. Given these taxes, Middle has $25,000 after paying wage taxes to spend on prunes and figs. Suppose Middle spends $20,000 on prunes and $5,000 on figs (consisting of $2,500 on figs and $2,500 in taxes on the figs).[24] Of the $50,000 earned, he pays $27,500 in taxes and gets $22,500 in consumption for the labor effort. We may assume that the tax has also distorted Middle's choice of whether to eat figs or prunes; that while he still eat figs, he eats fewer figs than he would if they were not subject to the additional tax.

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[24]We are assuming that the tax on figs is 50% of the total amount paid, including taxes. Alternatively, the tax could stated on a tax exclusive basis, in which case would use assume that Middle spends $3,333 on figs and pays taxes of $1,667. It doesn't matter which as long as the numbers are all done consistently through the remainder of the example.

The technique used above was to find a tax, which we will call the replicating tax, that falls only on labor income or consumption that provides the government the same revenue as the non-neutral tax. In our example, Middle pays $27,500 in taxes and gets $22,500 in consumption. The replicating tax would be a tax of $27,500 on wags or a 55% tax. Middle will now have $22,500 left after paying the wage tax and have the same amount available for consumption as before. However, Middle will be better off because the choice between prunes and figs is no longer distorted by taxes. The replicating tax, therefore, is a Pareto improvement over the 50% wage/fig tax – Middle is better off and the fisc is equally well off.[25]

The key fact missed by the trade-off theory is that the tax on figs reduces Middle's labor effort. Assuming he wants to eat some figs,[26] Middle will know that each hour of work will produce fewer figs than without the tax. Work is correspondingly less rewarding just as if it were taxed directly. Moreover, the tax on figs is an inefficient tax on labor because in addition to paying the explicit tax, Middle will suffer an additional decline in welfare to the extent the tax has led him to substitute prunes for his preferred good, figs. Replacing the tax on figs with a small increase in wage tax will eliminate this latter form of welfare loss. This result will hold anytime the tax causes Middle to substitute prunes for figs. He will pay an explicit tax and suffer an additional decline in welfare due the substitution way from his preferred

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[25]There is an important and subtle difference between the adjustments to the tax schedule described here and that found in much of the literature, such as **Kaplow, *supra* note 4, *On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal***. The usual approach is to adjust the wage tax to hold utility constant and show that this raises more revenue than the alternative, non-neutral tax. We adjust the wage tax to keep revenue rather than utility constant. Our adjustment is based entirely on observable variable – the revenue raised at each wage level under the commodity tax. By basing the adjustment on observable variable, however, we give up flexibility in how the Pareto improvements are distributed.

[26]If Middle never consumes any figs, the tax on figs is a nullity.

good. The pure wage tax will always eliminate this latter form of welfare loss. We do not have to know anything about the so-called Ramsey factors – the relative elasticities of figs or prunes – to know that the replicating tax, a pure wage tax, is more efficient than the non-neutral tax.[27]

The argument applies equally to present and future consumption. An income tax is like the tax on figs. It imposes an additional tax on future consumption that both burdens labor and distorts the decision of when to consume. A replicating tax is strictly more efficient.

Note that the argument does not depend on the usual arguments for taxing consumption. For example, the argument does not depend on what one thinks about the alleged unfairness of taxing income twice, once when it is earned and once when it is invested and earns interest.[28] The number of times an item is taxed is irrelevant. (Ten taxes at 1% should equal one tax at 10%.) Similarly, it does not rely on common pool arguments[29] or equal sacrifice ideas.[30] It also does not require us to view interest income as compensation for the pain of deferring consumption.[31] Instead, we need merely to view the interest rate as

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[27]There are two (unrealistic) assumptions under which the replicating wage tax will merely be equally efficient but not strictly more efficient. First, if Middle is completely indifferent between prunes and figs he can costlessly avoid the tax on figs by giving up figs. The tax will not be inefficient – but it will raise no revenue. Second, if Middle's demand for figs is completely inelastic and so he consumes as many figs as before, the tax is as efficient as a wage tax because it does not impose an additional welfare loss by causing Middle to give up a preferred good.

[28]MILL, *supra* note 1.

[29]HOBBES, *supra* note 1.

[30]Bradford, *supra* note 1, *The Case for a Personal Consumption Tax*.

[31]*See* Alan Gunn, *The Case for an Income Tax*, U. CHI. L. REV. 370 (1979); Mark Kelman, *Time Preference and Tax Equity*, 35 STAN. L. REV. 649 (1973).

setting the price of goods to be consumed in the future and a tax on interest income as increasing that price. Given that a person saves (other than with respect to his last, marginal dollar of savings), he very much likes that price and is better off for taking it. Therefore, he is more than compensated by interest for the pain of deferring consumption. This fact, however, is entirely irrelevant, just as it is irrelevant that he likes the price of prunes and is better off for buying prunes at their going price and just as it is irrelevant that a tax on labor ignores the fact that wages compensate individuals for the costs of work.

D. *The AS 1976 Argument – Redistribution*

We can now add redistribution to the analysis. The argument is straightforward given the efficiency analysis above. The efficiency analysis considered a single individual and showed that we can replace a non-neutral tax (such as a tax on savings) with a consumption or wage tax (the replicating tax) to make that individual better off. To add distribution to the analysis, we simply perform this same substitution of tax systems at each income level. Following the same argument, individuals at each income level would be better off. The replicating tax, therefore, is a Pareto improvement over an income tax even when redistribution is taken into account. A wage or consumption tax, properly structured, is thus preferable to an income tax, and this holds entirely without regard to our views on how much redistribution is appropriate.

We can analogize the argument for a tax on savings to the argument for a luxury tax. The argument for a luxury tax is that only the rich can afford to purchase luxuries. A tax on luxuries, therefore, seems to have good distributive properties which might outweigh any inefficiencies. Notwithstanding the possible distributive properties, however, a luxury tax is not desirable. For each income class, we can determine their luxury purchases and replace the luxury tax with the replicating wage tax. For example, suppose that those who earn between

$30,000 and $50,000, $50,000 and $100,000, $100,000 and $200,000, and so forth, tend to purchase luxuries with a given percent of their earnings, the percentage going up with income. As illustrated above, we can adjust the tax on their labor earnings to replicate the effect of the luxury tax. With such an adjustment, each income class will pay the same total tax. Distribution, therefore, is held constant, but the overall system is more efficient. Indeed, the efficiency gains can be traded off for more redistribution, if so desired. If the gains from eliminating the luxury tax are used to create more redistribution, the more one favors redistribution, the more one should be *against* a luxury tax.

The identical argument applies to a tax on the return to savings. The argument for a tax on the return to savings is that the rich save more than the poor, so savings is like a luxury good. On the surface, taxing it seems to have good distributive properties, but for the same reason that the luxury tax is undesirable, a tax on savings is undesirable.

To fill this in, we expand the example used in the prior section. Suppose there are three types of individuals in society: poor, middle, and rich, with middle the same as above. They consume two types of commodities, figs and prunes. The rich consume more figs and fewer prunes (relative to their total) than do the middle class, and similarly for the middle class compared to the poor.

Suppose that we have a flat-rate wage tax of 50% and a tax on figs of 50%, the tax on figs but not prunes being justified on the theory that the rich consume relatively more figs, so such a tax is progressive. We use a flat rate wage tax here for illustration, but the wage tax could have any structure and the argument would still work.[32] Suppose that given these taxes, incomes and consumption amounts are as follows:

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[32] **Kaplow, *supra* note 4, *On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal*, demonstrates this formally.**

	Poor	Middle	Rich
Pre-tax wage income	$25,000	$50,000	$100,000
Wage taxes (50% rate)	$12,500	$25,000	$50,000
After-tax wages	$12,500	$25,000	$50,000
Prune consumption	$12,500	$20,000	$25,000
Fig consumption (including tax)	$0	$5,000	$25,000
Fig tax	$0	$2,500	$12,500
Total taxes paid	$12,500	$27,500	$62,500
Taxes as a percent of wages	50%	55%	62.5%

In the argument on efficiency above, we replaced Middle's wage/fig combination tax with a wage tax that produced the same total taxes. We make the same adjustment here except that we do so for each type of individual separately. Therefore, we eliminate the combination wage/fig tax and replace it with a new, more progressive wage tax with rates of 50% on Poor, 55% on Middle, and 62.5% on Rich. This tax is a Pareto improvement over the wage/fig combination tax.

As in the case with only one individual, under the new structure, both Middle and Rich are better off. (Poor is neutral rather than better off because he did not consume figs.) Given the tax on figs and not prunes, Middle and Rich presumably reduced their figs consumption to an amount lower than they desire. The new tax structure gets rid of this distortion, allowing them to make better consumption decisions (more figs, less prunes). While eliminating the prune/fig distortion, the

replicating tax holds redistribution constant: each individual pays the same tax under the replicating tax as in the wage/fig tax structure. Therefore, the replicating tax is Pareto superior.

Now, as before, translate Prunes into Present consumption and Figs into Future consumption (savings). The fig tax becomes the tax on interest income. The argument that the tax on interest income is undesirable is identical to the argument that the tax on figs is undesirable. The tax on interest income may redistribute from the rich to the poor, but we can achieve equal redistribution through a more progressive tax on labor income that does not distort savings decisions. Everyone would be at least as well as or better off.

Note that the argument does not depend on the relative degree of inequality in our society or our preferences for redistribution. Therefore, the recent increases in inequality have no bearing on the choice between an income tax and a consumption tax. Similarly, one's views on the appropriate extent of redistribution have no effect on the argument. Even if we believe in substantial redistribution, a consumption tax remains superior. In fact, as indicated above with respect to a luxury tax, the more we prefer redistribution the more we might want a consumption tax because the Pareto advantages can be used to redistribute more rather than to increase efficiency.

The analysis so far has considered only the simplest case. The return to investing was assumed to be risk-free. We have ignored the significant returns to risk taking and the potential for economic profits (i.e., profits that are above and beyond normal returns to investing). Moreover, we have assumed that there are no inheritances or other ways that individuals can have high consumption but little or no labor. A replicating tax on labor would seem to require there be labor earnings to tax. We have also assumed that individuals within each class, poor, middle, and rich, save the same amount (or consume the same number of figs). Individuals with the same earnings, however, save different

amounts. Eliminating the tax on savings and replacing it with a higher tax on earnings will benefit individuals with a given level of earnings who save a lot at the expense of individuals with the same earnings who save little. Depending on our views about this type of redistribution, we might support an income tax. We might, for example, believe that an individual with the same earnings as others but higher wealth (because he saved more) is better off and should be taxed at a higher rate. This might be because wealth (consumption in the future) brings more utility than early consumption. It might alternatively be because wealth brings benefits independent of consumption.[33] We consider each of these complications below.

II. Risk and Profits

So far, the analysis has considered only the risk-free return to investing. Much of the return to investing, however, may be due to risk taking and to super-normal returns or economic profits. If income taxes capture these returns and consumption taxes do not, there may be reasons for taxing income that are separate from the considerations discussed above. For example, income taxes might conceivably be more

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[33]Another possibility that we suspect is in the back (or front) of the minds of many supporters of an income tax is that a consumption tax would, in reality, not end up being as progressive as an income tax. *See* Kelman, *supra* note 28 at 679. We are not sure why this would be true. If we were going to consider political outcomes, we would also have to consider the long-term reluctance of the political branches to fully tax capital income under an income tax. In any event, this consideration seems irrelevant to the comparison of ideal income and consumption taxes.

A related issue is whether it is feasible to design sufficiently progressive consumption taxes to replace income taxes. The design of tax systems is beyond the scope of this paper, which merely considers ideal tax systems. We do not, however, believe that these design issues are significant (most likely, they are entirely non-existent). See David Weisbach, The (Non)Taxation of Risk (2005) (unpublished manuscript, on file with authors) for a discussion comparing the design of income and consumption taxes.

fair than consumption taxes by taxing those lucky enough to win when making risky investments.

The standard result in the literature, however, is that flat rate, ideal income and consumption taxes differ only by the taxation of the risk-free rate of return even in the presence of risk and profits.[34] In particular, neither tax taxes the returns to risk-bearing and both tax profits. If this is the case, the conclusions above hold without modification once we add risk and profits. Income taxes offer no additional fairness or efficiency benefits over consumption taxes by taxing risky returns or profits. That is, even with risk and profits, the only difference between income and consumption taxes is the risk-free rate of return and all of the examples above apply directly.

We refer interested readers to the many sources on the treatment of risk and profits in ideal income and consumption taxes and do not repeat the arguments in detail here.[35] Because it is necessary to our discussion of graduated rates on capital income immediately below, however, we illustrate the arguments briefly. Suppose that a taxpayer makes a bet with a 50% chance of winning $100 and a 50% chance of losing $100. If, under an income tax, winnings and losings are both taxed at a 30% rate (losses being deducted at that rate), the bet is reduced from a $100 bet to a $70 bet. If the taxpayer wins $100, he keeps $70 after paying taxes. If he loses $100, he gets the benefit of the $100 deduction, reducing his after-tax losses to $70. The taxpayer, however, can increase the size of the bet so that after-taxes, it is a $100 bet. In particular, if the taxpayer increases the size of his bet by 1/(1-t) where t is the tax rate, he restores his pre-tax position. With our numbers, the taxpayer make a $143 bet, which produces winnings and losings of $100

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[34] Warren, *supra* note 1.

[35] *See* Warren (1996); Kaplow (1994); Weisbach, *supra* note 32.

after taxes.[36] In our existing and very complicated tax system, individuals may not be able to do this because of rules such as loss limitations and the like, but in an ideal income tax, the argument is straightforward, and here we are comparing ideal systems.

This analysis does not necessarily hold if investments are taxed at increasing marginal rates, and it is this issue which we focus on here. The ideal income tax base does not require any particular rate structure: it may be either graduated or flat. The same is true with respect the ideal consumption tax base. As noted, the two taxes differ in their treatment of investment income and our comparisons thus far have assumed that under an income tax, investment income is taxed at a flat rate. The tax on investment income disproportionately burdens high wage earners, not because that income itself is taxed at a progressive rate but because high wage-earners save more and have more of that income. The assumption that the income tax on investment income is flat is supported by many provisions of current law, but is obviously contradicted by other provisions.[37] An alternative assumption is that under an income tax, investment income should be taxed under a graduated rate structure, usually assumed to be increasing marginal rates. In that case, as investment income grows, the rate at which it is taxed increases.

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[36]The same holds true for investments (as opposed to the pure pet illustrated above) with risky returns. Individuals can increase the their investments by 1/(1-t) by borrowing.

[37]The current rate structure is progressive, on capital as well as other sources of income, so that, over certain ranges, additional income is taxed at higher rates. On the other hand, many individuals are already at the maximum rates and so will face a flat rate on investment income; this is particularly true with respect to investments that produce dividend income and capital gain, where the maximum rate is reached at relatively low levels of income. Many corporate investors are also in the maximum rate with respect to investments.

There is very little, if any, literature, analyzing the effects of taxing capital income at graduated rates. The literature on optimal progressivity analyzes only wage taxes.[38] Arguments in favor of an income tax because of the distributive effect of taxing capital income are not explicit about the rate structure to be imposed on capital income and usually discuss progressivity arising solely because of the fact of taxing capital income.[39] Given the lack of prior analysis of the issue and the complexity of the problem, we limit ourselves to two points. First, we argue that the issue is orthogonal to the choice between income and consumption taxes because both types of taxes can equally impose graduated rates on the returns to risk taking and profits. Second, we will offer some preliminary analysis of the effects of imposing graduated rates on capital income and conclude that it is unlikely to be desirable. Our views on the second point are preliminary but the first point alone should be sufficient for purposes of this paper.

To see that the issue is unrelated to the choice between income and consumption taxes, consider first, the treatment of the riskless return under a rate structure with increasing marginal rates. The total tax on investment income is now comprised of a pure time value of money tax and a supplemental tax due to the rate increase. The result is a higher and more inefficient tax on capital income, as can be seen using the same replicating tax argument made above.

For example, a wage-earner in the 50% bracket who realizes $50 of interest income on a $1000 investment finds her return reduced to

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[38] *See* Mirrlees 1971. Moreover, the problem of graduated rates on capital income is distinct from that with respect to labor income so we cannot apply intuitions from that literature to capital income. The optimal labor income tax problem is centered on creating taxes that cause individuals to reveal their true wage rates. The problem is one of mechanism design. The problem of the optimal rate structure on capital income can be seen as an insurance problem, reducing the harms of losing risky bets.

[39] *See, e.g.*, GRAVELLE, *supra* note 2; GRUBER, *supra* note 15.

$25. If the investment income is taxed under a progressive rate structure and pushes the individual to a 60% bracket, the return is reduced to $20. A replicating consumption tax can achieve the same distributional effect without reducing the return to capital. Therefore, as in the main case above, replacing the income tax with one of these taxes will increase welfare without affecting the distribution of the tax burden among different wage or consumption classes. Indeed, since the tax on capital has now risen, the relative desirability of those forms of consumption tax increases.[40]

The only possible argument, therefore, for a graduated tax on capital income is with respect to risky returns. Both income and consumption taxes, however, can equally use graduated taxes on risky returns. To see this, we have to examine in more detail the methods of implementing income and consumption taxes. Start with a flat-rate "cash flow" tax. Consumption in a period is equal to net receipts for the period less any amount saved – it is income minus net savings. This means that a cash flow system is a consumption tax. That is, the difference between an income tax and a consumption tax can be thought of as the method of basis recovery. In an income tax, investments get basis, which is offset against receipts. In a cash flow system, investments are deducted right away. The difference, recovering the cost of a investment over time (through a basis account) or right away is merely the time value of money difference. We can alternatively implement a consumption tax by giving taxpayers basis with the same present value as an immediate deduction. In particular, we can, like in an income tax, give taxpayers basis but then increase it in each period for the time value of money.

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[40]Those forms of tax also have the added advantage of measuring wealth on an ex ante basis, so as to levy equal present value taxes on equal present value wealth. From this perspective, giving up the progressivity-related tax increase should is not troublesome, because, in applying that tax, wealth has been mismeasured. The wage-earner who, presented with a choice of saving or spending, chooses to save is not wealthier and should not pay a higher tax on her future consumption. See, however, ___.

Suppose now that we impose graduated marginal rates in an income tax. We can impose the same graduation in the consumption tax just described, where taxpayers get basis that is increased in each period by the time value of money. The two systems will impose identical taxes on risky returns – the only difference between the systems would be the increase in basis in the consumption tax for the time value of money.[41] If a graduated tax on risky returns is desirable, it can be achieved under either system.

Although our analysis is still preliminary,[42] it seems unlikely that graduated taxes on risky returns would be desirable. The motivation for such a rate structure is that risky outcomes are a matter of luck rather than effort, and it is appropriate to reduce or eliminate differences in outcomes due purely to good and bad luck.[43]

An analysis of whether or how to reduce differences in lucky outcomes must begin by asking why we have these differences. If individuals are optimally diversified, there should be no such differences – everyone would have the same portfolio. Individuals may not be fully diversified for a variety of reasons. They might, for example, hold a concentrated ownership in a small business that they cannot sell at a fair price because of a lemons market or adverse selection. Alternatively, they might hold a concentrated ownership in a business because of moral

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[41]The idea of a consumption tax with graduated marginal rates on risky returns is not new. **McCaffery 2005** advocates for a consumption tax of this sort.

[42]Our analysis does not, for example, consider revenue constraints and general equilibrium effects. A more complete analysis would likely be based on the optimal insurance contract literature because the social goal in this case would be very much like the goals of private insurance contracts.

[43]*See* AMARTYA SEN, COLLECTIVE CHOICE AND SOCIAL WELFARE (1970); **Peter Diamond, *Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparison of Utility: Comment*, 75 J. POL. ECON 765 (1967); Harsanyi [1953; 312-314]**.

hazard problems. That is, it might be efficient to hold a concentrated position to improve incentives. If the problem is adverse selection, government provided reduction in risk might be optimal but if the problem is moral hazard, it would not. Other individuals might not be diversified because of transactions costs, in which case we might ask whether the additional risk reduction provided through the tax system has lower transactions costs that the additional risk reduction available in the market.

Suppose that we conclude that, on balance, it is desirable to reduce differences in outcomes due to luck. It is not clear, in such a case, that increasing graduated rates would be desirable. Consider as a baseline, the case where there are no behavioral responses to the tax system and, therefore, we want to entirely eliminate differences due solely to luck. To have a concrete example, suppose two identical individuals each have $100 which they invest in a risky asset. Suppose that the asset will pay either $120 or $90 with equal probability. To keep the example simple, suppose that the payoff is instantaneous.

To eliminate differences in outcomes, we would give each individual the expected value of the bet, or $105. The tax structure that would achieve this has *decreasing* marginal rates. The loser would have to be able to deduct his loss at a rate of 150% and the winner would pay taxes on his gains of 75%.[44] The intuition for this result is that if one loses money, higher tax rates are better.[45]

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[44]An alternative rate structure that gives the same result would be a 100% tax on all returns and a demogrant of $15 to each individual. This, however, is a flat structure, not an increasing marginal rate structure.

[45]Consider loss limitations. They create increasing marginal rates because losers, facing disallowance of loss deductions, effectively face a marginal rate of zero. Winners face a positive marginal rate. Loss restrictions are thought to hurt losers, illustrating that high rather than low marginal rates on those who lose bets may be more desirable.

The analysis is more complex once we allow behavioral changes and, therefore, must consider efficiency effects. Complete elimination of differences in this case is unlikely to be optimal because it would effect incentives to take risk. Moreover, portfolio shifts in response to the tax on risk can have counter-intuitive effects.

Consider the same bet, a $100 bet that pays either $120 or $90 and suppose that we are considering imposing three different rate structures: a flat 50% rate, increasing marginal rates of 40% and 60%, and decreasing marginal rates of 60% and 40%. We know with a flat rate structure of 50%, we can think of individuals as borrowing and doubling their bets to $200. After paying taxes and paying back the loan, they will be left in the same position as if there were no-tax, having either $90 or $120. A flat rate structure does not reduce differences in outcomes due to risk.

Suppose we impose increasing marginal rates. Individuals making the bet will not know the rate at which the payoff will be taxed, so they will not know how to adjust their portfolios. There are any number of possibilities, but consider three. First, they may adjust their portfolio using the tax rate on losses or 40%. Winners would find that they had not increased their bets enough to offset the 60% tax on their winnings and would be left with only $113 after all is said and done.[46] Losers would have correctly adjusted their portfolio and would be left with $90. In this case, the tax has reduced the difference in outcomes.

Second, they may adjust their portfolios based on the gain rate, or 60%. Winners, in this case, would have made the correct adjustment and be left with $120. Losers, however, would have adjusted their portfolios counting on deducting losses at 60% but only be able to deduct them at

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[46]They increase their bet by 1/(1-t) or 166.67% in our case. If they win, the $166.67 turns into $200. They have gain of $33.33 and pay taxes of $20. After paying taxes and paying back $66.67, they are left with $113.

40%. Having increased the size of a losing bet and then not getting to deduct the loss at the higher tax rate, they would be worse off than without taxes, ending up with only $85.[47] Increasing marginal rates, in this case would increase differences in outcomes, the opposite of the desired effect. Finally, they may adjust somewhere in the middle, say at 50%. In this case, winners end up with only $116, worse off by $4. Losers, however, also worse off than without taxes, losing $2 and ending up with $88. A flat rate structure Pareto dominates this case. Note, however, that the various cases leave the government with a different amount of money ($7 in the case of adjustments to a 60% rate, $5 for a 40% rate, and $6 for a 50% rate). To make them comparable we would have to adjust the rate structure or refund some of the tax revenue. Nevertheless, the analysis gives a basic indication of the likely directions of the effects.

The result is the opposite with decreasing marginal rates. If they adjust to the gain rate, there is a reduction in the difference in outcomes while if they adjust to the loss rate, there is an increase. If they adjust to the average, both are better off but the winner gains more than the loser.[48]

These initial results do not support increasing marginal rates on capital income. There will be clear efficiency losses but the distributive gains are uncertain. The exact nature of the distributive gains (or possibly losses) from increasing marginal rates depend on portfolio adjustments that are the product of factors that are difficult to predict.

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[47]They increase their bet to $250. They lose money, ending up with only $225. Having lost $25 on their bet, the deduct it and get a tax benefit of 40% of that loss, or $10. After paying back $150, they are left with $85.

[48]The numbers are as follows. If they adjust to the gain rate, the outcome is $120/93. If they adjust to the loss rate, the outcome is $130/$90. If they adjust to the average, the outcome is $124/$92.

III. Wealth without Labor Income

An important motivation for an income tax is to tax the idle rich. An income tax is thought to tax their wealth in ways that a consumption tax cannot. To translate this to our argument, we show that the distributive effects of an income tax can be replicated with a tax on labor income. The procedure we used above was is to increase the tax on labor income by the amount each individuals bears of the tax on the commodity. To make this adjustment in the manner demonstrated, individuals must have labor income to be taxed. The idle rich, however, appear to have little or no labor income, making the envisioned adjustment problematic. For a wealthy retiree, or a trust-fund baby, eliminating the tax on savings and replacing it with a more progressive wage tax would seem to be manna from heaven. Both benefit from the elimination of tax on investment income and neither have significant amounts of wage income. Similarly, Bill Gates pays himself a very small salary. Instead, he takes most of his earnings as capital gains on the sale of Microsoft stock. There is no adjustment to the wage tax that would offset the benefits to Gates of eliminating the tax on capital. We will argue that these sort of examples are misleading and the intuition behind the examples wrong. If the consumption/wage tax is properly structured and understood, these examples pose no problems for the AS 1976 analysis.

The solution lies in the distinction between a wage tax and a consumption tax. So far we have been treating them as identical and most often using the term wage tax for both. As noted, however, there are important differences and the problems highlighted above are problems with wage taxes, not consumption taxes. By using a properly structured "replicating consumption tax," we can eliminate the problems of apparent wealth without labor income.

To see the difference, compare a flat rate wage tax and a flat rate retail sales tax on all goods and services (a consumption tax). The wage tax is imposed when wages are earned. There is no further tax down the road when the earnings are used to purchase consumption. A retail sales tax is not imposed when wages are earned. Instead, taxes are imposed only when the individual purchases consumption goods, often many years after the wages are earned. One might say loosely that a wage tax is ex ante while a retail sales tax is ex post. In fact, most consumption taxes are largely ex post – they are imposed when consumption goods are purchased.

Consider the individual who has substantial labor income that is incorrectly labeled as capital income. This is the Bill Gates problem. He did not make a big investment in Microsoft. Instead, most of his net worth comes from his labor. Nevertheless, most of his income appears to come from capital – in the form of dividends or stock sales. A wage tax will not pick up this income. An ex post consumption tax, however, will tax this income to the extent it is really attributable to his labor. The reason is that a consumption tax ignores the labels put on earnings because the tax is not imposed directly on earnings. Instead, a tax is imposed when the earnings are spent and the source of the earnings is irrelevant. Therefore, to the extent that Gates's stock value reflects his labor income, it is taxed under a properly structured consumption tax.[49] The hidden labor problem can readily be solved.

The wealthy retiree problem can also be solved with an ex post consumption tax. She benefits from the elimination of tax on capital but we cannot go back and levy a more progressive tax on her wages. Under an ex post consumption tax, we tax her consumption when it occurs.

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[49]One way to conceptualize this is that under a cash flow consumption tax, Gates gets no deduction for his labor effort so to the extent gains on his stock are due to labor effort, there was no earlier deduction for an investment that offsets that tax on the sale.

The retiree problem is really one of transition to a consumption tax. Had a consumption tax been imposed all along, there would be no issue. Either the retiree would have paid a progressive wage tax when she earned the money, or she would have not paid any tax on wages that were used to fund deferred consumption until the time of that consumption, and then would be taxed on that consumption. The retiree problem comes about because the retirees earned and saved under an income tax. There is a large literature discussing this transition issue. Instead of reviewing that literature, we make three points.

First, the comparison between the ideal forms of an income tax and a consumption tax should be made as if each had always been in place. The goal is to find out which system is more desirable. If we assume that one system or the other is already in place, it biases the argument toward the status quo because transition in either direction (from income to consumption or consumption to income) is likely to be difficult. Rather than assume a status quo, we should instead determine which base is preferable writing from a blank slate.[50] If it turns out one base is preferable but we currently use the other base, we can then determine whether the transition costs are worth the benefit, but the first task is to determine which is preferable. Said another way, it is quite a different thing to believe that an income tax is desirable than to believe that a consumption tax is desirable but we face a serious transition problem. Research agendas would shift from determining how to perfect the income tax to how to transition out of it.

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[50]In fact, it would be a bad idea even if we were to assume a status quo to assume that it is the income tax. Although the U.S. federal government currently relies to some extent on a version of an income tax, it also relies significantly on a wage tax. Moreover, other governments, states and foreign, rely heavily on consumption taxes. An answer that income taxes are more desirable would raise the issue of transition from a consumption tax to an income tax.

Second, it is not clear that the presence of retiree wealth makes a transition to a consumption tax more or less desirable. Consider, for example, the adoption of an ex post consumption tax such as a retail sales tax. Because retirees have already been taxed on the wages and investment income that produced their current wealth, it might seem unfair to tax that wealth when consumed. On the other hand, taxation of retiree consumption might produce efficiency gains that could be used to fund lower overall rates.[51]

Finally, the transition problem is not inherent to the choice between a consumption tax and a wage tax. Instead, it is one of the effects of switching between different methods of collecting tax.[52]

The case of the trust-fund baby is roughly parallel to that of the retiree. Under an ex post consumption tax, we can get at her wealth when it is consumed. Fundamentally, though, the problem is one of transition. Had a progressive wage-tax been in place when the money used to fund the trust was earned, her donor would have had less to invest, and the trust-fund baby would have less to now spend. In that event, the tax due from her trust would have been "pre-paid" by the donor.[53] Alternatively,

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[51]The efficiency gains would come about because the retirees had already worked and saved and therefore an extra level of tax on their wealth would not distort their behavior. In contrast, known ex ante (such as a wage or consumption tax after transition) would affect work effort and so produce efficiency costs. However, some or all (or more than all) of these gains might be lost if the imposition of the extra tax caused taxpayers in the future to worry that the government might similarly impose an extra tax on their work effort, as well. There might be additional efficiency losses if the extra tax was anticipated because holders of soon-to-be-taxed wealth could avoid the tax by consuming .

[52]*See* DANIEL SHAVIRO, WHEN RULES CHANGE (2000) for an extensive discussion.

[53]If the rate structure is progressive, then the tax paid under a progressive wage tax may be greater or less than the tax paid under an ex post consumption tax, since the taxes will be paid by different persons in different years subject (perhaps) to different

had an ex post consumption tax been in place when the money was earned, the donor would not have been taxed on the wages that were used to fund the trust, and the income from the investment would be taxed at the time of consumption.

IV. Savings Heterogeneity

We have so far assumed that individuals within the same wage class save the same amounts. If this is true, the tax on the return to savings is merely a poor substitute for a tax on earnings. With no heterogeneity in savings decisions, a tax on savings is by assumption the same as a tax on earnings. Thus, in our running example, each class, rich, middle, and poor, was entirely homogeneous – each individual in each of the classes consumed the same number of figs or saved the same amount. A tax on earnings, therefore, could replicate the tax on savings.

Earnings or ability classes, however, are likely to include individuals with different propensities to save, with some individuals being savers and some spenders (or any range in between). When there is heterogeneity in savings, the replicating wage tax will only be able to replicate the tax on savings on average for each wage class. Within each class, switching tax systems will redistribute from spenders to savers. The merits of this type of redistribution (or the reverse) is precisely the focus of the some of the literature on consumption taxation and, thus, we must face directly the arguments made in that literature.

We can illustrate the issue using our running example. Suppose that there are two rich individuals rather than one and they differ in their taste for figs. One of the rich consumes $30,000 of figs and the other consumes only $20,000 (both tax inclusive). On average, they consume $25,000 of figs, as in the example. If the tax adjustment is made as

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rates.

specified in the example, so that the total labor tax is $62,500, the two rich individuals are, on average indifferent. On average, they pay $62,500 under the wage/fig tax and $62,500 under the more progressive wage tax. If we consider ability classes as a whole, we can replicate the distributive effects of a tax on figs with a more progressive tax on earnings.

Within the class of the rich, however, the two individuals are not indifferent. Under the wage/fig tax, the individual who consumes $30,000 of figs paid $50,000 in labor taxes and $15,000 in fig taxes, adding to a total of $65,000. The individual who consumed $20,000 in figs had total taxes of $60,000. Under the more progressive wage tax, they both pay $62,500 in taxes. The individual who favored figs is better off by $2,500 and the individual who favored prunes is worse off by $2,500. (Conversely, if the tax adjustment were made in the opposite direction, from wage tax to wage/fig tax, the redistribution would be in the opposite direction.) The substitution of the more progressive wage tax for the labor/fig tax redistributes within the class of rich individuals (even though it does not redistribute among different classes of individuals). The same would be true for any class of individuals where there is heterogeneity within the class. Given that such heterogeneity is likely a fact of life, we must ask whether redistribution from spenders or savers or savers to spenders is desirable.

Proponents of income taxes argue that redistribution from savers to spenders is desirable because savers are systematically better off than spenders. One prominent reason, associated with Warren 1980, is that even though in present value terms, their consumption is the same, savers have more total consumption than spenders and, therefore, are better off. A second argument, not made in the tax literature but often made in the behavioral economics literature, is that many individuals systematically save too little and would be better off if they saved more. We explore these arguments below, starting first with an attempt to set forth the appropriate grounds of the debate and the basic argument against

redistributing from savers to spenders. In Section V, we consider the argument that savings has value above and beyond the future consumption it brings, such as security and power, and that we need an income tax to tax this imputed income from savings.[54]

Before turning to the analysis, it is worth emphasizing two key points made in the sections above. First, the only redistribution we need worry about is the redistribution within a wage class. A common objection to a consumption tax is that it redistributes from one wage class to another. The rich save more than the poor and eliminating the tax on the return to saving benefits the rich. This is the luxury tax argument highlighted above. The comparison when making the luxury tax argument is between a $400,000 per year lawyer and a $20,000 per year janitor. A tax on savings has the effect of a luxury tax, since the wealthy disproportionately save, and eliminating that tax benefits the wealthy at the expense of the poor. Thus, a consumption tax increases the burden on the janitors and lessens the burden of the lawyers – or so it is argued. As discussed above, a consumption tax can be designed to avoid the entire force of this argument. The sum of wage and savings taxes on each wage class can be replicated with a wage tax. Thus, there is no net redistribution from one wage class to another. We do find intraclass redistribution: the burden of the $400,000 per year wage earner who spends rises relative to the $400,000 per year wage earner who saves; the burden of the $20,000 per year wager earner who spends rises relative to burden of the $20,000 per year wage earner who saves. It is the desirability of this change in relative tax burden that we discuss below.

Second, the intraclass redistribution stems only from the treatment of the risk-free return to savings. The consumption tax is often opposed on the grounds that by not taxing the return to investment

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[54]There is a fourth possibility, which is that savings is an indicator of ability. This possibility is discussed in Part VI below.

it ignores the morally relevant difference between winners and losers, investments that pay off and investments that do not. As Michael Graetz said, "lucky gamblers are not the same as unlucky gamblers."[55] Warren makes the same point: "if A and B nave identical expectations about their financial futures but A's hopes are dashed while B's wildest dreams are realized, should not a fair tax system take into account the differences in outcome?"[56]

Whatever the merits of treating winners and losers differently, they have nothing to say about the choice between an income tax and a consumption tax. As noted, both treat returns to risk the same way. If they tax capital at a flat rate, neither taxes the winners nor helping the losers. If it is desirable to tax risk using graduated rates, both income and consumption taxes can do so equally. In practice, either one might deviate from this treatment, but there is no reason to believe that one tax base systematically performs differently than the other in this regard.[57]

Given these two points, we can turn to the analysis of whether savings heterogeneity supports an income tax. We begin with case of rational savings decisions and then turn to savings myopia and other irrationalities.

A. *Rational Savings Decisions*

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[55] Michael Graetz, *Implementing a Progressive Consumption Tax*, 92 HARV. L. REV. 1575, 1601 (1979).

[56] Warren, *supra* note 1.

[57] Warren argues that the claim that income taxes do not tax risky returns relies on an *ex ante* perspective. *Id.* at 1105. This argument is incorrect. An individual's consumption is the same *in each period* under a Haig-Simons tax and a tax only on the risk-free return. *See* Kaplow, *supra* note 2.

Under standard assumptions, individuals make reasonable consumption choices, such as whether to consume prunes or figs, chocolate or vanilla, or in the present or the future. Under these assumptions, a consumption tax is preferable to an income tax. As usual, we compare the efficiency and distributive consequences of the two systems. We can no longer use the Pareto criteria because the spender may be worse off when we switch to the replicating wage tax. Nevertheless, equalizing the tax rates on labor income – by eliminating the indirect tax on labor income due to the tax on savings – produces welfare gains.

Consider, again, the effect of the replicating wage tax on the Rich in our example. The tax rate on the Rich saver goes down from 65% to 62.5% and the tax rate on the spender goes up from 60% to 62.5%. The efficiency gain from reducing the tax rate on labor income for savers would be greater than the losses from increasing the tax rate on spenders because efficiency losses increase with the square of the tax rate. The efficiency gains are similar to the types of gains achieved from reducing the level of rate graduation. Moreover, there is the additional efficiency gain that is the primary subject of this article – the gain from eliminating the distortion in consumption choices, between current consumption and deferred consumption.

There is no reason to sacrifice these efficiency gains to redistribute from savers to spenders. Although individual circumstances differ, as a general matter individuals with the same wages or earnings ability can choose to spend or save, much like they can choose to consume prunes or figs. The interest rate determines the relative prices of future and present consumption just like various factors determine the relative prices of prunes and figs. Given these prices, there is no reason to assume that individuals who choose one or the other, prunes or figs, present or future, are systematically better off. Indeed, if spenders and savers are equally well off when the return to savings is not taxed, an income tax has worse distributive consequences than a consumption tax

because it makes them unequal after-tax. Therefore, a consumption tax remains more efficient than an income tax and, even taking into account savings heterogeneity, has equally good, and perhaps better, distributive effects.

The analysis above was implicitly ex ante. It assumed that we could compare to individuals with different savings by looking the initial positions, discounting their savings to present value. Warren has argued that we should analyze the effects of savings decisions (and taxes) from an ex post perspective rather than an ex ante perspective.[58] The argument is that ex post, the saver has more total consumption than the spender and is thus better off. It is one thing, argues Warren, to use present value to discount future consumption as against present consumption, and quite another to use the same discount rate to match present consumption as against past consumption. The fact that this latter form of discounting seems inappropriate or odd casts doubt upon the use of present value concepts that underlay many consumption tax arguments. With characteristic economy and rhetorical flourish, Warren manages to build his argument into a single sentence: "It is not at all obvious that consumption of a bottle of fine wine 30 years ago is, in any meaningful sense, equivalent to consumption of several cases today."

Once we recognize that the only difference between an income tax and a consumption tax is the taxation of the risk-free return to savings, however, the difference between an ex ante perspective and an ex post perspective evaporates. All the information known ex post is known ex ante so any decision about who is better off can be made at

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[58] Warren, *supra* note 1.

either point in time.[59] Therefore, it cannot be the case that fairness depends on one perspective or another.

Moreover, even from an ex post perspective, if we assume, as we are so far, that individuals made reasonable savings decisions, there would be no reason to believe that individuals who chose the wine 30 years ago over several cases today are worse off. As long as the two choices are available (and recall that we are discussing individuals of the same ability or earnings class who by assumption make reasonable choices), we have no reason to think one or the other is better off.

Nevertheless, Warren's hypothetical creates a powerful intuitive argument against discounting. We suspect the power of Warren's hypothetical, however, lies not in the perspective from which one discounts but from the startlingly high discount rate used in his example. The equivalence of one bottle to two-and-a-half (the midpoint of "several") cases implies an inflation-adjusted discount rate of approximately 12%. The riskless interest rate is generally estimated at around 1.5%.[60] At that more realistic rate, the equivalent trade off would be a bottle of wine thirty years ago and about a bottle and a half of wine today. The individual who consumes several cases of wine today seems better off than the individual who consumed a single bottle thirty years

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[59]The arguments in the philosophical or political economics literature in favor of an ex post perspective uniformly rely on risk. *See, e.g.*, SEN, *supra* note 42. Where there is no risk, these arguments do not apply.

[60]*See* Reed Shuldiner, *Taxation and Risk* (draft 2004, on file with the authors). Warren was writing in 1980 when inflation was very high, which might justify the high discount rate. In this example, however, since we are dealing with goods, rather than money, we can ignore the inflation rate. Any inflation-related change in the price of wine is already built into the example.

ago because, in market terms, and from the perspective of all but those with the highest internal discount rates, he is.[61]

Consider an equally stylized, but somewhat more realistic example. A, B, and C each save $10,000 from a summer job in their last year at college. A decides to use the money to pay for a European trip she takes with her significant other. The two stay in youth hostels and eat at cheap cafes. B saves his money and takes a similar trip with his wife ten years later. They stay in two star hotels and eat at two star restaurants. C saves her money at takes a similar trip with her significant other thirty years later. They stay in three star hotels and eat at three star restaurants.

Our hypothetical also assumes a high discount rate (although not as extreme a discount rate as Warren's). One cannot invest at the riskless interest rate and upgrade from a youth hostel today to a three star hotel in 30 years. We have, in this respect, built our hypothetical to make the consumption pattern favored by the saver, C, look better. Nonetheless, we have no intuition as to whether C has higher welfare than A. A has had her pleasure earlier, and another 30 years in which to enjoy the memories of her trip; C has higher explicit consumption, and perhaps has had years of pleasure anticipating her trip. More importantly, however, is that if A, B, and C each had the ability to choose when to take their trip, we cannot say that one is better off than the other, even if our own preferences happen to match one of their choices. As

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[61]The selection of wine as a consumption good raises other problems, though perhaps not ones that directly affect the hypothetical. Wine is an acquired taste that times to experience and appreciate. As one develops a nose for wine, each subsequent bottle becomes more satisfying, so that the first bottle contributes to the enjoyment from later bottles. ***See*, Samuelson (1952) "the amount of wine I drink yesterday and will drink tomorrow can be expected to have effects upon my today's indifference slope between wine and milk."**

long as they make reasonable choices, the fact that their preferences differ should not cause us to believe one is better off than the other.

We conclude from this analysis that arguments in favor of an income tax based on savings heterogeneity must rely on a belief that individuals do not make good savings decisions. Virtually all developed societies have massive programs, such as social security programs, based in part on savings myopia, and it is possible that an income tax can be similarly justified. In the next section, we analyze these arguments.

B. *Savings Myopia and Similar Problems*

An income tax, as discussed, can be thought of as a uniform tax on labor plus a tax on savings and equivalent subsidy on spending. (This is the "renormalization" discussed in Section I.) If individuals systematically make bad savings/spending decisions, the tax and subsidy on savings and spending might be justified even if it would not be in the case of say, figs and prunes. We review this argument here. We begin with a brief overview of the literature on savings decisions and then discuss whether problems with savings decisions, can be used to support an income tax.

1. Experimental studies

The subject of intertemporal choice has generated a great deal of literature, much of it in the relatively new fields of behavioral economics or decision theory. Researchers in these fields commonly use controlled experiments, with college students as paid subjects, to gain insight into the determinants of consumption patterns. For example, an experiment might ask subjects how much they would pay or would have to be paid to move up or back the delivery date of a consumer durable,[62]

[62]Loewenstein (1988).

or how they would like to schedule a few free meals at a favorite French restaurant.[63]

One persistent experimental result is that the decisions subjects make reveal extraordinarily high short-term discount rates. In one early study, subjects were asked how much they would need to be paid in the future to forgo $15 today; the results implied short-term discount rates well over 100%.[64] These results have been replicated in a variety of later experiments.[65] Discount rates fall with time, however, and are much lower and virtually constant after the first year.[66] The declining rate of time preference is commonly described as hyperbolic discounting. Moreover, the high short-term discount rates fall dramatically as the amount at stake increases.[67]

While hyperbolic discounting seems evidence that some individuals will spend more than is rational – or at least more than would

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[63]Loewenstein and Prelec 1992.

[64]Richard H. Thaler, *Some Empirical Evidence on Dynamic Inconsistency*, 8 ECON. LETTERS 201 (1981).

[65]*See* Uri Benzion, Amnon Rapoport & Joseph Yagil, *Discount Rates Inferred from Decisions: An Experimental Study*, 35 MGMT. SCI. 270 (1989); Gretchen B. Chapman, *Temporal Discounting and Utility for Health and Money*, 22 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY AND COGNITION, 77 (1996); Daniel A. Redelmeir & Daniel N. Heller, *Time Preference in Medical Decision Making and Cost Effectiveness Analysis*, 13 MEDICAL DECISION MAKING 212 (1993). *See generally*, Shane Frederic, George Loewenstein & Ted O'Donoghue, *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LITERATURE 351 (2002).

[66]Frederic, Loewenstein & O'Donoghue, *supra* note 68.

[67]*See* George Ainslie & Nick Haslam, *Hyperbolic Discounting*, *in* CHOICE AND TIME (George Loewenstein & Jon Elester eds., 1992); Leonard Green, Joel Myerson & Edward McFadden, *Rate of temporal discounting decreases with amount of reward*, 25 MEMORY & COGNITION 715 (1997).

be expected under standard discount utility theory – other experimental results point in the opposite direction. For example, most subjects prefer an improving sequence of consumption even if this means deferring present consumption with no interest: $10 today and $12 next year is preferred over $12 today and $10 next year.[68] Thus, improving wage profiles are preferred over wage profiles that start high and decline and provide higher present value consumption.[69]

These and other results are sensitive to the construction or framing of the experiment.[70] Some of the more startling anomalies can be explained in a manner consistent with rational decision-making. For example, high discount rates may reflect the subjects' perception of the risk associated with deferred consumption.[71] A preference for rising consumption may conflict with standard discount utility theory but is consistent with the so-called "new hedonics" literature, which shows (or purports to show) that perceived welfare is affected not just by the absolute level of consumption but by the pattern of consumption.[72]

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[68]Frederic, Loewenstein & O'Donoghue, *supra* note 68..

[69]George Loewenstein & Nachum Sicherman, *Do workers prefer increasing wage profiles?* 9 J. LAB. ECON. 67 (1991); Christopher K. Hsee, Robert P. Abelson & Peter Salovey, *The relative weighting of position and velocity in satisfaction*, 2 PSYCHOL. SCI. 263 (1991).

[70]For example, one study shows the discount rate is sensitive to the number of periods in which a given unit of time is partitioned. Subjects show higher discount rates if they are asked to discount consumption on a month-by-month basis than if they are asked to discount consumption on an annual basis. *See* Daniel Reed, *Is Time Discounting Hyperbolic or Subadditive?*, 23 J. RISK AND UNCERTAINTY 5 (2001).

[71]Frederic, Loewenstein & O'Donoghue, *supra* note 68.

[72]**Footnote missing.**

2. Retirement Savings and other Intertemporal Consumption Decisions

Economists have attempted to measure discount rates by looking at how individuals respond to choices involving temporal tradeoffs. Many of these studies involve choices in which the discount rate may be confounded by a lack of information. In this category are studies that show individuals are unwilling to pay extra for energy saving appliances or willing to trade in annuities for lump-sum payments with lower present value (suggesting high discount rates) or that individuals are willing to expose themselves to increased risks tomorrow for higher pay today (suggesting discount rates the authors deem "reasonable").[73]

A significant body of recent look examines the adequacy of retirement savings. A number of economists have concluded that many lower income individuals in particular save too little.[74] Evidence for this

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[73]*See* Jerry Hausman, *Individual Discount Rates and the Purchase and Utilization of Energy Using Durables*, 10 BELL J. ECON. 33 (1979); H. Ruderman, M.D. Levine & J.E. McMahon, *The Behavior of the Market for Energy Efficiency in Residential Appliances Including Heating and Cooling Equipment*, 8 ENERGY J. 101 (1987); Michael J. Moore & W. Kip Viscusi, *Models for Estimating Discount Rates for Long-term Health Risks Using Labor Market Data*, 3 J. RISK AND UNCERTAINTY 381 (1990); W. Kip Viscusi & Michael J. Moore, *Rates of Time Preference and Valuation of the Duration of Life*, 38 J. PUB. ECON. 297 (1989); John T. Warner & Saul Pleeter, *The Personal Discount Rate: Evidence from Military Downsizing Programs*, 91 AM. ECON. REV. 33 (2001) (service personnel offering choice of lump-sum payment or annuity that offered an implicit 17.5% rate of return and more than three-quarters of enlisted personnel and half the officers selected a lump-sum payment). *But see* Emily Lawrence, *Poverty and the Rate of Time Preference: Evidence from Panel Data*, 119 J. POL. ECON. 54 (1991) (discount rates between 4% and 13%).

[74]*See, e.g.*, Steven F. Venti, *Choice, Behavior, and Retirement Savings* (December 2004), *available at* http://www.dartmouth.edu/~bventi/Papers/venti_savings_12-04.pdf. (On the whole, the research indicates that a substantial proportion, and perhaps most, households in the U.S. fail to save "enough" income for retirement.)

position includes savings behavior consistent with hyperbolic discount rates;[75] survey results that show many Americans wished they'd saved more;[76] lack of knowledge and reliance on faulty heuristics in making savings decisions.[77] Other researchers have concluded the savings decision of the poor are rational.[78] One recent study found evidence of both over and undersaving.[79]

A recent survey of the literature on this subject concluded that the savings behavior of the upcoming group of baby boomer retirees is comparable to that of earlier generations and that, due to increased wealth, fewer members of the this generation will fall below the poverty line.[80] On the other hand, the study also concluded that some segment of

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[75] ***See, e.g.*, Karen E. Dynan, Jonathon Skinner & Stephen P. Zeldes, *Do the Rich Save More?*, 122 J.POL. ECON. 397, at 416 (2004) (behavior of poor consistent with hyperbolic discount rate).**

[76] *See* Employee Benefit Research Institute, 2004. The 2004 Retirement Confidence Survey Summary of Findings. EBRI. Washington D.C.; James Choi, Brigitte Madrian, Andrew Metrick & David Laibson. *For Better or for Worse: Default Effects and 401(k) Savings Behavior, in* PROSPECTIVES IN THE ECON. OF AGING 2004 (David Wise ed.). *See generally*, the discussion of this issue in Venti, *supra* note 56.

[77] ***See Id.* at 4-6.**

[78] *See* R. Glenn Hubbard, Jonathon Skinner & Stephen P. Zeldes, *Precautionary Saving and Social Insurance*, 103 J. POL. ECON. 360 (1995). *See also* C.D. Carrol & A. A. Samwick, *The nature of precautionary wealth*, J. MONETARY ECON. 40, 41 (1997) (savings of poor consistent with "buffer stock" model of savings, in which consumers spend most of their life trying to maintain modest "target" wealth-income ratios and begin saving for retirement only around 50).

[79] **Missing footnote.**

[80] Baby Boomers' Retirement Prospects: An Overview, Congressional Budget Office (November 2003), *available at* http://www.cbo.gov/showdoc.cfm?index=4863&sequence=0.

the population saves too little to meet generally accepted standards of retirement adequacy.

3. *Lessons from the literature*

This review of the literature illustrates that our current understanding of savings decisions is unclear. Suppose, however, that after further study, we ultimately conclude that there is a class of individuals who make systematically bad savings decisions, or alternatively, that we are forced to make a decision now and this is our best guess. The most likely case, and the only one we will consider, is that this class of individuals systematically saves too little – they have savings myopia.[81]

An income tax, by taxing those who save and reducing the burden on these spenders, would redistribute in the right direction in this case. The benefit of this redistribution would have to be weighed against the efficiency losses created by taxing future consumption at a higher rate than present consumption. Depending on the behavioral responses and also the size and heterogeneity of the relevant groups, this redistribution may be desirable.

An income tax designed to help those with savings myopia, however, has another consequence as well: it increases the cost of saving, thus encouraging spending over saving and exacerbating the very problem it is claimed to ameliorate. That is, by lowering the price of spending relative to saving, it might cause those that spend to much to spend even that much more. It is entirely possible that these behavioral responses entirely reverse any distributional benefits.

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[81] An alternative possibility is that there is a class of individuals who systematically save too much. One might think of Japan of the 1990s or of American Depression Era Babies, both known for their extraordinarily high savings rates.

Note that this is not the normal efficiency/redistribution trade-off. In the normal case, individuals who are hurt by the redistribution (i.e., they are distributed away from) adjust their behavior to avoid the impact of the redistribution. In this case, individuals who are supposed to be helped might adjust their behavior to offset the effect of the help.

Indeed, reducing rather than increasing the tax on savings is the conventional tax response to a perceived problem that some individuals save too little. It is similar to the paternalist rationale (among other rationales) for subsidies on other goods and services, such as education and health care. Seen in this light, supporting an income tax, which encourages spending, out of solicitude for those who are made worse off by spending, is perverse. It is like noting the welfare-reducing effects of smoking and seeking to help smokers by reducing the price of cigarettes.

To the extent we are concerned about those with savings myopia, there are alternative responses to savings myopia that are likely to be superior to increasing the cost of saving. For example, mandatory savings programs such as Social Security, would not have the problem of subsidizing the very activity to be discouraged. If they are successful, they increase the welfare of the spender, thereby reducing the need for redistribution to the spender. Moreover, savers may be only minimally affected by such programs: given the fungibility of savings, they may be able to reduce spending elsewhere in their portfolios. A complete analysis of mandatory savings programs is well beyond the scope of this paper. Our only point is that an income tax may be precisely the wrong solution for solicitude for the myopic spender and that better tools may be available.

The savings myopia case for an income tax, while possible, is extremely tenuous. We would have to believe that there is a significant class of individuals with savings myopia and that making savings more, rather than less, expensive is a good way to help these individuals. Assuming that there is some benefit to these individuals, the benefit

would have to outweigh the efficiency costs (with respect to non-myopic individuals) of taxing future consumption more highly than present consumption. Finally, we would have to believe that an income tax is an appropriate instrument for helping those with savings myopia, particularly when compared with more direct solutions such as mandatory savings or savings incentives. The extent to which these conditions are met is an empirical question, and while it possible that they are met, we believe it to be unlikely.

V. Does Savings Bring Value Beyond Future Consumption?

Consumption tax opponents often argue that savers, unlike spenders, get intangible benefits from holding wealth, and that these benefits that are not captured by a consumption tax. For example, Murphy and Nagel argue:

> It should be obvious that wealth is an independent source of welfare, quite apart from the fact that some of it may be consumed later. As Henry Simons famously put it, in 1938, "In a world where capital accumulation proceeds as it does now, there is something sadly inadequate about the idea of savings as postponed consumption." Commentators typically mention such factors as security, political power, and social standing.[82]

Strictly speaking, an income tax misses these intangible benefits as well. It is argued, however, that by taxing the explicit return to savings, an income tax levies an indirect tax on these benefits. Thus, it is argued that an income tax offers a second-best way of taxing the

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[82] MURPHY & NAGEL, *supra* note 19, at 115. *See also* Treasury 1984, Vol. 1, 209 ("If accumulation of wealth has value beyond the consumption that it can buy – if it confers power, prestige, or peace of mind – then annual consumption does not measure equals.").

imputed benefits of wealth. For the reasons described below, the argument is incorrect.

First, the argument, even if true, would not raise distributional issues under the replicating consumption or wage tax proposal we outline. This is because to the extent savings are constant within wage classes, the sources of welfare or utility from savings are irrelevant for distributional purposes. Distributional equity is held constant by the consumption or wage tax. To the extent there is savings heterogeneity, untaxed intangible benefits from wealth would create distributional concerns only if we believe spenders do not maximize their own welfare, and then it is by no means clear that taxing these benefits would ameliorate, rather than exacerbate, the welfare loss caused by excessive spending. Because intangible benefits from savings are simply a subset of benefits from savings, the analysis in the previous section of this paper would extend to these forms of benefits.

The primary issue raised by the intangible-benefits-from-wealth argument is, instead, efficiency. If part of the consumption stream from savings, the intangible benefits of wealth, is untaxed, it will be tax-preferred over other forms of consumption. People might seek too much security, status, and prestige.[83] If correct, we might be concerned about these efficiency consequences.

The efficiency concerns, however, are baseless. The reason is that a consumption tax accurately captures the consumption of intangible benefits associated with savings because those benefits are a function of net after-tax consumption, rather than the gross amount of savings. A consumption tax reduces consumption and in so doing, reduces those benefits. The point is ably made by Shaviro:

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[83]Note that the most prominent recent commentator worried about individuals excessively seeking prestige, Robert Frank, proposes a consumption tax as part of his cure. **See Frank [date].**

> Why does wealth offer security, political power, and social standing? The answer must be because of its value – that is, because of what it can be used to buy. . . . savings and wealth are indeed subsidiary to consumption in that they derive their value entirely from that potential use, whether its exercise is proximate or not. That ability to buy things is, after all, the difference between real money and play money from board games such as Monopoly and Life.[84]

A consumption tax, by taxing goods purchased with savings, taxes these intangible benefits. For example, assume that the knowledge of available consumption gives a saver the sense of security because she knows that when she desires or needs something, she will have the money available. The imposition of a consumption tax reduces the amount available. This in turn reduces the security (or power or prestige) associated with the savings.

We can also argue that power and prestige likely come more from labor than from savings. To see why this may be the case, it may be useful to compare an individual with a $20 million diversified portfolio that provides explicit consumption of $2 million a year with a group of chief executive officers whose salaries provide the same explicit consumption. As noted above, to the extent the individual with the brokerage account realizes welfare from security, that welfare is a function of after-tax consumption and is effectively taxed by a consumption tax. The securities in her portfolio are unlikely to give her any power whatsoever over the companies in which she invests. Most other forms of wealth-related power seem a function of after-tax consumption rather than before-tax savings. The power over perspective beneficiaries, for example, is ultimately a function of the amount of (after-tax) consumption any gifts might fund. Political power realized

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[84] SHAVIRO, *supra* note 2 at 106.

through the prospect of contributions would also be a function of after-tax consumption, since contributions would be treated (then as now) as non-deductible consumption under a cash-flow tax. The only apparent case in which power might be a function of before-tax savings is power over charitable organizations attributable to future donations, since gifts would presumably be deductible under a consumption as under an income tax. Any prestige or respect that comes from wealth is much more likely to be a function of her past or future consumption, which is or will be public, than the before-tax amount of her holdings. Again, since a consumption tax reduces the amount of consumption, it will reduce the imputed income from that form of consumption-related benefit.

The executives, in contrast, realize enormous power relative to their explicit consumption or the capitalized value of their future consumption stream. They are apt to have an army of subordinates, decide on the allocation of substantial amounts of capital and so on. They are apt to be accorded more respect than the holder of the brokerage account, both because respect often accompanies power and because, to the extent respect accompanies wealth, their wealth is more visible.

The same relationship between savings and wages and these sorts of intangible benefits seems to hold for individuals will lower levels of less wealthy. An attorney with an income of $250,000 is apt to have more power and prestige than someone with an equivalent amount of consumption financed through the return from savings.

The final objection to the imputed income from savings argument is that the rationale for including within the tax base these forms of intangible benefits but excluding other intangible benefits and burdens associated with consumption or income seems unclear.[85] As noted in the

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[85] See Kaplow [date].

previous section, consumption may bring with it regret, anticipation, pleasant memories and the like. Labor carries with it an even wider variety of intangible benefits, including the very benefits mentioned in connection with savings. Focusing only on a few of the benefits and burdens associated with deferred consumption is apt to produce misleading policy proposals.

The argument for taxing savings because it brings power, prestige, and security, ultimately relies on a rhetorical trick (or perhaps mistake). It depends on describing the utility gained from saving as coming from two or more sources, future consumption and power/prestige/security, while the utility from other forms of consumption come from one source. We can, however, describe the utility from almost any item as coming from multiple sources. The utility we gain from eating well comes from both the good flavors as well as the nutrition. The utility from exercise comes from the endorphins and the fitness. This change in the description of the benefits of eating well or exercise, however, should not lead us to want to tax them more.

VI. Qualifications

As noted in the Introduction, recent extensions of AS 1976 show that the optimal tax system might be very complex. The discussion so far has focused on what we believe to be the core issues presented by their argument and issues that most legal analysts have focused on in thinking about income and consumption taxation. By doing so, it risks over-simplifying the results in the literature. This section briefly discusses how two qualifications to the AS 1976 argument might lead away from a pure consumption tax to a system of varying taxes or subsidies on many goods or activities, including savings/future consumption.

The first qualification, which affects the efficiency argument found in Section I.C. above, is the possibility that any good, including future consumption, is a "relative complement" to leisure. An economic

complement, as the word implies, is something whose use increases with increased use of the complementary item. Sugar is a complement to coffee. A relative complement to leisure is something that is more of a complement to leisure (i.e., increases more when leisure increase) than other things are.[86] For example, long novels and hikes might be relative complements to leisure.

Taxing relative complements to leisure would be efficient if we have a wage tax. The wage tax distorts the decision of whether to work or enjoy leisure. Taxing relative complements to leisure reduces that distortion. The same reasoning implies that goods that are relative substitutes for leisure ought to be subsidized, since their consumption reduces the temptation to loaf instead of work, and thereby reduces the distortion caused by the wage tax. The question here is whether savings/future consumption is a relative complement to leisure. If it is then, implementation problems aside, it should be taxed, with the rate determined by its relative complementarity to leisure. On the other hand, if savings/future consumption is a relative substitute for leisure, it ought to be subsidized. The ideal tax on savings would be negative. The government might, for example, give taxpayers an annual credit equal to 1% of savings.

There is little reason to believe that savings is either a relative complement or substitute to leisure. Unlike the empirical quagmire of the trade-off theory where the elasticities could be any which way and proponents can cite studies that support various conclusions, there is no

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[86]The technical name for the assumption that no commodity is a relative complement for leisure is weak separability. Under weak separability, an individual's utility function can be stated as a function of two variables, work effort and a function of commodities. That is utility is equal to $U(w, v(c_i))$ where the w is work effort, c_i are the various commodities one can consume, and v is a subutlity function that determines the utility from consumption.

empirical or theoretical reason to believe that future consumption is a relative complement to leisure.

Armchair reasoning suggests that the answer will be complex and does not point in any one direction.[87] Suppose that we can increase an individual's resources at one of two times, when he is working and when he is retired. The choice of an income tax is essentially a choice to increase resources early in life, when working and reduce them later, when retired. If we increase his resources when he is working, he is likely to take time off from work to spend these resources. It increases the labor/leisure distortion. If we increase his resources when retired, he already is not working and, therefore, there is no increase in labor/leisure distortion. This would suggest that savings is a relative substitute for leisure and that we should have a capital subsidy. A capital subsidy, however, might make individuals retire earlier, offsetting the above effect. We do not have a strong intuition about the net result.

More generally, while it is the case that a pure wage tax might be improved by taxing relative complements to leisure and subsidizing relative substitutes for leisure, what such taxes might look like is obscure. We would want to tax items that take a long time but are relatively inexpensive and subsidize short but expensive items. For example, as noted above, we might want to tax long books or hiking gear and subsidize rock concerts. Similarly, we might want to tax food prepared at home and subsidize food eaten at restaurants, the opposite pattern from most VATs in the world today.[88] The rate of tax (or subsidy) would depend on the strength of the complementary or substitution

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[87]We thank Louis Kaplow for suggesting this reasoning.

[88]*See* Aled ab Iowerth & John Whalley, *Efficiency Considerations and the Exemption of Food from Sales and Value Added Taxes*, 35 CANADIAN J. ECON. 166-182 (2002); Kaplow, supra note 4, *On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal*.

relationship. While the technical economics literature views the "relative complementarity problem" as important[89], from a practical point if view, it has no obvious bearing on the choice between an income and consumption tax.

The second qualification to AS 1976 relates to savings heterogeneity, discussed in Section IV. The qualification arises if savings is a signal of ability separate from wages. Nichols and Zeckhauser call goods that provide these sorts of signals "indicator goods."[90] The idea is that at any given level of income, those high ability individuals who are shirking – choosing leisure over labor because of the tax on labor – will be likely to consume a different set of items than those of who have lower ability but are working hard. The replicating wage tax strategy does not work with indicator goods. Because individuals with the same labor income but different abilities make different choices with respect to the indicator goods, the replicating wage tax cannot differentiate individuals on this basis. The presence of indicator goods, therefore, provides an additional tool (beyond wage or consumption taxation) to identify (and tax) those of high ability. By taxing indicator goods, we can tax those of high ability in ways that a wage tax cannot.

Indicator goods did not arise in AS 1976, because individuals were assumed to be identical except with respect to their wage rates. That is, in their model, individuals varied only in one way, wage rates, and did not have differing preferences. The only way to differentiate individuals, therefore, was based on wages. It is highly likely that individuals are heterogeneous in their tastes, so the possibility of indicator goods is real.

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[89] *See* Deaton, *supra* note 3.

[90] Albert Nichols & Richard Zeckhauser, *Targeting Transfers Through Restrictions on Recipients*, 72 AM. ECON. REV. 372, 375 (1982).

Finding examples of indicator goods is tricky because we need to be able to observe ability. That is, we have to find items that those of high ability consume (or fail to consume) independent of their earnings. Because ability cannot be observed directly, we have to make implicit judgments about various tastes as a signal of ability.

Nichols and Zeckhauser do not offer any examples of indicator goods. (They use a hypothetical to illustrate the issue, but do not explicitly state that they believe the hypothetical to be indicator good.) Kaplow suggests that high-brow culture is such a good.[91] Long abstract novels and plays, modern art, and classical music arguably require greater ability to appreciate. Therefore, those with higher ability are more likely to consume these items independent of income, and these items thus should be taxed. Saez uses the example of smoking tobacco.[92] He argues that those with higher ability tend to smoke less and "this clearly cannot be due to the mechanical fact that they have higher disposable income."[93] All else equal a subsidy for smoking or equivalently, a tax on "not smoking" (the "activity" of the high ability people), would be desirable if Saez is correct. The reason is that a tax on individuals for failing to smoke cannot be replicated with a labor income tax and the activity of not smoking correlates with ability. Blumkin and Sadka suggest that education might be an indicator good. Taxing education allows us to tax those of high ability in ways that merely taxing wages does not.[94]

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[91] Kaplow, *supra* note 4, *On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal*.

[92] Emmanuel Saez, *The Desirability of Commodity Taxation under Non-Linear Income Taxation and Heterogeneous Tastes*, 83 J. Pub. Econ. 217, 226 (2002).

[93] *Id.*

[94] Tomer Blumkin & Efraim Sadka, *A Case for Taxing Education*, CESifo Working Paper No. 1441 (April 2005).

Our question is whether to tax the return to savings (at the same rate as the tax on labor income). Many of those who argue for a tax on savings make precisely the wrong argument in this respect. They argue that only the wealthy can save – the poor must spend all of their resources merely to survive. This claim, however, suggests that savings depends entirely on resources rather than being related to some innate ability. The AS 1976 argument shows that this rationale is wrong because a tax on savings is merely a substitute for a tax on earnings and a direct tax on earnings is superior. Instead, for a tax on savings to produce welfare gains, savings would have to depend on ability, not earnings. Those with low ability would have to save less than those with high ability even at the same income level (or changes in savings would have to be different than changes in income).

The most well know assertion of this sort is Saez.[95] He suggests that savings is an indicator good. (He does not use that term, but his definition if essentially the same as Nichols and Zechauser's.) Therefore, we would want to tax savings as a way of taxing ability.[96] He

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[95]*See* **Saez, *supra* note 91; Gordon, *supra* note 3**.

[96]Saez claim has additional problems even if one accepts his claim. He argues, "higher income individuals have more not only because they have more income to save but also because they might have a better financial education and be more aware of the need to save for retirement." Saez, *supra* note 91, at 228. Savings rates under his argument, however, do not depend directly on ability. Instead, they depend on education which in turn depends on ability. Rather than taxing savings, however, we could tax education as the more directly signal of ability.

A second problem with Saez's argument is that he only shows that a marginal tax on some commodities might be optimal and illustrates this with a two period example and a tax on savings. In the two period example, a tax on savings can be marginal, but in the more realistic, infinite horizon case, it cannot. None of his proofs go through when the tax on the commodity is non-marginal, so we cannot learn anything from his model about whether a tax on savings is desirable.

cites a single paper by Lawrance[97] for support but says that the claim is also supported generally in the literature. Our search of the literature, however, shows that the correlation of savings with ability is unknown. The reason is that we have no independent measure of ability. The most that can be said is that there does seem to be a correlation between savings and financial sophistication. Financial sophistication is likely to be correlated with education, which in turn may be correlated with ability. In addition, holding education constant, innate ability may be related to numeracy, financial sophistication and therefore savings. There is thus some support, albeit weak and indirect, for the characterization of savings as an indicator good. Of course, there are bound to be countless indicator goods more closely tied to ability. For example, if savings is an indicator good because it reflects education, perhaps education is an even more direct signal of ability and should be taxed.[98] Moreover, the fact that savings may be an indicator good tells us very little about how it should be taxed. Thus far, economists have only been able to show that welfare increases as we move from no tax on indicator goods to an infinitely small tax on such goods, and they cannot characterize what the actual taxes should look like.

In the end, arguments of the sort made by Saez may very well end up supporting some tax on capital (and countless other indicator goods).[99] The answer will depend on further development of the models and the empirics. If income tax advocates need a place to hang their hat, it would be here, but the arguments at this point are sufficiently theoretical and tenuous that we cannot say they currently support an income tax.

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[97] *See* Emily Lawrence, *Poverty and the Rate of Time Preference: Evidence from Panel Data*, 119 J. POL. ECON. 54 (1991).

[98] Blumkin & Sadka, *supra* note 93.

[99] *See* Saez, *supra* note 91.

VII. Conclusion

Supporters of an income tax have argued that any efficiency gains realized from switching to a consumption tax are overstated: Eliminating of the tax on savings will require higher taxes on wages and efficiency gains from eliminating the first tax will reduced or offset by the efficiency loss by increasing that latter tax.

Supporters of an income tax also make a number of related normative arguments. They argue that a consumption tax is regressive because it reduces the tax burden on savers, and savings rates rise with income or wealth. They also argue that, among those with equal opportunity sets, those who save are better off than those who spend. They are better judges of their own welfare and, in addition, benefit from the non-taxation of imputed income from savings.

We show that none of these arguments is correct. The tax on savings is a tax on labor that produces that savings, and it is a particularly inefficient tax on that labor. Replacing that tax with a direct tax on labor, or an economically equivalent consumption tax, will generate efficiency gains and appropriately tax most forms of imputed income realized savings and deferred consumption. It will also leave the tax burden unchanged among those with equal wages, or who for other reasons find themselves with equal opportunity sets.

Our analysis is based on a comparison of ideal tax regimes. A comparison of non-ideal systems would likely strengthen our conclusion.[100]

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[100] William T. Andrews, *The Achilles Heel of the Comprehensive Income Tax*, in NEW DIRECTIONS IN FEDERAL TAX POLICY FOR THE 1980s 278, 280-85 (Charles E. Walker & Mark A. Bloomfield eds., 1983).

References

Andrews, William. 1974. A Consumption-type of Cash Flow Personal Income Tax, 87 Harv. L. Rev. 1113.

Andrews, William. 1975. Fairness and the Personal Income Tax: A Reply to Professor Warren, 88 Harv. L. Rev. 947

Andrews, William T. 1983. The Achilles Heel of the Comprehensive Income Tax, in New Directions in Federal Tax Policy for the 1980s, at 278, 280-85 (Charles E. Walker & Mark A. Bloomfield eds.).

Ainslie, George and Nick Haslam, "Hypobolic discounting," in Choice and Time (George Loewenstein and Jon Elseter eds. 1992),

Atkinson, Anthony B. and Joseph E. Stiglitz. 1976. The Design of Tax Structure: Direct versus Indirect Taxation, 6 Journal of Public Economics 55-75.

Auerbach, Alan and Kotlikoff, Lawrence. 1987. Dynamic Fiscal Policy.

Avi-Yonah, Reuven S. 2004. Risk, Rents, and Regressivity: Why the United States Needs Both an Income Tax and a VAT, Tax Notes, December 20, 2004, 1651-1666.

Becker, Gary and Mulligan, Casey, The Endogenous Determination of Time Preference, Quarterly Journal of Economics 729-758 (1997).

Bentham, Jeremy, (1789) Principals of Morals and Legislation

Benzion, Uri, Amnon Rapaport and Joseph Yagil, "Discount rates inferred from decisions: An experimental study," Management Science 35, pp. 270-84 (1989)

Blumkin, Tomer and Efraim Sadka, A Case for Taxing Education, CESifo Working Paper No. 1441 (April 2005).

Boadway, Robin Maurice Marchand and Pierre Pestieau, 2000. Redistribution with Unobservable Bequests: A Case for Taxing Capital Income, 102(2) Scand. J. of Economics 253-267.

Bradford, David. 1980. The Case for a Personal Consumption Tax, in What Should be Taxed: Income or Consumption (Joseph Peckman ed.) p. 75-125.

Bradford, David F. Bradford and the U.S. Treasury Tax Policy Staff. 1984. Blueprints for Basic Tax Reform (2d ed.).

Bradford, David. 1998. Transition to and Tax Rate Flexibility in a Cash-Flow Tax, in Tax Policy and the Economy (James M. Poterba ed.)

Brown, E. Cary Brown. 1948. Business-Income Taxation and Investment Incentives, in Income, Employment and Public Policy, Essays in Honor of Alvin H. Hansen. 300-__.

Carrol, C.D. and A. A. Samwick, "The nature of precautionary wealth," Journal of Monetary Economics 40, pp. 41-71 (1997).

Chaptman, Gretchen B., "Temporal discounting and utility for health and money," Journal of Experimental Psychology: Learning, Memory and Cognition, 22:3 pp. 77-91 (1996)

Cremer, Helmuth Pierre Pestieau, and Jean-Charles Rochet. 2001. Direct versus Indirect Taxation: The Design of the Tax Structure Revisited, 42(3) International Economic Review 781-799.

Christiansen, Vidar. 1994. Which Commodity Taxes Should Supplement the Income Tax?, 24 Journal of Public Economics 195-220.

Deaton, Angus. 1981. Optimal Taxes and the Structure of Preferences, 49(5) Econometrica 1245-1260.

Diamond, Peter. 1967. Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparison of Utility: Comment, 75 J. Political Econ 765.

Domar, Evsey and Richard Musgrave. 1944. Proportional Income Taxation and Risk-Taking, 58 Quarterly Journal of Economics 388-__.

Dynan, Karen E., Jonathon Skinner and Stephen P. Zeldes, "Do the Rich Save More?", Journal of Political Economy 112:2, pp. 397-444 (2004).

Eric M. Engen, William G. Gale, and Cori e. Uccello, The Adequacy of Household Saving, 2 Brookings Papers on Economic Activity 65-187 (1999).

Frederic, Shane, George Lowenstein, and Ted O'Donoghue, "Time Discounting and Time Preference: A Critical Review," Journal of Economic Literature, 40:2, pp. 351-401 (2002)

Fisher, Irving. 1906. The Nature of Capital and Income.

Fried, Barbara H. 1992. Fairness and the Consumption Tax, 44 Stanford L. Rev. 961-1017.

Gordon, Roger. 2004. Taxation of Interest Income. 11 International Tax and Public Finance 5-15 (2004).

Gunn, Alan. 1979. The Case for an Income Tax, 46 U. Chicago L. Rev. 370-400.

Graetz, Michael. 1979. Implementing a Progressive Consumption Tax, 92 Harv. L. Rev. 1575.

Gravelle, Jane. 1994. The Taxation of Capital Income.

Green, Leonard, Joel Myerson and Edward McFadden, "Rate of temporal discounting decreases with amount of reward," Memory & Cognition 25:5, pp. 715-23 (1997).

Hausman, Jerry, "Individual discount rates and the purchase and utilization of energy using durables," Bell Journal of Economics 10:1, pp. 33-54; (19__)

Haranyi, Peter. 1955. Cardinal Welfare, Individualistic Ethics and Interpersonal Comparison of Utility, 63 J. Political Econ. 309.

Hobbes, Thomas. 1651. The Leviathan.

Holmes, Stephen and Cass Sunstein, 1999. The Cost of Rights.

Hsee, Christopher K., Robert P. Abelson and Peter Salovey, "The relative weighting of position and velocity in satisfaction," Psychological Science 2:4, pp. 263-66 (1991).

Hubbard, R. Glenn, Jonathon Skinner and Stephen P. Zeldes, "Precautionary Saving and Social Insurance," Journal of Political Economy 103:2, pp. 360-399 (1995).

Hylland, Aanund and Richard Zeckhauser. 1979. Distributional Objectives Should Affects Taxes but Not Program Choice or Design, 81 Scandinavian Journal of Economics 264-__.

Iowerth, Aled ab and John Whalley. 2002. Efficiency Considerations and the Exemption of Food from Sales and Value Added Taxes, 35 Canadian Journal of Economics 166-182.

Kaldor, Nicholas. 1955. An Expenditure Tax.

Kaplow, Louis. 1994a. Taxation and Risk-Taking, A General Equilibrium Perspective, 47 National tax Journal 135-__.

Kaplow, Louis. 1994b. Human Capital Under an Ideal Income Tax, 80 Virginia L. Rev. 1477-__.

Kaplow Louis. 2004. On the Undesirability of Commodity Taxation even when Income Taxation is not Optimal, Harvard John M. Olin Center for Law and Economics Discussion Paper No. 470.

Kaplow, Louis. 2004 (manuscript). Taxation and Redistribution, Chapter 6.

Kaplow, Louis, and Shavell, Steven. 1994. Why the legal System is less Efficient than the Income Tax in Redistributing Income, 23 J. Legal. Studies 667- __.

Kaplow, Louis, and Steven Shavell. 2002. Fairness versus Welfare.

Kelman, Mark 1983. Time Preference and Tax Equity, 35 Stanford L. Rev. 649

Konishi, Hideo, A Pareto-Improving Commodity Tax Reform under a Smooth Non-linear Income Tax, 56 Journal of Public Econoimcs 413-446 (1995).

Lawrence, Emily, "Poverty and the rate of time preference: Evidence from panel data," Journal of Political Economy, 119, pp. 54-77 (1991).

Loewenstein, George, "Frames of mind in intertemporal choice," Mangement Science, 34 pp. 200-14b (1988).

Lowenstein, George, "Out of control: visceral influences on behavior," Organizational Behavior and Human Decision Processes, 65:3, pp. 272-292 (1996).

Loewenstein, George and Drazen Prelec, Anomolies in intertemporal choice: Evidence and an interpretation," Quarterly Journal of Economics, May 1992, pp. 573-97.

Loewenstein, George, and Nachum Sicherman, "Do workers prefer increasing wage profiles?" Journal of Labor Economics 9:1, pp. 67-84 (1991).

Mill, John Stuart. (1871). Principles of Political Economy.

Mirrlees. James A. 1976. Optimal Tax Theory, 6 Journal of Public Economics 327-358.

Moore, Michael J. And W. Kip Viscusi, "Models for estimating discount rates for long-term health risks using labor market data," Journal of Risk and Uncertainty, 3, pp. 381-401 (1990).

Murphy, Liam and Thomas Nagel. 2002. The Myth of Ownership: Taxes and Justice 101.

Nichols, Albert and Richard Zeckhauser, Targeting Transfers through Restrictions on Recipients, American Economic Review, Vol. 72, pp. 372-377 (1982).

Ramsey, Frank. 1927. A Contribution to the Theory of Taxation, 37 Economic Journal 47-61.

Redelmeir, Daniel A. And Daniel N. Heller, "Time Preference in medical decision making and cost effectiveness analysis, Medical Decision Making 13:3, pp. 212-17 (1993).

Reed, Daniel, Is time discounting hyperbolic or subadditive?, Journal of Risk and Uncertainty, 23:1, pp. 5-32 (2001).

Ruderman, H. M.D. Levine and J.E. McMahon, "The behavior of the market for energy efficiency in residential appliances including heating and cooling equipment," Energy Journal 8:1, pp. 101-24 (1987).

Saez, Emmanuel. 2002. The Desirability of Commodity Taxation under Non-Linear Income Taxation and Heterogeneous Tastes, 83 Journal of Public Economics 217-230.

Saez, Emanuel. 2004. Direct or Indirect Tax Instruments for Redistribution: Short-Run versus Long-Run, 88 Journal of Public Economics 503-518.

Sen, Amartya 1970. Collective choice and Social Welfare.

Shaviro, Daniel. 2000. When Rules Change (2000).

Shaviro, Daniel. 2004. Replacing the Income Tax with a Progressive Consumption Tax, __ Tax Notes 91 (April 5, 2004).

Shuldiner, Reed, Taxation and Risk (draft 2004).

Simons, Henry 1938. Personal Income Taxation.

Stiglitz, Joseph E. 1982. Self-Selection and Pareto Efficient Taxation, 17 Journal of Public Economics 213-240.

Stiglitz, Joseph E. 1987. Pareto Efficient and Optimal Taxation and the New New Welfare Economics, in 2 Handbook of Public Economics 991-1042 (Alan J. Auerbach and Martin Feldstein eds.).

Thaler, Richard H, "Some empirical evidence on dynamic inconsistency," Economic Letters 8, pp. 201-7 (1981).

Department of the Treasury, Integration of the Individual and Corporate Tax Systems, Taxing Business Income Once (1992).

Department of the Treasury, Tax Reform for Fairness, Simplicity & Economic Growth (1984).

Venti, Stephen F. and David A. Wise, Choice, Chance and Wealth Dispersion at Retirement, NBER Working Paper 7521(2000).

Viscusi, W. Kip and Michael J. Moore, "Rates of time preference and valuation of the duration of life," Journal of Public Economics, 38:3, pp. 297-317 (1989).

Warren, Alvin Warren, 1980. Would a Consumption Tax Be Fairer Than an Income Tax, 89 Yale L.J. 1081-1123.

Warner, John T. and Saul Pleeter, "The personal discount rate: Evidence from military downsizing programs," American Economic Review 91:1, pp. 33-53 (2001).

Weisbach, David. forthcoming 2005. The (Non)Taxation of Risk, Tax L. Rev.

Penguin Dictionary of Philosophy (Thomas Mautner, ed.) (19__)