The Taxation of Capital Income and the Choice of Tax Base

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I. INTRODUCTION

Over the last 40 years, one of the most controversial topics in tax policy has been the choice between income and consumption as the principal federal tax base. The difference between an income and consumption tax base is immediately apparent from the Haig-Simons definition of income: For a given period of time, income \( Y \) is equal to the sum of consumption \( C \) plus changes in wealth \( \Delta W \), or

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Y = C + \Delta W.
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Both bases include consumption; the difference is that an income tax also includes changes in wealth, or savings. Whether or not it is appropriate or desirable to tax savings has been at the core of the debate.

* Professor of Law, New York University School of Law. I gratefully acknowledge the support of the Filomen D'Agostino Faculty Research Fund. I benefited greatly from the comments on earlier drafts by Bill Andrews, Bobbie Barton, Dave Bradford, Laura Cunningham, Jerry Kurtz, Paul McDaniel, Len Schmolka, Dan Shaviro, George Sorter, Linda Sugin, Al Warren, Larry Zelenak, Ed Zelinsky, and the participants in NYU's Colloquium on Tax Policy and Public Finance. I am especially grateful, once again, to Deborah Schenk for her extensive comments. I also gratefully acknowledge the research assistance of Myreon Hodur.

1 No one has championed the third traditional candidate, wealth, as the principal federal tax base. It generally is thought that whatever considerations support wealth as a secondary tax base can be taken into account best by a wealth or transfer tax and should not obscure the choice between an income and a consumption tax as the base. E.g., Alvin Warren, Would a Consumption Tax Be Fairer Than an Income Tax?, 89 Yale L.J. 1031, 1082 (1980) [hereinafter Consumption Tax]. Nevertheless, one's views with respect to taxing wealth may be a major determinant in making the choice between consumption and income as the base. See text accompanying note 16.

2 More formally, income is defined as the "algebraic sum of (1) the market value of rights exercised in consumption and (2) the change in the value of the store of property rights between the beginning and the end of the period in question." Henry C. Simons, Personal Income Taxation 50 (1938); see Robert M. Haig, The Concept of Income—Economic and Legal Aspects, in The Federal Income Tax 1, 7 (Robert M. Haig ed., 1921), reprinted in American Econ. Ass'n, Readings in the Economics of Taxation 54 (Richard A. Musgrave & Carl Shoup eds., 1959).

3 The modern debate can be traced to Nicholas Kaldor, An Expenditure Tax (1955). The seminal article on this subject in legal scholarship is William D. Andrews, A Consump-
Proponents of the consumption tax base believe that it is neither appropriate nor desirable to tax savings, primarily for two reasons.\(^4\) First and foremost, they argue that taxing changes in wealth amounts to the double taxation of savings,\(^5\) and is therefore both unfair\(^6\) and inefficient.\(^7\) It is unfair because it discriminates against those who have a preference for future (as opposed to current) consumption; it is inefficient because it changes the relative prices of current and future consumption, resulting in a welfare, or deadweight, loss to society. Second, they argue that a consumption tax is far easier to implement and administer than a normative income tax.\(^8\) For this reason, William Andrews has asserted, "A consumption-type personal income tax is therefore a better model to follow, in my view, even if a true accretion-type would be ideally preferable."\(^9\)

Income tax proponents respond by first asserting that these arguments are unconvincing\(^10\) and, in any event, overstate the case. Most

\(^4\) For an extensive discussion of several other arguments made on behalf of the consumption tax, see Warren, Consumption Tax, note 1, at 1094-121. These include: (1) Wealth should not be taxed until withdrawn from the "common pool." Id. at 1094-95. This argument generally is attributed to Thomas Hobbes who felt that it would be inappropriate to tax savings until appropriated for one's personal use. Until then, savings benefit the economy as a whole. Thomas Hobbes, Leviathan 266-67 (Clarendon Press 1909) (1651). The common pool argument has been criticized for not taking into account various benefits that come from the mere holding of wealth such as power, security, and influence. Warren, Consumption Tax, note 1, at 1094-95. (2) A related argument, which is subject to the same criticism, is that consumption is a better measure of utility and therefore a better measure of distributive justice. Id. at 1095-97. (3) Income is an inherently defective concept. Id. at 1109-20. (4) Taxing consumption would interfere less with liberty than does taxing income. Id. at 1120-21.


\(^7\) Some economists also suggest that the expected national savings rate under a consumption tax would boost national productivity. E.g., Michael J. Boskin, Taxation, Saving, and the Rate of Interest, 86 J. Pol. Econ. S3, S19-S20 (1978); Martin Feldstein, Does the United States Save Too Little?, 67 Amer. Econ. Rev. 116, 117-18 (1977).


\(^10\) Barbara Fried, for example, finds the arguments supporting the consumption tax on fairness grounds "surprisingly weak." Barbara H. Fried, Fairness and the Consumption Tax, 44 Stan. L. Rev. 961, 966 (1992). She identifies three theories of fairness underlying the arguments for exempting capital income from tax, none of which she finds persuasive. These theories are that (1) the consumption tax is a surrogate for a "perfected income tax," id. at 967-97; (2) the consumption tax is a surrogate for an endowments tax, id. at 997-99;
acknowledge that an income tax does change the relative prices of current and future consumption, but because of behavioral adjustments and market reactions, the distortion is not nearly as great as consumption tax advocates claim.\textsuperscript{11} They also question whether this relative change in prices is really unfair. A change in relative prices may impact on one's expectations, but an income tax is based on outcomes, not expectations. Furthermore, this change in relative prices is only unfair if the assumption is that equal spenders should bear the same tax burden. If, however, there is a societal judgment that the tax should be imposed on some other basis, then the fact that the relative price of present and future consumption changes may be of little consequence.\textsuperscript{12} Finally, they assert that politicians, not academics enact tax laws. Once this political reality is taken into account, a consumption tax would not be nearly as simple to administer as is alleged.\textsuperscript{13} In sum, they conclude that the affirmative case for a consumption tax has not been made.

Although the negative case against the consumption tax is fairly straightforward, the positive case for an income tax is not. Some proponents simply assert that income is a superior index of a taxpayer's "ability to pay,"\textsuperscript{14} however, it is not immediately clear what ability to pay means and why it is measured better by income rather than consumption.\textsuperscript{15}

Perhaps the strongest argument made on behalf of a tax based on income as opposed to consumption is that an income tax serves as an indirect tax on wealth. One who believes that accumulations of wealth should be taxed, in the absence of a direct wealth tax, might prefer an income tax to a consumption tax.\textsuperscript{16} Although there are acknowledged shortcomings to using the income tax to reach accumu-
lated wealth, at least facially, it seems plausible as a second-best alternative.

The debate continues, neither side willing to throw in the towel. One reason that the controversy persists is that both bases are plausible and can be justified in the abstract. Each may be considered superior as a matter of political or moral philosophy. In the end, the "choice of base is not a matter of logical proof but of exposing the assumptions and identifying the consequences of each." It is in this spirit that I seek to identify the consequences of adopting these alternative bases. In this Article, I try to isolate the tax burdens these alternative bases impose on capital income, after taking into account portfolio adjustments that sophisticated investors might make in reaction to the taxes. I came to the project with a relatively open mind, but viscerally favored the income tax base. I conclude, however, that income, as a tax base, is clearly deficient and should be eschewed even by those who believe, as I do, that wealth should be taxed.

The Article begins by comparing the respective treatment of savings, or capital investment, under the two alternative bases. Although a consumption tax could be imposed in a variety of ways, I use the cash flow or "consumed income" tax for purposes of the analysis. Under the cash flow tax, all capital investment is deducted, or expensed, when made, while under an income tax, capital investment is recovered through depreciation deductions or upon disposition. I first demonstrate that the pretax and after-tax rates of return are the same under a cash flow tax. This proposition is now well accepted, although there is some debate over exactly how it should be articulated. I briefly explore this debate and conclude that a cash flow tax is best viewed as imposing no tax burden on capital income. I then evaluate the burden a normative income tax with full loss offsets imposes on capital income. Through several examples, I demonstrate how a sophisticated investor, by adjusting her portfolio, can reduce the impact of such an income tax dramatically. Indeed, with perfect capital markets, only the risk-free rate of return on her capital will be burdened by the tax. Even in the absence of perfect capital markets, an investor can reduce the impact of the tax so that it only burdens in-
come to the extent of the product of her net capital investment and her borrowing rate. In either case, the income tax will not reach the premium a sophisticated investor receives for investing in risky investments.

The implications of these observations are somewhat surprising. First, in a world with perfect capital markets, the principal difference between a normative income tax and a cash flow tax is that the former taxes the risk-free rate of return to capital and the latter does not. The real risk-free rate of return over the last 70 years has been only .6%, the difference in the ultimate burdens associated with the two taxes is not as significant as generally is believed. Second, although a normative income tax is thought to be based on outcomes and not expectations, the burden on capital income under an income tax does not depend on the success of an investor's investments. Rather, as is demonstrated below, it is in the nature of a nominal ex ante wealth tax that is payable in all events. Third, a normative income tax places a premium on sophistication. Dealing with the relationship between risk and return under an income tax requires a degree of sophistication that would not be required in a world without taxes or under a cash flow tax. For this reason, unsophisticated taxpayers may well pay significantly more in taxes than their more sophisticated counterparts do. Finally, in the absence of perfect

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23 This was the average real return on short-term Treasury bills from 1926 through 1996. Ibbotson Associates, Inc., Stocks, Bonds, Bills, and Inflation 1997 Yearbook 31 (1997) [hereinafter Ibbotson]. In recent years, the real return on short-term Treasury bills has been somewhat higher. For example, from 1990 through 1996, the average rate was 1.74%. Id. at 39; see also Bankman & Griffith, supra, at 377 (“Over the last sixty years, the real riskless rate of return has been near zero. . . .”); David F. Bradford, Consumption Taxes: Some Fundamental Transition Issues 10 (NBER Working Paper No. 5290, 1995) (historically the real rate of return has been less than 1%).

24 See Bankman & Griffith, note 22, at 377; Bradford, note 23, at 10-13; Alvin C. Warren, Jr., How Much Capital Income Taxed Under an Income Tax Is Exempt Under a Cash Flow Tax?, 52 Tax L. Rev. 1 (1996) [hereinafter Capital Income]. If the difference in the ultimate burdens associated with the two taxes is not as significant as generally thought, the transitional problems associated with changing from one base to the other are also not as significant as generally thought. Joseph Bankman & Barbara Fried, Winners and Losers in the Shift to a Consumption Tax, 86 Geo. L.J. 539 (1998); William M. Gentry & Glenn R. Hubbard, Distributional Implications of Introducing A Broad-Based Consumption Tax, 11 Tax Policy and the Econ. 1, 2-6 (James M. Poterba, ed. 1997).

25 Graetz, note 13, at 1601 (stating ex ante approach to taxation would require major change in classic conception of equity); Warren, Consumption Tax, note 1, at 1098 (stating fairness of a tax must depend on outcomes, not expectations).

26 See Section IV.

27 Louis Kaplow, Taxation and Risk Taking: A General Equilibrium Perspective, 47 Nat'l Tax J. 789, 792 (1994) (demonstrating that “[a] proportional income tax is equivalent to a wage tax plus an ex ante wealth tax (that is, a tax on wealth in period 0’’).
markets, the borrowing rates of taxpayers will vary. As is demonstrated, the tax burden imposed by a normative income tax is directly related to an investor's borrowing rate, that is, the higher the investor's borrowing rate, the higher her tax burden. Since wealthier taxpayers tend to have lower borrowing rates, the tax burden imposed by a normative income tax on capital income is probably somewhat regressive with respect to wealth.

This last point is troublesome. No one believes that a normative income tax based upon the Haig-Simons definition could ever be fully implemented; its importance is as an ideal. Those who advocate such an income tax must believe that if it could be implemented, it would result in the most appropriate distribution of the tax burden among taxpayers. Therefore, these advocates should favor the implementation of a practical tax base whose tax burden distribution mirrors the ideal. If the ideal tax is regressive with respect to wealth, its practical counterpart also should be regressive with respect to wealth. This is a characteristic that I do not find attractive, especially as a goal.

As a practical matter, the current U.S. tax system differs from a normative income tax in several significant ways, the most important of which, for purposes of this Article, is that it is not indexed for inflation. I demonstrate that the burden imposed on capital income by an unindexed income tax is primarily a function of, and directly related to, inflation. In periods of high inflation, the tax burden on capital income is far greater than in periods of low inflation. This result is very hard to justify under almost any standard, except, perhaps, that it is better to tax capital income in some fashion than not at all.

In sum, I find the income tax wanting, as either a goal or a practical reality. First, it places a premium on sophistication that would not be necessary under a cash flow tax. At a minimum, this imposes on less sophisticated taxpayers the cost of seeking professional investment advice. In the absence of such advice, many unsophisticated investors will end up paying more in taxes than they would if they made the

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28 See Section IV.

29 For some, a normative income tax is an impossible dream. George F. Break & Joseph A. Pechman, Federal Tax Reform: The Impossible Dream? (1975). For others, it is more in the nature of a nightmare. E.g., Boris I. Bittker, A "Comprehensive Tax Base" as a Goal of Income Tax Reform, 80 Harv. L. Rev. 925, 982 (1967) ("A truly 'comprehensive' base, in short, would be a disaster.").


31 Two other significant departures are that gains and losses are recognized only when realized, and that there are several limitations on losses. See note 78.
appropriate portfolio adjustment. Second, the burden of a normative income tax on wealth is quite small, much smaller than generally is footbelieved. At any sort of realistic rate, it is therefore a very poor tool to address the problems created by large concentrations of wealth. Furthermore, to the extent that it imposes a burden on wealth, it is allocated among taxpayers in a manner directly related to their borrowing rate. Since borrowing rates generally decline as wealth increases, the burden imposed by a normative income tax is probably regressive with respect to wealth. Under an unindexed income tax, the burden on wealth becomes even more arbitrary and is directly related to inflation.

II. Definition of Capital Income

Before comparing the relative burdens imposed by a cash flow tax and an income tax on the return to capital, it is important to define what is meant by the real return to capital or “capital income.” Capital income can be viewed as comprised of three different elements or components: the real risk-free rate of return, the risk premium, and inframarginal return. In almost all cases, capital income is comprised of only the first two elements. On occasion, however, an investor may be lucky enough to have the opportunity to invest in an enterprise that, taking risk into account, offers an expected rate of return higher than the market, a so-called inframarginal return. By their very nature, these extraordinary returns must be limited (otherwise the return would become marginal) and are generally “associated with rents to ideas, managerial skill, or market power.” For this reason, they often are not strictly returns to capital, but constitute a return to a combination of labor, that is, a person’s ideas or skills, and capital. As a practical matter, it may be impossible to determine the amount of return allocable to each factor. This might be characterized as the Bill Gates problem. To what extent is his vast wealth a result of accumulated capital income or the result of luck and/or ingenuity?

32 A fourth component, the inflation premium, is not properly includible within the base of either a cash flow tax or a normative income tax. See e.g., Daniel Halperin & Eugene Steuerle, Indexing the Tax System for Inflation, in Uneasy Compromise: Problems of a Hybrid Income-Consumption Tax 347, 348-53 (Henry J. Aaron, Harvey Galper & Joseph A. Pechman eds., 1988); see also Bankman & Griffith, note 22, at 397 (stating inflation not taxed under idealized income tax). For an excellent analysis of the problems caused by inflation and how they might be addressed, see Reed Shuldiner, Indexing the Tax Code, 48 Tax L. Rev. 537 (1993).

33 Gentry & Hubbard, note 24, at 6.

34 Much of what commonly is thought of as a return to capital is really a return to labor or an investor’s luck or ingenuity. Id. This is an important observation because such returns are treated the same under both an income tax and a cash flow tax.
Fortunately, for purposes of comparing the relative tax burdens of the income tax and the consumption tax, this allocation is not necessary. Under both taxes, all returns, regardless of source, are fully includible.\textsuperscript{35} The difference between the two taxes is with respect to their cost recovery provisions. A focus on these provisions permits comparison of the relative burdens without being overly concerned with how a particular return is characterized. As demonstrated below, a cash flow tax does not impose a burden on either the risk-free rate of return or the risk premium received by an investor.\textsuperscript{36} An income tax differs from the cash flow tax in that it only exempts the risk premium on an investment, not the risk-free rate of return. Returns from all other sources, including those to labor, luck, and inframarginal investments,\textsuperscript{37} bear a tax burden under both regimes. For this reason, the actual source of a particular return does not affect the basic comparison of the two taxes.

III. Burden on Capital Income Under the Cash Flow Tax

The cash flow tax permits investors to currently deduct their investments, a method commonly referred to as expensing. Under certain conditions,\textsuperscript{38} this method of cost recovery has the effect of equating the investor’s pre- and after-tax rates of return, thereby reducing the tax burden on capital income to zero. To illustrate, consider the following:

\textit{Example 1:} In a world without taxes, $T$ would invest $\$1,000$ in a bond bearing 10\% interest payable annually. Each year $T$ would receive $\$100$. Assume a flat 40\% cash flow tax were imposed. Each year $T$ still would receive $\$100$ in interest; her 10\% pretax rate of return would be unchanged. She would owe, however, $\$40$ in taxes, leaving her $\$60$. So far, these are precisely the results one would expect under an in-

\textsuperscript{35} This is true under an ideal cash flow tax, under which all receipts are includible and all investments are fully deducted or expensed. An alternative regime, known as the tax-prepaid approach, denies a deduction for the investment but excludes the yield from the investment. Under certain conditions, these two regimes are equivalent in present value terms. The return to some investments, such as that to a family business, is often a return to both capital and labor. Thus, in designing a cash flow tax, one might want to restrict the use of the tax-prepaid approach to those investments for which the yield is clearly capital income. See, e.g., Blueprints, note 8, at 110-11 (restricting use of tax-prepaid approach to financial assets).

\textsuperscript{36} See Section III.

\textsuperscript{37} Another possible source is a windfall gain.

\textsuperscript{38} For a discussion of these conditions, see Michael J. Graetz & Deborah H. Schenk, Federal Income Taxation: Principles and Policies 306-07 (3d ed. 1995), and Graetz, note 13, at 1602.
come tax. Under a cash flow tax, however, $T$ would be entitled to a deduction for her $1,000 investment, the value of which is $400. As a result, $T$ actually would be out of pocket only $600; she still would have $400 to invest or spend in any way she sees fit. $T$'s after-tax yield on her $600 net investment would be $60, or 10%—precisely what it was before the imposition of the tax.

This simple example illustrates what has been known since 1948: At a constant rate of tax and allowing for full loss offsets, expensing the cost of a capital asset is the equivalent of exempting the yield from that asset. Since $T$'s pretax and after-tax yields would be the same, it appears that the tax imposes no burden on the yield from $T$'s investment in the bond.

It is worthwhile to look at the government's role in this investment. The government is in a very real way a co-investor in the bond, if you will, a 40% limited partner. All gains and losses would be shared 60-40 by the investor and the government. The only difference between the government's role and that of a limited partner is that the government has no say in either making the investment or terminating it. These matters are totally within $T$'s control. By virtue of $T$'s initial deduction, the government could be viewed as investing $400 to acquire a 40% interest in the bond. Each year, $T$'s tax payments of $40 to the government would be exactly equal to the amount that $T$ would have paid a 40% limited partner. Similarly, if and when $T$ sold the bond, $T$ would owe taxes of 40% of the proceeds, which could be viewed as a return of the government's initial investment, or if the bond becomes worthless, $T$ and the government lose their respective investments. This analogy holds no matter how speculative the investment and no matter what the nature of the investment.

Thus far in the analysis, $T$ is not precisely in the same situation she would be were there no taxes. $T$ would have had $100 of interest in-

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39 Under a flat rate 40% income tax, $T$ would not be entitled to a deduction for her investment in the bond. Each year she would receive $100 of interest, 40% of which ($40) she would pay in taxes, leaving $60. $T$'s pretax rate of return would be 10% and after-tax rate of return would be 6%. At least in this simple example, an income tax appears to fully tax the yield from capital. As I demonstrate below, $T$ may be able to adjust her portfolio to lessen the impact of the tax. See Section IV.

40 The value of any deduction is the product of the taxpayer's marginal rate bracket, here 40%, and the amount of the deduction, here $1,000.

41 The first person to identify this relationship was E. Cary Brown, Business-Income Taxation and Investment Incentives, in Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen 300, 301 (1948).

42 For example, assume $T$ were to sell the bond for $1,000. Having expensed the bond, her basis would be zero and she would owe $400 in "taxes," the government's investment, leaving her original investment of $600.
come, not merely $60. But this does not account for the $400 $T$ saved in taxes by virtue of her $1,000 deduction. If she invested this additional amount, she would become entitled to yet another deduction (this time in the amount of $400), the value of which she also could invest, entitling her to yet another deduction. $T$ ultimately could invest $1,667 for which she would be entitled to a deduction worth $667. This would leave $T$ with a net investment of $1,000, precisely the amount that she would have invested in the tax-free world. She would receive $167 each year in interest, $67 of which she would owe in taxes, leaving her $100 after taxes. In sum, she would end up with $100 after taxes on her net investment of $1,000, a position identical to that which she would have been in in the world without taxes.

This example illustrates the generally accepted proposition that under a cash flow tax, an investor's pre-tax and after-tax rates of return are the same. There is not agreement, however, on exactly what this equivalence means. There are two principal views. The first is that the cash flow tax totally exempts the yield from an investment, regardless of whether the return is highly speculative or very conservative ("total exemption view"). The second view is that the cash flow tax exempts the yield on an investment only to the extent of the rate of return available on the reinvested tax savings ("tax savings view"). Thus, in the above example, the extent to which the income from $T$'s original $1,000 is considered taxed depends on the rate of return available on the reinvestment of her tax savings. Under the tax savings view, the yield on the first investment is taxable to the extent that the return on the reinvested proceeds is lower than that on the original investment.

43 This can be determined by dividing the amount the investor has to invest by $(1 - t)$ where $t$ is the rate of tax. On these facts, $1,000/(1 - .4) = 1,667$. Note that the calculations are rounded to the nearest dollar.

44 $40\% \times $167 = $67$.

45 See, e.g., Warren, Fairness, note 11, at 938.


47 There are four views on the extent to which a cash flow tax exempts capital income, all of which are discussed in Warren, Capital Income, note 24, at 2-4. These views are that the cash flow tax exempts (1) all capital income (the total exemption view), (2) only the normal rate of return on capital (the tax savings view), (3) only the riskless rate of return on capital, and (4) no capital income. Professor Warren finds the total exemption view wanting in that it "... ignores the possibility of inframarginal returns." Id. at 4. He then analyzes the tax savings view, which explicitly recognizes the existence of these returns and maintains they are taxable under a cash flow tax to the extent they exceed the taxpayer's normal return. Id. at 4-6. Third, Professor Warren discusses the view that the cash flow tax only exempts the risk-free rate of return. Id. at 6-10. As I show below, under certain conditions, the only return to capital that is taxed under an income tax is the risk-free rate of return. See Section IV. To the extent this is true, the only return that the cash flow tax exempts that is taxed by the income tax is the risk-free rate of return. This third view is not inconsistent with either the total exemption view or the tax savings view. Finally, Professor...
The difference between these two competing views is primarily semantic. The total exemption view is premised on the fact that under a cash flow tax, the government is a partner in all ventures—those that are lucrative as well as those that are not. It cannot be excluded. Therefore, the government invests in whatever an investor chooses, and in all cases, the investor's yield on her net investment is tax-free. The tax savings view, on the other hand, does not accept the government's participation as a matter or right and is designed to highlight one particular situation: where an investor faces an attractive, but limited, investment opportunity. As is the case with all other investments, the government cannot be excluded from participating in this investment. To the extent that its participation prevents the investor from investing as much in this particular venture as she would like, the tax savings view would hold that her return from this attractive investment is exempt from the cash flow tax only to the extent that the investor is able to reinvest her tax savings. To illustrate this point, consider the following:

Example 2: T has the opportunity to invest in Project X, which she believes will yield an extraordinary return. Although the normal rate of return for investments of this risk and type is 10%, T believes Project X will yield 20%. In the absence of taxes, T would invest $1,000. If the amount she can invest is not limited, she could duplicate this no-tax result by investing $1,667 in the project. If she did, her net investment would be $1,000 (with the other $667 the government's share of the investment) and her entire yield from this project would be exempt from tax.

Suppose, however, the amount that T could invest in Project X was limited to $1,000. If she invested the maximum, her net investment in a world with a flat 40% cash flow tax would be only $600 (with the other $400 the government's share of the investment). If Project X yielded 20% annually, T would earn $200 less $80 in taxes. Assume that T invested the additional $400 she wanted to invest in Project X in another investment that yielded 10% or $40 after taxes. There-

Warren discusses the view that all capital income is taxed under the cash flow tax. Warren, Capital Income, note 24, at 15. Under a pure cash flow tax, all receipts, including those from capital, are includible in the base and therefore, in some sense, subject to tax. But as Professor Warren points out, this observation ignores the basic difference between an income tax and a consumption tax: Under a cash flow tax, capital investments are expensed while under an income tax, they are not. Id. Therefore, although in some technical sense, this characterization may be accurate, if it is used in the context of comparing an income tax and a consumption-based tax, to say that all capital income is subject to a cash flow tax is not helpful and indeed quite misleading.
fore, taking both investments into account, her after-tax yield would be $160, or 16%.

The issue is whether it is more appropriate to say that T's yield from both investments is totally exempt from the tax, or that T's yield on Project X is subject to tax at the rate of 20% (that is, $40/$200). 48

Although the limited investment situation may be an important one, I prefer the total exemption view; it is both simple to understand and to apply. The tax savings view, on the other hand, is neither. Consider first the typical case where T's investment opportunities are not limited. Assume that T in Example 1 could have, but chose not to, increase her investment in the 10% bond. Instead, she invested her tax savings in another asset that yielded, in the alternative, 6% or 12%. 49 Under the total exemption view, how she invests her tax savings is irrelevant. In all events, she would receive a 10% tax-free return on her $600 investment in the bond. It is unclear how this should be characterized under the tax savings view. One way would be to look at the yield of her actual investment. Under this approach, if she chose to reinvest at 6%, her total annual yield would be $84 and her investment in the bond would be deemed to be taxed at the rate of 16%; on the other hand, if she reinvested at 12%, her annual yield would be $108 and she apparently would be considered to be subject to a negative tax on the bond. These results do not seem helpful (or even sensible). On these facts, it seems perfectly plausible, indeed likely, that, in a tax-free world, T might very well have invested $600 in the bond and $400 in one of the two alternative investments. Where the investment opportunities are not limited, I do not find the tax savings view helpful.

Now consider a limited investment opportunity. First of all, how does one know whether an investor would have invested more in a particular investment? 50 Furthermore, even assuming an investor would have invested more, it is not clear how to apply the tax savings view if the lucrative investment does not do as well as expected. To illustrate, suppose Project X in Example 2 were a limited investment opportunity and that, in a tax-free world, T would have invested $1,000. Under a cash flow tax, this would not be possible and therefore T would invest only (net) $600. Assume she invested her $400 tax savings in the 10% bond. Now suppose Project X did not do as

48 In a tax-free world, T would have had $200 return on Project X. As a result of the tax, T's return has been reduced to $160: $120 from Project X and $40 from the reinvested funds.

49 She might choose one of these alternatives because of her relative preference for risk.

50 The investor might not want to take full advantage of this investment opportunity for a variety of reasons, including a desire to diversify her portfolio.
well as expected and lost 5% in the first year, resulting in a $30 loss. The bond, on the other hand, earned, as expected, 10% in that year, resulting in $40 of income. If T had been permitted to invest $1,000 in Project X, she would have lost $50, but because of the cash flow tax, she actually has net income of $10; the cash flow tax saved T $6. The tax savings view is not helpful here either.

In sum, when thinking about the taxation of the income from capital under a cash flow tax, it is most useful to view the tax as imposing no burden on the income from capital, understanding, of course, that the government is a partner in all investments and cannot be excluded. Although it is certainly plausible to maintain that limited capital investments with inframarginal returns do bear a burden under both the cash flow tax and the income tax, since the burden would be the same under both taxes, I can disregard it and presume that the cash flow tax imposes no burden on capital income. The key issue, therefore, is the nature of the burden on capital income imposed by an income tax.

IV. Burden on Capital Income Under a Normative Income Tax

In this Section, I analyze the burden imposed on capital income under a normative, proportional income tax based upon the Haig-Simons definition. The tax base includes all accretions to wealth, whether or not realized, and permits a full loss offset for unsuccessful ventures. It does not include nominal gains attributable to inflation. As I demonstrate below, the burden imposed on capital income by a normative income tax is much smaller than generally is believed. Indeed, it is so small that its impact on large concentrations of wealth would be negligible. I then demonstrate that the ultimate impact of such a tax on individual investors depends on two factors: the investor's sophistication and her borrowing rate. If an unsophisticated investor does not adjust her portfolio to take the tax into account, her rate of return will be reduced by the rate of the tax imposed. On the other hand, a sophisticated investor, by adjusting her portfolio, can practically eliminate the impact of the tax on her return. Indeed, it has been demonstrated that under certain conditions, an income tax only imposes a burden on the risk-free rate of return and not on risk premia. To the extent this is true, the only difference between an income tax and a cash flow tax is that the former burdens the risk-free rate of return and the latter does not. I demonstrate, however, that

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51 This observation was first made by Evsey D. Domar & Richard A. Musgrave, Proportional Income Taxation and Risk-Taking, 58 Q.J. Econ. 388, 390 (1944).
52 See, e.g., Bankman & Griffith, note 22.
this conclusion is premised on the assumption that the investor can borrow at the risk-free rate of return. If this assumption is relaxed, and (more realistically) it is assumed that investors have a range of borrowing rates, I conclude more generally that a sophisticated investor's capital income is burdened only to the extent of her borrowing rate. Finally, I demonstrate that, for a sophisticated investor, the burden of the income tax on capital income is the equivalent to that of a wealth tax imposed at a rate equal to the investor's borrowing rate times the nominal income tax rate.53

The key to understanding how an investor can substantially reduce the impact of the income tax is to recognize the direct relationship between risk and rates of return; the higher the risk associated with an investment, the higher the rate of return.54 The precise amount of risk

53 See Kaplow, note 27, at 792.

54 The seminal article on risk and return is Harry M. Markowitz, Portfolio Selection, 7 J. of Fin. 77 (1952). For an excellent and accessible discussion of risk and rates of return, see Richard A. Brealey & Stewart C. Myers, Principles of Corporate Finance chs. 7-9 (5th ed. 1996).

Two types of risk are associated with investments, unique risk and market risk. Unique risk is that risk associated with a particular firm or a particular industry. Even when the economy as whole is thriving, a particular company may be doing poorly due to factors unique to that firm (for example, management problems). For an investor who has invested all of her capital in a single investment, such as a single block of stock, unique risk is extremely important. A sophisticated investor, however, essentially can eliminate this type of risk by diversifying her portfolio. By investing in several different companies or industries—or possibly in a market index—an investor can protect herself from the risks associated with one particular company. For this reason, unique risk is sometimes referred to as diversifiable risk and sophisticated investors with diversified portfolios generally are not concerned with it. See id. at 156.

Market, or systemic, risk is a function of the economy as a whole and affects all investments. Market risk cannot be eliminated, only managed. When the economy is thriving, most investments thrive as well; when the economy struggles, most investments suffer. Factors that make up market risk include interest rates, inflation, exchange rates, and energy costs. Although these factors tend to affect the value of all investments, some investments are more sensitive to these factors than others. The more sensitive an investment, the riskier it is, and the higher its expected rate of return must be. Id.

Market risk varies widely among investments. Three-month Treasury bills are generally thought to be as close to a risk-free investment as exists: The investor is sure to be paid a sum certain within a very short time. Over the 70-year period from 1926-1995, the average real annual yield on T-bills was .6%. Id. at 145. On the other hand, investing in the stock market is relatively risky. Over this same period, the average real annual yield on stock in large publicly-traded corporations was 9%, or 8.4% higher than that of T-bills. Id. at 145. This latter amount represents the average market risk premium paid to investors as compensation for bearing the risk associated with common stock.

What is the nature of this risk for which investors are compensated? Although the stock market as a whole has had an average nominal annual yield of 12.2% over the last 70 years, the fluctuations in that yield have been quite wide. For example, in 1931, the Standard and Poor's Composite Index dropped 43.3%; in 1933, that same index rose by 54%. Id. at 148-49. (The Standard and Poor's Composite Index represents a portfolio of the stock of 500 large firms.) These stocks account for approximately 70% of the value of all traded stocks. Id. at 144. Four times since 1926 (1930, 1931, 1937, and 1974), the stock market has de-
that an investor is willing to bear is a personal matter and is inextricably related to the amount an investor is willing to lose if the investment does badly. Because losses are fully deductible under a normative income tax, an investor can tolerate greater risk in a world with an income tax while maintaining the same exposure she would have had in a tax-free world. This is because the investor and the government share the risk of loss; the government bears the percentage of the loss equal to the tax rate \( t \) and the investor bears the balance, \( (1-t) \). Therefore, if an investor were willing to invest \$1,000 in a risky venture in a world without taxes, she should be willing to invest \$1,000/(1-t) in that venture in a world with a normative proportional income tax. By adjusting her portfolio in this way, the investor increases her rate of return and thereby reduces the impact of the tax. For a sophisticated investor who understands the basic relationship between risk and rates of return, it is a fairly simple matter to make these adjustments. If these adjustments are made, the burden im-

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55 Note that this is also the same factor used to determine the amount an investor would be able to invest under a cash flow tax after taking into account the benefits of expensing.
posed by an income tax on capital income is equal to the risk-free rate of return (or borrowing rate) on the investor's net investment.56

To illustrate these points, consider first a tax-free world in which there are only two investment possibilities, a risk-free asset yielding .6%, and a risky asset that has a 50% probability of yielding 30% and a 50% probability of losing 6%. The risky asset has an expected return of 12%57 and a risk premium of 11.4% (that is, the investment's expected rate of return above the risk-free rate). A has $1,000 to invest and, given her risk preferences, she invests $500 in the risk-free asset and $500 in the risky asset. In all events, A will earn $3 on her risk-free investment,58 and it is equally likely that she will have income of $150 or lose $30 on her risky investment. Therefore, A's portfolio as a whole will have either income of $153 (if she is lucky), or lose $27 (if she is unlucky):

<table>
<thead>
<tr>
<th></th>
<th>Lucky</th>
<th>Unlucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-free asset</td>
<td>$3</td>
<td>$3</td>
</tr>
<tr>
<td>Risky asset</td>
<td>150</td>
<td>(30)</td>
</tr>
<tr>
<td>Income (or loss)</td>
<td>$153</td>
<td>($27)</td>
</tr>
</tbody>
</table>

Since both outcomes are equally likely to occur, A's expected return on her portfolio is 6.3%.59

Now consider the impact on A's capital income if a normative 33 1/3% income tax were imposed. If A made no adjustment to her portfolio whatsoever, her pretax positions would be the same as in a tax-free world, but her after-tax positions would be reduced by one-third. After taxes, she would have either income of $102 (if she were lucky) or a loss of $18 (if she were unlucky). Her expected rate of return would be reduced by one-third to 4.2%.60

56 This assumes that the expected rates of return on risky assets remain the same after the introduction of the income tax. If a large number of investors make the suggested adjustments, this seems highly unlikely. As the demand for risky assets goes up, however, one might anticipate that the expected rate of return on the risky assets would go down. Nevertheless, it has been shown that this result could be avoided by the government increasing the supply of risky investments by adjusting its portfolio. See Kaplow, note 27, at 794.

57 Since the two possible outcomes are equally probable, the expected rate of return of this investment is equal to (30% + -6%)/2, or 12%.

58 .6% x $500 = $3.

59 This is simply the average of the two equally possible outcomes, that is, (-2.7% + 15.3%)/2 = 6.3%.

60 Although it would appear that A is bearing the full burden of this tax, her portfolio is less risky than it was in the absence of taxes. The apparent burden must be reduced by the value of this "insurance."
Before the imposition of the tax, A's expected rate of return was 6.3%; without adjusting her portfolio, A's expected rate of return is reduced by 33 1/3% to 4.2%.61

Suppose, however, that A is a sophisticated investor and adjusts her portfolio to take into account the fact that the government now bears 33 1/3% of the risk of loss. Because of this implicit risk sharing arrangement, A can increase her investment in the risky asset, thereby increasing her expected return, without exposing herself to more risk than she was willing to bear in a tax-free world. Where an investor increases her investment in a risky asset to an amount equal to $1/(1-t)$, two things occur: First, she will have precisely the same downside exposure that she had in the absence of taxes, and second, she will have eliminated her tax burden on the risk premium attributable to the risky asset.

To illustrate, suppose A increased her investment in the risky asset by 150%62 to $750 and reduced her investment in the risk-free asset to $250. With this adjusted portfolio, A would have either pretax income of $226.50 (if she were lucky), or a pretax loss of $43.50 (if she were not), and her after-tax position would be either income of $151 or a loss of $29:

<table>
<thead>
<tr>
<th></th>
<th>Lucky</th>
<th>Unlucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-free asset</td>
<td>$ 1.50</td>
<td>$ 1.50</td>
</tr>
<tr>
<td>Risky asset</td>
<td>$225.00</td>
<td>(45.00)</td>
</tr>
<tr>
<td>Pretax income (loss)</td>
<td>226.50</td>
<td>(43.50)</td>
</tr>
<tr>
<td>Taxes @ 33 1/3%</td>
<td>(75.50)</td>
<td>14.50</td>
</tr>
<tr>
<td>After-tax income (loss)</td>
<td>$151.00</td>
<td>($29.00)</td>
</tr>
</tbody>
</table>

This simple example illustrates several related points. Most importantly, A's portfolio adjustment increased A's expected after-tax rate of return from 4.2% to 6.1%63 without exposing her to any more risk than she was willing to bear in a tax-free world. Although she

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61 Once again, since both outcomes are equally likely, A's expected return is equal to (-$18 + $102)/2, or $42. A's expected rate of return is equal to $42/$1,000, or 4.2%.
62 $1/(1-.33) = 1.5$ or 150%.
63 A's expected return is equal to (-$29 + $151)/2, or $61 and her expected rate of return is $61/$1,000, or 6.1%.
may lose $45 on her risky asset if she is unlucky, this loss will be reduced by the value of her deduction (.33 x $45), so that her after-tax exposure would be $30. This is exactly what it would have been in the tax-free world in which she had invested $500 in the risky asset.

It is important to note that, after A adjusts her portfolio, her possible after-tax outcomes are precisely $2 less than they were in the tax-free world. If she was lucky, she would have income of $151 instead of $153, and if she was unlucky, she would have a loss of $29 instead of $27. These results are not coincidental. Indeed, as I prove below, if an investor under a proportional normative income tax makes the suggested portfolio adjustment, her expected return would be precisely what it would have been in the absence of taxes, less the product of her net investment, the tax rate, and the risk-free rate of return. This amount of tax must be borne, regardless of the outcomes of the particular investments, and is therefore in the nature of a wealth tax.

To demonstrate why this is so, reconsider a tax-free world. In this world, an investor's expected return (ER) from her portfolio can be expressed algebraically as follows:

$$ER = (W - X)r + X(r + p),$$

where $W$ is the investor's total capital invested, $X$ is the amount of her investment in the risky asset, $r$ is the risk-free rate of return, and $p$ is the risk premium for investing in the risky asset. This equation can be simplified to:

$$ER = Wr + Xp$$

If a proportional normative income tax were imposed, the investor's expected return would be reduced by the amount of the tax, so that her after-tax expected return would be:

$$\text{After-tax } ER = (1 - t)(Wr + Xp) = (1 - t)Wr + (1 - t)Xp$$

Finally, if the investor adjusts her portfolio by increasing the amount of her investment in the risky asset to $1/(1-t)$ and reducing her investment in the risk-free asset by the same amount, then her after-tax expected return would be:

$$\text{After-tax } ER = (1 - t)WR + (1 - t)Xp/(1 - t)$$

$$= (1 - t)WR + Xp$$

$$= Wr + Xp - Wrt$$

64 Applying this formula to A, A's expected return in the tax-free world is $63, determined as follows:

$$ER = ($1,000 x .6%) + ($500 x 11.4%) = $63.$$  

65 The amount, $X$, in this equation is the amount that the investor would have invested in the risky asset in the absence of taxes.
By comparing Equations (3) and (4), it is apparent that the portfolio adjustment has eliminated the tax burden on the risk premium. As Equation (5) shows, the only capital income that is burdened is the risk-free rate of return, \( r \), on the investor's net capital investment, \( W \).

By comparing Equations (2) and (5), it is also apparent that as a result of the income tax, the investor's expected return will be reduced only by an amount equal to \( Wr \). This reduction will occur regardless of the outcomes of her particular investments. Applying this learning to investor \( A \), one would expect \( A \) to bear a tax burden in the amount of \$2, that is, the product of net investment, \( W \) ($1,000), the risk-free rate of return \( r \)(.6%), and the tax rate, \( t \)(.33), or \$2, regardless of the outcome of the risky investment. These are precisely the results illustrated above.

The burden of the income tax on capital income could be characterized in yet another way: The tax has practically the same impact as an annual ex ante wealth tax in the amount of \( tr \), with no further tax on capital income. As demonstrated, \( A \) can adjust her portfolio so that she will have, after taxes, either income of \$151 or a loss of \$29. Suppose, rather than an income tax, there is a .2% (that is, \( 33 \frac{1}{3}\% \times .6\% \)) wealth tax imposed on \( A \)'s wealth at the beginning of the year but payable at the end of the year. If this were done, \( A \) would be unable to reduce the impact of the tax by adjusting her portfolio and would therefore invest as she would in a tax-free world. At year end, before taxes, she would either have income of \$153 or a loss of \$27; however, in all events, she would owe \$2 in taxes. This places her in the same position she would have been in under a 33 \( \frac{1}{3}\% \) income tax.

Consider another investor, \( B \), who also has \$1,000 to invest. \( B \) is less risk averse than \( A \), and, in the absence of taxes, would have invested all of her capital in the risky asset. In that case, \( B \)'s expected

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66 These principles in this simple world remain valid. To illustrate, consider \( D \), a sophisticated investor who lives in a complex world. She has a well-diversified portfolio with an aggregate net value of \$1,000. The risk-free rate of return and \( D \)'s borrowing rate are both .6% and the average market risk premium is 8.4%. In a tax-free world, \( D \) would choose a portfolio with a \( \beta \) of 1 and would have had an expected rate of return of 9% determined as follows:

\[
ERR = r + \beta P = .6\% + (1 \times 8.4\%) = 9\%
\]

If a 33 \( \frac{1}{3}\% \) normative income tax were imposed, \( D \) could substantially reduce the impact of that tax by increasing the riskiness of her portfolio (that is, her \( \beta \)) by \( 1/(1-t) \) to 1.5. By doing so, she would eliminate the burden on her expected risk premium and would bear the burden of the tax only to the extent of \( Wr \), or .2% of her wealth. She could increase the risk of her portfolio in many ways, including changing the proportion of risky assets, borrowing, or simply finding riskier investments. Whichever route is chosen, the key is for \( D \) to increase the overall risk of her portfolio by 50%. If she did, her pretax expected rate of return would be 13.2% (.6% + 1.5 \times 8.4%), and her after-tax expected rate of return, 8.8%, precisely .2% less than in a world without taxes.
rate of return would be 12%, and at year end, she would have either income of $300 or a loss of $60.\textsuperscript{67} If a 33 1/3% normative income tax were imposed, to reduce the impact of the tax, \( B \) should increase her investment in the risky asset to $1,500\textsuperscript{68} by borrowing an additional $500 capital. If she could borrow at the risk-free rate(.6%), \( B \) would have an annual interest expense of $3.\textsuperscript{69} At the end of the year, before taxes, she would either have income of $447 (if she were lucky) or a loss of $93 (if she were not), and, after taxes, income of $298 or a loss of $62:

<table>
<thead>
<tr>
<th></th>
<th>Lucky</th>
<th>Unlucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross income (loss)</td>
<td>$450</td>
<td>($90)</td>
</tr>
<tr>
<td>Interest expense</td>
<td>(3)</td>
<td>(3)</td>
</tr>
<tr>
<td>Pretax income (loss)</td>
<td>447</td>
<td>(93)</td>
</tr>
<tr>
<td>Taxes @ 33 1/3%</td>
<td>(149)</td>
<td>31</td>
</tr>
<tr>
<td>After-tax income (loss)</td>
<td>$298</td>
<td>($62)</td>
</tr>
</tbody>
</table>

Once again, this illustrates that by adjusting one’s portfolio, an investor can substantially reduce the impact of a normative income tax. On these facts, \( B \) is $2 worse off than she would have been had no tax been imposed, and is in the same position as if a .2% ex ante wealth tax had been imposed. \( B \) bears the same tax burden as \( A \); their tax burdens are independent of their risk preferences and their actual incomes. As was the case with \( A \), \( B \)'s tax burden is equal to Wrt, or ($1,000\textsuperscript{70} x .6% x .33), or $2.\textsuperscript{71}

\textsuperscript{67} There is a 50-50 chance the risky asset will yield 30% and a 50-50 chance it will lose 6%.

\textsuperscript{68} $1,000/(1 -.33) = $1,500.

\textsuperscript{69} $500 x .6% = $3.

\textsuperscript{70} Note that although \( B \) actually invested $1,500 in the risky investment, her net investment remained $1,000, that is, total investment less borrowing.

\textsuperscript{71} As an additional example, consider Investor \( E \), who in the tax-free world, would have invested $4,000 in the risky asset by borrowing $3,000 and using $1,000 of her own capital. \( E \)'s expected yield would have been $480 less borrowing expenses. If she were able to borrow at the risk-free rate of .6%, her interest expense would be $18 and her expected return $462: It is equally likely that she would have had net income of $1,182 ($1,200 - $18), or a loss of $258 (that is, $240 loss plus interest expense of $18) or ($1,182 - $258)/2. If a 33 1/3% income tax were imposed, \( E \) could eliminate the burden of the tax on her risk premium by increasing her investment in the risky asset by 50% to $6,000. If she did, it would be equally likely that she would have after-tax income of $1,180 or a loss of $260 computed as follows:

<table>
<thead>
<tr>
<th></th>
<th>Lucky</th>
<th>Unlucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross income (loss)</td>
<td>$1,800</td>
<td>($560)</td>
</tr>
<tr>
<td>Interest expense</td>
<td>(30)</td>
<td>(30)</td>
</tr>
<tr>
<td>Taxable income (loss)</td>
<td>1,770</td>
<td>(390)</td>
</tr>
<tr>
<td>Taxes @ 33 1/3%</td>
<td>(590)</td>
<td>130</td>
</tr>
<tr>
<td>After-tax income (loss)</td>
<td>$1,180</td>
<td>($260)</td>
</tr>
</tbody>
</table>
The above conclusion assumes that $B$ is able to borrow at the risk-free rate. A fair question is whether that assumption is realistic. If investors were able to secure their borrowing with their potential tax refunds from the government, then, at least theoretically, they might be able to borrow at the risk-free rate.\footnote{Under an income tax with full loss offsets, it is quite possible that a “refund loan” would be developed; that is, a loan secured by, inter alia, the investor’s potential refund if she was unlucky. There would be some obvious problems designing this loan. For example, the potential refund might be used by the government to offset a tax liability generated by other sources (that is, wages). Even if this were to occur, it is still unlikely that all investors would be able to borrow at the same risk-free rate. For example, current interest rates on secured loans vary depending on a variety of factors, including economic clout and creditworthiness. For example, I contacted an investment banking firm that is one of the largest lenders on Wall Street. (The firm asked that I not use its name.) It currently has over $40 billion of outstanding loans to customers on margin. All these loans are well-secured by stock and other securities. Nevertheless, the interest rates charged on these accounts vary from .75% to 4% above the federal funds rate. I understand that the differential in rates is primarily due to the size of the loan and transaction costs, not creditworthiness. Margin loans, because of various regulatory requirements, are expensive to administer. See, e.g., Federal Reserve Board Regulations T, U, G, and X, 12 C.F.R. § 220.1-132 (Regulation T), 221.1-.125 (Regulation U), 207.1-.114 (Regulation G), 224.1-.3 (Regulation X) (1997).} To date, however, only a few of the wealthiest taxpayers are able to borrow at anything close to the risk-free rate. For this reason, I examine below the impact of the income tax on investors who have somewhat higher borrowing rates. I demonstrate that the burden of the income tax varies directly with the rate at which an investor must borrow to adjust her portfolio—the higher the investor’s borrowing rate, the higher her tax burden.

To illustrate, consider investor $C$, who has $1,000 to invest. $C$ has the same risk preferences as $B$, but her borrowing rate is 3%. In a tax-free world, she would invest her entire $1,000 in the risky investment. If she were lucky, she would have income of $300; if she were not, she would lose $60. If a 33 1/3% normative income tax were imposed, to reduce the impact of the tax, she must borrow $500 to increase her investment in the risky asset to $1,500. Therefore, she would have an annual interest expense of $15.\footnote{\$500 \times 3\% = \$15.}$ Before taxes, she would have either income of $435 or a loss of $105 and, after taxes, income of $290 or a loss of $70:
What is most striking about these results is that C's tax burden is five times that of B: C bears a tax burden of $10 no matter what the outcome of her investments (that is, C has $10 less after taxes than she would have had in a tax-free world) whereas B bears only a $2 burden. The reason is that C's borrowing rate is higher than B's.\(^7\)\(^4\) C would be able to shift the burden of the income tax to the government on her risky investment only to the extent that its yield exceeds her borrowing rate. In fact, C's tax burden is equal to \(W_b t\) where \(b\) is her borrowing rate and, on these facts, is equivalent to a 1% wealth tax on C's capital. The implication of this relationship is that the effective rate of tax on an investor is inversely related to her credit rating.

This result is problematic. As a general proposition, the wealthier an investor, the better her credit rating and the lower her borrowing rate. Under a normative income tax, therefore, the lower one's borrowing rate, the lower one's tax burden. Unless all investors are able to borrow at the risk-free rate or are able to adjust their portfolios without borrowing, a normative income tax likely would be regressive with respect to wealth.\(^7\)\(^5\) This is at least somewhat inconsistent with the strongest positive argument favoring an income tax—to tax wealth.

In summary, this analysis demonstrates that if a normative proportional income tax were in place, a sophisticated investor could reduce the impact of the tax on capital income so that only the risk-free rate of return (or her borrowing rate) on her net capital investment would be burdened by the tax. This tax would not depend on the success or failure of the investor's investments and therefore would be in the nature of a capital levy on wealth. To the extent that the investor could borrow at the risk-free rate, the tax on wealth would equal the product of the risk-free rate of return and the nominal tax rate. For example, if a normative proportional income tax of 33 1/3% had been in place during the last 70 years, it would

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\(^7\)\(^4\) A possible partial explanation for why C's after-tax return is less than B's is that C's portfolio is less risky than B's. This would be true to the extent that C's higher borrowing rate is due to C's credit risk. In effect, by borrowing, C is shifting some of her apparent risk to her lender.

\(^7\)\(^5\) With the advent of sophisticated financial instruments, it is much easier for an investor to adjust her portfolio without borrowing.
have been the equivalent of an annual wealth tax of only .2% (assuming a .6% average real rate of return). Such a tax would have had very little impact on the wealth of a sophisticated investor.

Historically, not many taxpayers have been able to borrow at the risk-free rate. To the extent that an investor's borrowing rate is higher than the risk-free rate and she uses borrowed funds to adjust her portfolio, the burden of the normative income tax on capital income is equivalent to a tax on the investor's wealth equal to the product of the investor's borrowing rate and the nominal tax rate. For example, if a normative proportional income tax of 33 1/3% had been in place over the last 70 years, an investor whose real borrowing rate averaged 3% would have been subject to the equivalent of an annual wealth tax equal to 1%. Since wealthier individuals tend to have lower borrowing rates, a normative income tax appears to be a regressive wealth tax.

V. Burden Under an Unindexed Income Tax

In the debate as to whether a normative income tax or normative consumption tax would constitute a better base, very little attention is paid to their less normative relations, such as an unindexed income tax. It invariably is assumed that an income tax must be indexed to measure income properly. Although I am aware of no one who has championed an unindexed income tax, it is useful to analyze the burden imposed by such a tax for two reasons. First, the U.S. income tax does not index the basis of either real or financial assets, and it seems unlikely that it will do so, at least in the near future. It is

76 This is because "the debate involves the choice of two competing idealized tax bases, and under the idealized income tax, inflationary gain is not taxed." Bankman & Griffith, note 22, at 397.

77 Various Code provisions are indexed for inflation. See, e.g., § 1(f) (rate schedule), § 63(c)(4) (standard deduction), and § 151(d)(4) (personal exemption).

78 Another significant difference between current law and a normative income tax is that the current system only takes gains and losses into account when realized. See IRC § 1001. As a result, investors are able to reduce the tax burden on their capital income simply by deferring recognition of their gains. It is estimated that the effective rate on capital gains is perhaps one-quarter to one-third of the statutory rate, ignoring inflation. The Capital Gains Controversy: A Tax Analysts Reader 1 (J. Andrew Hoerner ed., 1992). Furthermore, approximately one-half of all accrued gains are held until death and are never taxed. Mervyn A. King & Don Fullerton, The Taxation of Income From Capital 221 (1984); see generally Noel B. Cunningham & Deborah H. Schenk, The Case for a Capital Gains Preference, 48 Tax L. Rev. 319, 322-24 (1993).

Of more importance for the current discussion is the fact that loss limitations are necessary to prevent cherry picking, that is, to prevent taxpayers from recognizing their losses while deferring gains. See generally Robert H. Scarborough, Risk, Diversification and the Design of Loss Limitations Under a Realization-Based Income Tax, 48 Tax L. Rev. 677 (1993). There are several different loss limitations under current law. First, as a general proposition, taxpayers have no refund if they have an overall loss for the year. See
worthwhile therefore to identify the impact of this flaw on the tax burden on capital income. This Section demonstrates that an unindexed income tax imposes a far greater burden on capital income than a normative income tax, and that the burden imposed varies directly with the rate of inflation. Second, as noted earlier, one of the strongest arguments favoring an income tax is that it indirectly taxes wealth.\textsuperscript{79} Since an unindexed income tax imposes a far greater burden

\begin{flushright}
Michael Livingston, Risky Business: Economics, Culture and the Taxation of High-Risk Activities, 48 Tax L. Rev. 163, 188-89 (1993). Depending on the type of loss, it might be carried back or forward, but the loss itself is not refundable. Additionally, there are several rules designed to limit certain specific types of losses such as net operating losses, capital losses, and passive activity losses.

For a taxpayer (usually a corporation) engaged in a business, the most important type of potential loss is a net operating loss (NOL) from the business' operations. Under current law, if a taxpayer has an NOL for a particular year, she is entitled to carry the loss back to her prior two taxable years to offset any operating income she may have had, and the balance, if any, forward 20 years to offset any future operating income. IRC § 172(b)(1)(A) (The three-year carryback of former law is retained for limited situations found in § 172(b)(1)(F)). This rule strongly favors well-established, successful firms, especially ones that are diversified. If such a firm has a current loss in an amount that is less than its net income for the prior three years, it essentially is entitled to a refund. Therefore, in analyzing the risks associated with a particular investment, established firms have the benefit of something approaching full loss offsets. See Livingston, supra, at 190. On the other hand, new firms with no past earnings must contend with loss limitations. Often new businesses expect to have operating losses in their first few years. Although these losses can be carried forward 20 years, if and when the new business is able to use these carryovers, they will be worth less than they would be if they were currently usable. Since these facts must be taken into account in making investment decisions, new companies are not able to shift as much of the risk to the government as established firms.

The Code also has limitations on the use of capital losses. Corporations can use capital losses only to the extent of capital gains while individuals can use capital losses to the extent of capital gains plus $3,000. IRC § 1211. As in the case of NOLs, these loss limitations also affect taxpayers differently. A well-diversified investor probably will have sufficient unrealized gains to offset any current losses that the investor might incur. Therefore, in making investment decisions, such an investor faces a situation that approaches one with full loss offsets. This is not the case for many small investors who often cannot diversify except through a mutual fund. These investors must take the loss limitations seriously.

In addition, the passive activity loss rules, enacted to address tax shelters, seriously limit passive losses for all covered taxpayers. See IRC § 469. The principal effect of these rules is to discourage covered taxpayers from investing in passive activities. For this reason, these rules do not act as a limitation on losses so much as they direct investment and, as a practical matter, do not limit the losses of many taxpayers. See generally Stanley A. Koppelman, At-Risk and Passive Activity Limitations: Can Complexity Be Reduced?, 45 Tax L. Rev. 97 (1989).

This brief survey illustrates that the existing loss limitations do not apply with equal force to all taxpayers. Well-diversified businesses and investors do not have to worry to any great degree about these limitations and can make their decisions on almost the same basis as if there were full loss offsets. New businesses and investors who are not well-diversified, however, must take these limitations into account in determining the amount of risk they are willing to undertake. This latter group therefore is unable to reduce the tax burden on their capital income as effectively as the former and therefore bear a greater tax burden. Once again, this seems an untoward result.

\textsuperscript{79} See text accompanying note 16.
on wealth than would a normative income tax, some observers actually may prefer an unindexed income tax to its normative cousin. Others, however, may find the haphazard way in which the burden is imposed to be arbitrary and capricious.

It frequently has been recognized that the failure to index the basis of assets results in the overstatement of income, increasing the burden on capital. The real impact of the failure to index on the burden on capital, however, comes from its impact on the risk-free rate of return. As has been demonstrated, a sophisticated investor can reduce the burden of a normative income tax on her capital income to an amount equal to the risk-free rate of return (or borrowing rate) on her net capital investment times the tax rate, or \( W_{rt} \). Since a normative income tax is indexed for inflation, \( r \) is the real risk-free rate of return, an amount that has averaged .6% per year over the last 70 years. Under an unindexed income tax, however, \( r \) is the nominal risk-free rate of return, an amount that includes inflation, which has averaged 3.7% over the same period of time. This suggests that the real tax burden imposed on capital income over this period of time would have been on average over six times greater under an unindexed income tax than it would have been under a normative income tax. Furthermore, the magnitude of the burden imposed by an unindexed income tax is primarily a function of inflation, not real income. During periods of low inflation, the burden would be relatively modest while during periods of high inflation, the burden would be much greater.

To illustrate these points, assume there is annual inflation of 3%. Although the presence of inflation would have the effect of increasing the nominal returns, it would have no impact on an investor's tax burden under a normative income tax. A sophisticated investor still could reduce her burden to \( W_{rt} \) where \( r \) is the real risk-free rate of return. As was shown, if the real risk-free rate of return were .6%

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80 See, e.g., Shuldiner, note 32, at 548-50.
81 For example, assume an investor buys stock for $100 in Year 1 and sells it in Year 5 for $200, and that during that five-year period, there was 25% inflation. Although the investor would have an economic gain on the stock of only $75 ($200 - $125), under current law, her gain would be $100. IRC § 1001(a).
82 See Section IV.
83 See authorities cited in note 23.
84 See Bankman & Griffith, note 22, at 397 (recognizing that an investor cannot offset inflation returns through portfolio adjustments).
85 Ibbotson, note 23, at 31.
86 The nominal expected return on the risk-free asset would increase to 3.6% and that of the risky asset would increase to 15%.
87 To illustrate, reconsider investor A who, in the absence of taxes, would have invested $500 in the risk-free asset and $500 in the risky asset for an expected nominal yield of 9.3% (6.3% real). If a normative 33 1/3% income tax were imposed, after adjusting her portfolio
and a 33 1/3% normative income tax were imposed, a sophisticated investor could reduce the burden on her wealth to .2%. On the other hand, if the income tax imposed is not indexed for inflation, the relevant risk-free rate becomes 3.6%, the nominal risk-free rate. Therefore, the tax burden imposed on an investor's wealth would be 1.2%, an amount six times as great as it would be under a normative income tax.

This analysis suggests that the real tax burden on capital is primarily a function of the rate of inflation and varies directly with it. The table below illustrates this point by identifying the tax burden on an investor's wealth for various rates of inflation under an unindexed 33 1/3% income tax. It assumes the real risk-free rate of return is .6%.

<table>
<thead>
<tr>
<th>Inflation Rate</th>
<th>Rate of Tax on Wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>.2%</td>
</tr>
<tr>
<td>3%</td>
<td>1.2%</td>
</tr>
<tr>
<td>6%</td>
<td>2.2%</td>
</tr>
<tr>
<td>9%</td>
<td>3.2%</td>
</tr>
<tr>
<td>12%</td>
<td>4.2%</td>
</tr>
<tr>
<td>18%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

It is easy to see that the burden imposed on a sophisticated investor's capital under an unindexed income tax is almost entirely a function of inflation. From a policy perspective, this dependence is incredibly difficult to justify. Why should the tax burden on capital be 11 times greater at an inflation rate of 6% than the burden would be in the absence of inflation? If one believed that wealth should bear a greater burden than that imposed by a normative income tax, and if the rate of inflation were relatively stable and predictable, then one might prefer an unindexed income tax to its normative cousin. For

to minimize the impact of the tax, A's expected nominal after-tax return would be reduced to 9.1% (6.1% real), a reduction of .2%. This reduction in A's expected return of .2% is the tax burden on her capital income and is equivalent to a wealth tax on A of the real risk-free rate of return (.6%) times the tax rate (.33), or .2%.

88 3.6% x .33 = 1.2%.

To illustrate, if investor A adjusted her portfolio to minimize the impact of such a tax, she would invest $750 in the risky asset, and $250 in the risk-free asset. It is equally likely that she would have after taxes either income of $171 or a loss of $9:

<table>
<thead>
<tr>
<th></th>
<th>Lucky</th>
<th>Unlucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk-free asset</td>
<td>$ 9.00</td>
<td>$ 9.00</td>
</tr>
<tr>
<td>Risky asset</td>
<td>247.50</td>
<td>(22.50)</td>
</tr>
<tr>
<td>Pretax income (loss)</td>
<td>256.50</td>
<td>(13.50)</td>
</tr>
<tr>
<td>Taxes @ 33 1/3%</td>
<td>(85.50)</td>
<td>4.50</td>
</tr>
<tr>
<td>After-tax income (loss)</td>
<td>$171.00</td>
<td>($9.00)</td>
</tr>
</tbody>
</table>

Since these two outcomes are equally likely, A's nominal expected rate of return is 8.1%. Of this, 3% represents inflation so that her real rate of return is only 5.1%. This is 1.2% less than she would have had in the absence of taxes.
example, if one believed that wealth should bear an annual burden of 1.2%, and the rate of inflation was relatively stable at 3%, then an unindexed income tax would produce the appropriate tax burden on wealth. The problem with this position is that, historically, the inflation rate has not been stable. For example, over the last 20 years, the annual rate of inflation has been as high as 13.3% and as low as 2.54%. Therefore, such an unindexed income tax would have placed an annual burden on a sophisticated taxpayer's wealth during this period of time that would have varied from a low of 1.05% to a high of 4.63%. It seems perverse that the magnitude of any tax should depend so heavily on the vagaries of the economy and the policies of the Federal Reserve Board.

VI. CONCLUSION

The principal difference between a normative income tax and a normative consumption tax is that the income tax imposes a burden on capital income—and therefore wealth—and the consumption tax does not. For this reason, in the absence of a direct wealth tax, those who believe that accumulations of wealth should be taxed (as I do) have tended to favor the income tax as a second-best alternative (as I have). In this Article, however, I demonstrate that a normative income tax is not nearly as appealing as it first appears to be for several reasons. First, the burden imposed by a normative income tax on capital income is quite small. Indeed, under certain conditions, the income tax may burden only the real risk-free rate on an investor's portfolio, a rate that historically has averaged only .6%. This burden is equivalent to a tax on wealth equal to the product of the real rate of return and the tax rate.

Second, a normative income tax places a premium on sophistication that would be unnecessary under a cash flow tax. At a minimum, this imposes on less sophisticated taxpayers the cost of seeking professional investment advice. In the absence of such advice, many unsophisticated investors pay more in taxes than they would if they made the appropriate portfolio adjustment. Third, the burden imposed on capital income by a normative income tax is directly related to the investor's borrowing rate. The higher the individual's borrowing rate, the higher the burden. Since borrowing rates tend to be inversely related to wealth, the tax burden imposed by a normative income tax is

90 The annual inflation rate was 13.3% in 1979, Ibboton, note 23, at 32, and was 2.54% in 1995, id. at 39.
91 (2.54% + .6%) x .33 = 1.05%.
92 (13.3% + .6%) x .33 = 4.63%.
regressive with respect to wealth. I find it difficult to endorse a normative tax with these characteristics.

Finally, as a practical matter, the United States does not have, nor will it ever have, a normative income tax. It differs from the ideal in many ways. One of the more important differences is that under the U.S. system, the basis of assets is not indexed for inflation. I demonstrate that the tax burden on capital income under an unindexed income tax is primarily a function of inflation and varies directly with it. An unindexed income tax imposes a much greater burden on capital income than would a normative income tax, but is imposed in such an arbitrary manner that most observers would find it unappealing.

This leads me to reject the income tax both as an ideal and a practical reality. To the extent that a normative income tax does burden wealth, it does so in ways that I find unsatisfactory. Since I disapprove of the distribution of the tax burden under the ideal, I would not approve of the burden imposed by a practical tax base whose distribution of tax burden mirrored the ideal. At bottom, there must be a better way.